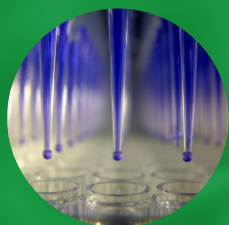


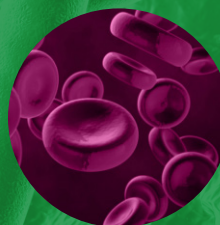
# Premium Drug Discovery Services

Assays and Models

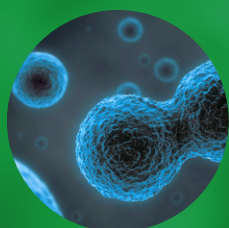
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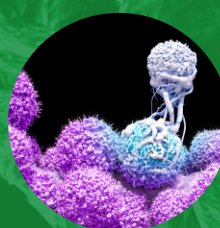
Biochemical &  
Biophysical



Safety &  
Toxicology



Cell-based



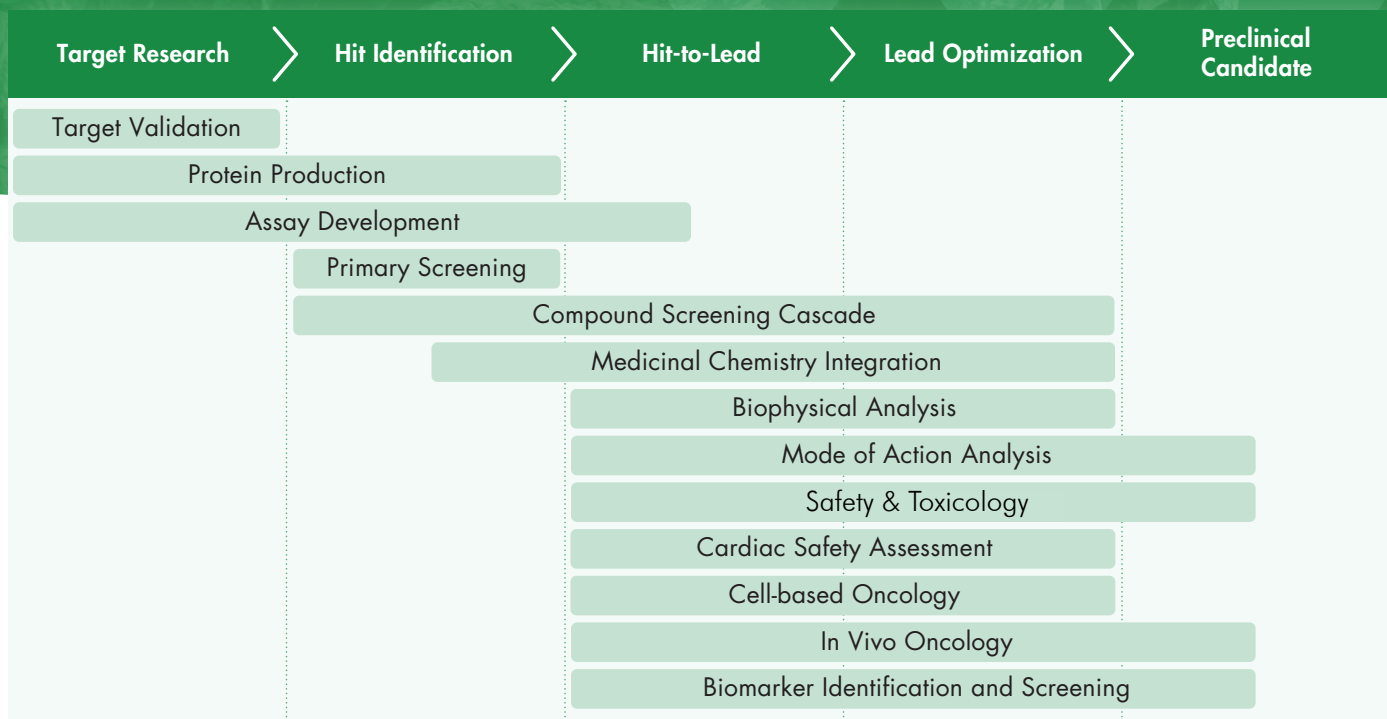
In Vivo

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# Premium Drug Discovery Services

Since our founding in 2001, we have had one singular obsession: We strive to give our clients a personalized and collaborative research experience. We are here to help you find the answers you need to develop the best possible drug candidate for treating patients with cancer and other diseases.



## Company Facts



**2,000**

Clients Worldwide



**5,000**

Research projects annually



**4,000,000**

Data points per year



**1,500**

Publication citations



**200**

Patent citations

## Why partner with us?

- Over 20 years of successfully delivering drug discovery and development
- Comprehensive portfolio of 2000+ assays
- Full coverage of drug efficacy testing capabilities, including biochemical, biophysical, cellular, and in vivo models, ensuring data consistency
- Dedicated scientific program manager oversees all discovery phases, timelines, and expectations
- Scientific leaders are available for direct consultation
- Capable of taking on small, medium, and large projects with consistent quality and attention to detail

# Panel Screening Services



Reaction Biology offers several screening services that customers can access on a regular basis. Using these services can provide substantial cost savings and faster results. Please contact us to schedule your test compounds.

## Kinase Panel Screening: Biweekly and Monthly

Access the largest kinase profiling panel in the industry, covering most of the human kinome.

- Kinase selectivity profiling is performed on a bi-weekly (HotSpot™) or monthly (<sup>33</sup>PanQinase™) schedule
- Reaction Biology's kinase assays were ranked highest in the Kinase Profiling Trends Survey by HTStec

### Bi-weekly HotSpot Assay Panels (US)

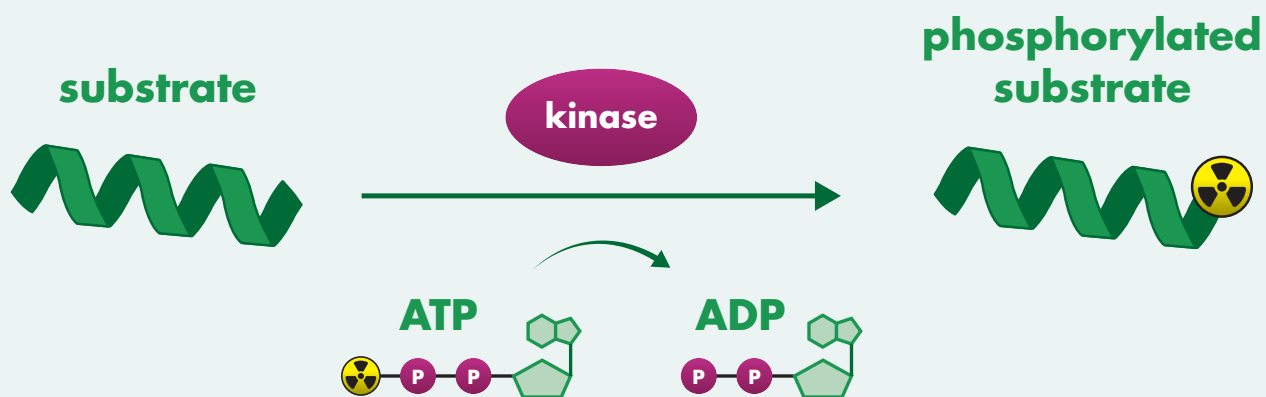
- Wild Type Kinase (379 targets)
- Mutant Kinase (354 targets)
- Tyrosine Kinase (79 targets)
- Diversify (70 targets)
- Lipid Kinase (26 targets)
- Atypical Kinase (24 targets)
- Diacylglycerol Kinase (10 targets)

### Monthly <sup>33</sup>PanQinase Assay Panels (Germany)

- Wild Type Kinase (368 targets)
- Mutant Kinase (96 targets)
- Diversify (70 targets)
- Lipid Kinase (18 targets)

Specialty kinase panels are also available on-demand.

## HotSpot™ and <sup>33</sup>PanQinase™: two radiometric assay formats



Reaction Biology offers two radiometric assay formats that are performed in our screening facilities located in Malvern, PA, USA and Freiburg, Germany. Both assays are based on the transfer of <sup>33</sup>P-labelled phosphate from ATP to the kinase substrate.

## Additional Monthly Screening Panels

### Protease Panel – 90+ targets

Fluorescence-based enzymatic activity assay

### Bromodomain Panel – 120+ targets

AlphaScreen, Thermal Shift and HTRF based assay formats

### KRAS Mutant NEA Panel

HTRF based Nucleotide Exchange Assay

### NanoBRET Intracellular CDK Panel - 20 targets

NanoBRET TE Intracellular Kinase Assay

### Methyltransferase Panel – 40+ targets

Radiometric HotSpot™ format

### Phosphodiesterase (PDE) Panel

Transcreeper AMP2/GMP2 FP assay platform

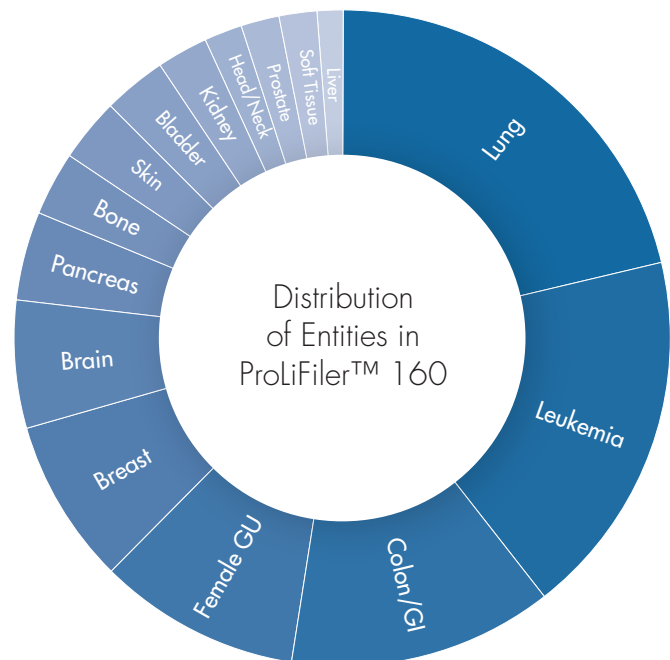
### Histone Deacetylase (HDAC) Panel

Zn<sup>2+</sup>-dependent fluorescent-based assay

## ProLiFiler™ 160 Cancer Cell Panel Screening: Monthly

Test the therapeutic efficacy of compounds on a panel of 160 human cancer cell lines across 15 tumor types.

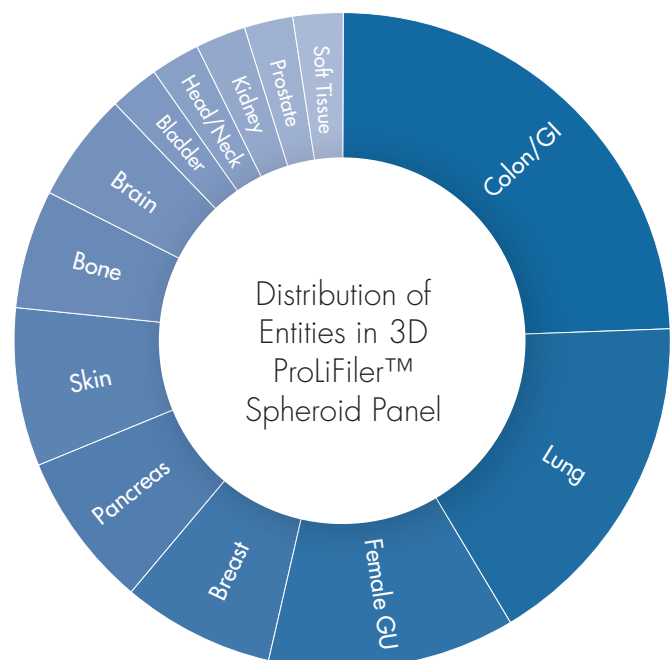
- Fast turnaround time: results in 5 to 6 weeks
- Semi-automated processing for highly reproducible data
- Single drug or combination drug testing
- Option for in-depth bioinformatics analysis



## 3D ProLiFiler™ Spheroid Cancer Cell Panel Screening: Monthly

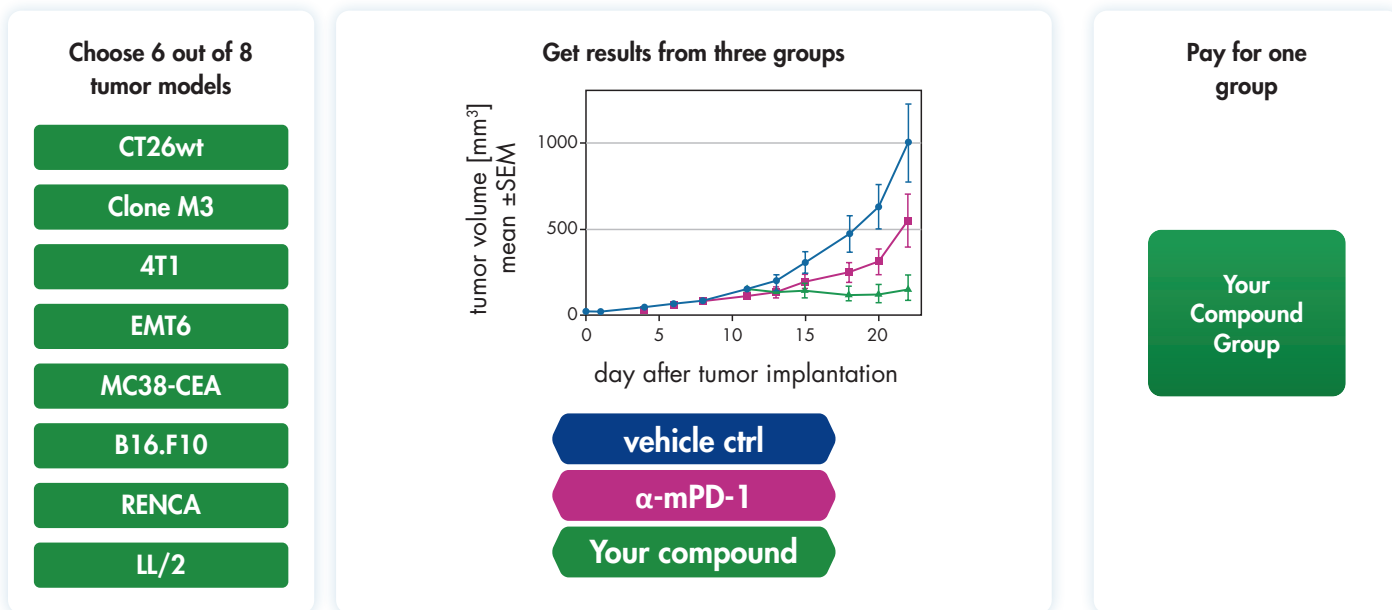
Analyze the therapeutic potency and tumor-penetrating efficacy of new anti-cancer compounds on 3D spheroids grown from a panel of 40 distinctive human cell lines derived from 13 tumor entities.

- 3D spheroids reflect the tumor microenvironment by modeling 3D cell-cell attachment, interaction, and cell-ECM interactions
- A more physiologically relevant model that mimics in vivo tumor biology, signaling cascades, and tumor progression with reproducible gradients of oxygenation, nutrition, and pH



## SubQperior™ Tumor Model Screening: Quarterly

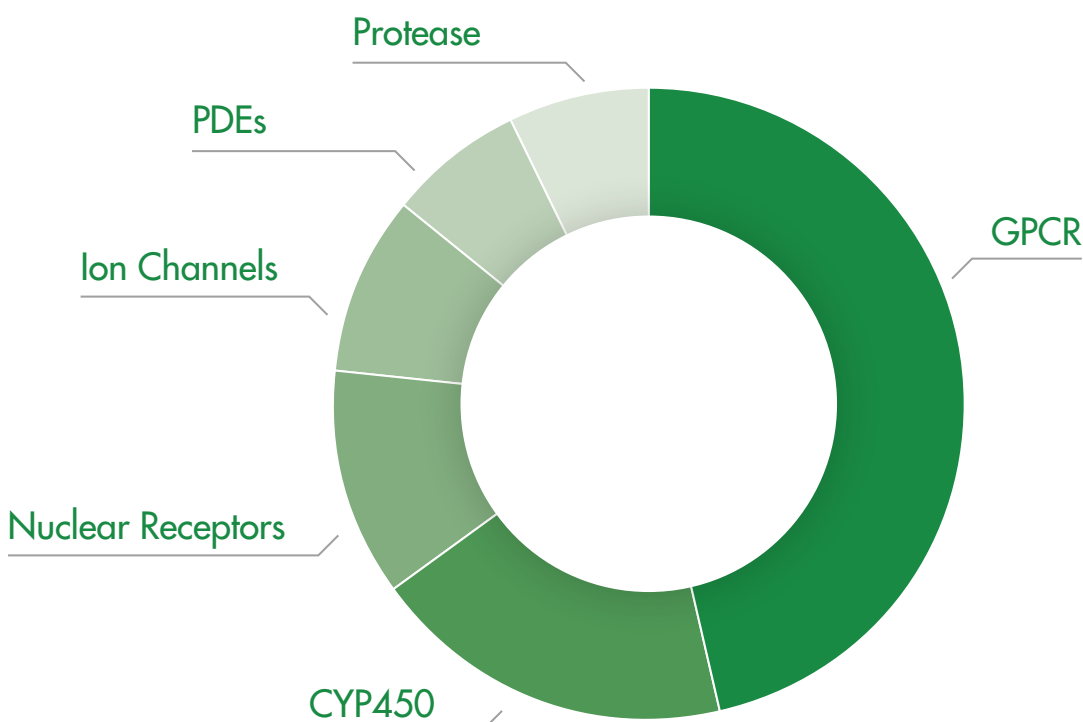
Screen new test candidates on a panel of syngeneic tumor models for fast and economic efficacy testing of immune-modulating drugs, either as a single treatment or in combination with immune-checkpoint inhibitors.



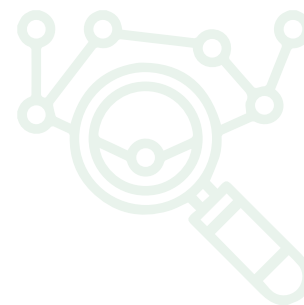
## InVEST44 Safety Panel Screening: Monthly

The InVEST44 panel covers a well-published set of 44 targets spanning core biological systems and secondary organs, enabling identification of common off-target interactions for a comprehensive early assessment of a drug candidate's safety.

- Ten-day turnaround time from a US-based facility
- Targets 44 critical molecular sites, including (24) GPCRs, (7) ion channels, (8) enzymes, (3) transporters, and (2) nuclear receptors
- Monthly panel runs supported by a world-class client service and scheduling team
- Multiple concentrations and assay formats, plus individual targets on-demand



# Assay Services Guide



Reaction Biology was created to provide outstanding drug discovery services to our customers. With a second research location in Germany, a global business development team and collaborators across multiple countries, we are a leading CRO worldwide. Assays are performed in our facilities in Malvern and Hershey, PA, USA or in Freiburg, Germany.

## Biochemical Assays

Kinase Activity Assays	
HotSpot™ Kinase Assay	The gold standard radiometric filter binding assay to measure kinase enzyme activity. The assay is based on the transfer of <sup>33</sup> P-labelled phosphate from ATP to the kinase substrate. Proteins and peptides are captured via spotting of the reaction mix on a filter membrane, which allows use of natural substrates or even protein complexes in our assays. No artificial modification of the substrates is necessary. Assays can be run using physiologically relevant concentrations of ATP (1 mM), in addition to 1 μM, 10 μM, or apparent ATP-K <sub>m</sub> up to 100 μM.
<sup>33</sup> PanQinase™ Kinase Assay	This radiometric scintillation plate-based kinase assay is based on the transfer of <sup>33</sup> P-labelled phosphate from ATP to the kinase substrate. Proteins and peptides bind to the surface of ScintiPlate-96 plates, which allows use of natural substrates in our assays. No artificial modification of the substrates is necessary.
ADP-Glo Kinase Assay	The assay measures ADP formed from a kinase reaction. The ADP is converted into ATP after remaining ATP is depleted. This ATP is used to generate light in a luciferase reaction. The luminescence generated correlates with kinase activity. ADP-Glo assay is excellent for validating in-house data and expanding upon initial findings to include a broader range of kinase targets, with over 200 kinases currently available for screening.
KinaseFinder	The KinaseFinder is a standardized service package for identifying protein kinases that can phosphorylate a peptide or protein of interest. Option to follow up with SDS-PAGE and autoradiogram to visualize the phosphorylated substrate.
Kinase SubstrateFinder	The Kinase SubstrateFinder comprises 5 variants of standardized service packages for the identification of proteins or peptides which can serve as a substrate in biochemical activity assays for a certain protein kinase provided by the customer.
Enzyme Activity Assays	
Fluorescence-based Assays	These assays are based on a substrate that fluoresces after interaction with a given enzyme. Substrates vary and are available for many enzymes including proteasomes, proteases, and phosphatases.
Methyltransferase Assay in HotSpot™	Methyltransferases use tritium-labeled S-adenosyl-L-methionine (SAM) as the methyl donor that is converted to S-adenosyl-L-homocysteine (SAH) during the transfer of the radioactive methyl group to the substrate. HotSpot format can use natural substrates or even nucleosomes without artificial modifications.
HAT (Histone acetyltransferases) Assay in HotSpot™	Histone acetyltransferases acetylate lysines on histones and other proteins using tritium-labeled acetyl-Coenzyme A as the acetyl donor. The tritium-acetyl group is transferred onto the histone substrate that is measured directly to reflect the enzyme activity.
Demethylase Assay	The demethylase LSD1 activity is detected by coupling the enzyme assay with Amplex Red reagent, a fluorogenic substrate, for quantification of the activity of enzymes that produce peroxide. Other KDMs activities are detected by antibody-based HTRF assays.
HDAC and SIRT Assay	This is a single-reagent-addition, homogeneous, fluorescence assay that measures the relative activity of histone deacetylase (HDAC) class I and II enzymes. HDAC10 activity measures polyamine deacetylase activity.

Protease Assay	Each protease assay is optimized in a different buffer and different fluorescence substrate. Upon cleavage of substrate, fluorescence increases, and enzyme activity is measured over time.
Kinesin ATPase Assay	In the presence of stabilized microtubules, kinesin enzyme activity utilizes ATP, producing ADP and Pi. ADP formation is quantified to measure kinesin enzymatic activity via ADP Glo™ detection system.
Phosphatase Assay	Fluorescence substrate, DiFMUP, is used for all phosphatases. Upon dephosphorylation of substrate, fluorescence increases, and enzyme activity is measured over time.
Deubiquitination (DUB) Assay	DUB assay uses fluorescently labeled ubiquitin as a substrate. After cleavage by a deubiquitinase, AMC/R-110 is released and fluorescence increases. The 20S Proteasome Activity Assay measures the chymotrypsin-like activity by cleaving the fluorescent substrate Suc-LLVY-AMC.
Isocitrate Dehydrogenase (IDH) Assay	Depending on the mutation status IDH either produces or consumes NADPH. Quantifying the amount of NADPH is therefore a readout for enzyme activity. Diaphorase utilizes NADPH to convert the dye resazurin to resorufin, a molecule that fluoresces at 580 nm.
CYP450 Assay	CYP450 enzyme activity assays are performed with baculosome expressed CYPs and CYP-specific fluorescence substrates. The cleavage of the fluorogenic substrate results in a fluorescent metabolite.
PARP Assay	NAD <sup>+</sup> /NADH-Glo™ detection system is used for PARP enzymatic activity assays. This bioluminescent, homogeneous, single-reagent-addition assay rapidly detects NAD <sup>+</sup> and NADH levels in enzymatic reactions.
Phosphodiesterase (PDE) Assay	The activity of PDEs is measured with the Transcreeper AMP2/GMP2 FP PDE assay platform. The PDE assay is based on the hydrolysis of cyclic AMP and cyclic GMP. PDE converts cAMP or cGMP to AMP or GMP which displace a fluorescent tracer from an antibody selective for AMP and GMP resulting in a reduction of the fluorescence polarization signal.
<b>Protein-Protein Interactions</b>	
LinkLight™ Protein Interaction Analysis Services	LinkLight is a functional, cell-based platform delivering ultra-sensitive, highly-specific detection of protein-protein interactions. Traditional assays often miss transient interactions, but LinkLight assays capture physiologically relevant signals instantly, without relying on transcription. Built on TEV/luciferase cleavage, it's ideal for studying GPCR and β-arrestin/14-3-3 pathways, while offering the specificity, sensitivity, and scalability you need.
Bromodomain Reader Assay	This peptide displacement assay in AlphaScreen or HTRF (Homogeneous Time-Resolved Fluorescence) format is homogeneous and high-throughput compatible. Bromo Melt kit for TSA detection can be purchased and TSA services are available.
RAS Related Assay	The nucleotide exchange assay monitors SOS1/2 mediated exchange of GDP to GTP. The main application of the assay is to identify compounds that lock K-Ras in inactive "OFF" state by preventing GTP exchange. The Raf1 Protein-Protein Interaction assay uses the HTRF assay format to measure the binding of K-Ras and Raf1. The SOS1 Protein-Protein Interaction assay uses the HTRF assay format to measure the binding of K-Ras and SOS1.
PROTAC Protein Degradation Assay	Proteolysis-targeting chimeras (PROTAC) are in a class of molecules that induce protein degradation of a specific disease-causing protein by the cell's ubiquitin-proteasome pathway. A PROTAC molecule consists of three parts – the target binding head, an E3 ligase interacting part, and the connecting linker. The PROTAC draws the target into a ternary complex with the ubiquitination complex tagging the target for degradation via proteasomes.
BCL, IAP Assay	Peptide displacement assays in HTRF or FP (Fluorescence Polarization) format.

Protein Detection and Quantification	
AlphaLISA and AlphaScreen Phosphorylation Assay	These homogenous, high-throughput assays for the detection of protein-protein interactions or protein modifications such as phosphorylation do not require wash steps, making them a fast and reproducible method.
ELISA (Enzyme-linked Immunosorbent Assay)	High-throughput method to quantify proteins in cells or other biological samples, including liquids. The protein of interest is detected with specific antibodies and quantified with high accuracy.
Western Blot	Detection of proteins in biological samples based on specific antibodies and the molecular size of the protein. Our Western Blot Service provides qualitative and quantitative means to investigate the modulation of protein expression or post-translational modifications.

## Biophysical Assays

Isothermal Titration Calorimetry (ITC)	ITC is a solution-based assay that measures the heat released or absorbed as the result of a chemical reaction.
Microscale Thermophoresis (MST)	MST assays measure the motion of molecules along microscopic temperature gradients that change upon ligand binding.
Surface Plasmon Resonance (SPR)	SPR is a highly sensitive technique for analysis of the interactions of two biomolecules with respect to binding kinetics and affinity as well as binding specificity.
Thermal Shift Assay (TSA)	Thermal shift assays utilize differential scanning fluorimetry (DSF) to measure the thermal stability of a target protein and the increase in protein melting temperature upon the binding of a stabilizing agent. It is useful for identifying ligands, buffer conditions, and cofactors affecting protein stability.

## Cell-based Assays

Target Engagement Assay	
NanoBRET™ Target Engagement Assay	This assay measures the binding of a compound to the target protein in intact, living cells, allowing assessment of target occupancy, binding affinity, and kinetics (residence time).
Cellular Phosphorylation Assay (CPA)	
Cellular Phosphorylation Assay (CPA)	The CPA assay quantifies changes in the phosphorylation status of a substrate as a result of treatment with an inhibitor in intact cells. The assay was designed to address compound activity in a physiological environment on a physiological substrate.
BaF3 Cell Proliferation Assay	This assay is based on BaF3 cells, a pro-B-cell line that is dependent on interleukin 3 for its survival and proliferation. Transgenic overexpression of oncogenic kinases can transform the cell line to become independent of interleukin 3 but dependent on the kinase signaling.

Cell Proliferation	
ProLiFiler™ 160 Cancer Cell Panel Screening	Cell line panel screening based on CellTiter-Glo® (Promega) provides efficacy data for 160 human tumor cell lines from across 15 tumor types. The screening is performed with established cell lines to guarantee robust and reproducible results.
3D ProLiFiler™ Spheroid Cancer Cell Panel Screening Service	This screening service allows scientists to analyze the therapeutic potency and tumor-penetrating efficacy of new anti-cancer compounds on 3D spheroids grown from a panel of 40 distinctive cell lines derived from 13 tumor entities. This service provides an efficient way to check for compound efficacy in a more physiologically relevant model that mimics in vivo tumor biology, signaling cascades, and tumor progression with reproducible gradients of oxygenation, nutrition, and pH. This assay is also customizable with fewer cell lines.
Standard 2D Assays	We provide a comprehensive suite of straight-forward cell proliferation, viability, and cytotoxicity assays as well as apoptosis and necrosis assays based on proven assay chemistries and read-outs. Live cell imaging using the InCuCyte instrument is also available. Please enquire about details.
Soft Agar Assay	Also called a Colony Formation or Clonogenic Assay, it allows screening of the therapeutic efficacy of drugs against anchorage-independent cell growth in soft agar. This assay is used to test the impact of drugs on the proliferation of single cells growing into colonies.
3D Angiogenesis Assay	
	This in vitro vessel sprouting assay mimics in vivo conditions with respect to the first stages of the angiogenic cascade. Endothelial cells aggregate to form spheroids in a hanging drop system. The spheroids are pipetted into multi-well plates in a collagen matrix where the test compounds and stimulation factors are added. During a 24-hour period, vessels sprout from the spheroids and are quantified by measuring their length to determine the cumulative sprout length.
Nuclear Receptor Assay	
	Luciferase reporter assays measure the activity of the nuclear receptors on expression of the target gene. Useful in testing a variety of drugs including modulators of translocation, activity, structural changes, and dimerization.
Cell Migration	
	In both the ORIS and Wound Healing (Scratch) Assay, cell migration into an open space mimics a portion of the metastatic cascade and can be targeted by therapeutic intervention.
Flow Cytometry Assays	
	Flow cytometry assays can be conducted with cultured cell lines, primary cells, tissues, or immune cells isolated from whole blood with single-plex or multi-plex capacity (up to 20 markers). Further analysis of sorted cells via qPCR, immunofluorescence, and other readouts and custom assay development are also available.

## Safety & Toxicology Assays

InVEST™ Safety Services	Screen your compounds in biochemical and functional assays against over 100 targets known to be involved in human toxicity, including our industry standard InVEST44 Panel.
Patch Clamp Assays	Whole-cell patch clamp technique involves briefly applying large suction to a part of the cell membrane to cause disruption and a closed gigaohm seal to allow the cytosol to be one sphere with the intracellular buffer chamber. Currents from the ion flux of the entire cell are measured via electrodes.
Radioligand Filter Binding Assay	<sup>3</sup> H-labelled ligands incubate with the membrane preparations in the presence and absence of test compounds in multi-well plates. The solution is pulled through a filter trapping the membranes and bound ligands. The radioactivity in the filter is measured to quantify ligand-target receptor binding.
Vivid CYP450 Fluorescence Assay (ThermoFisher)	CYP450 enzyme activity assays are performed with baculosome expressed CYPs and CYP-specific fluorescence substrates. The cleavage of the fluorogenic substrate results in a fluorescent metabolite.

## In Vivo Models

Cell Line-derived Xenograft Models	
Orthotopic	Tumors of orthotopic models grow in the organ of origin in their natural tumor environment. The interaction with stromal cells as well as tissue-specific immune cells allows tumor growth similar to that of the original tumor and makes orthotopic tumor models extremely relevant for drug testing.
Subcutaneous	Subcutaneous tumor models are an efficient and cost-effective choice for the determination of the response of tumors to a new drug. The tumor cells are implanted into the flank of mice, and tumor growth is monitored by caliper, which enables the evaluation of anti-cancer therapies in vivo.
Additional In Vivo Models	
CAR Tcell Therapy	Evaluate the potency and pharmacokinetics of CAR T candidates within in vivo models of cancer biology and assess the in vitro cytotoxicity across established cancer cell lines.
Hollow Fiber	This model is a drug screening assay based on growing three tumor cell lines in a single mouse. The Hollow Fiber model bridges the gap between in vitro and in vivo testing of anti-cancer agents to allow rapid answers regarding drug efficacy.
Humanized Mouse Models	We offer two types of humanized models. (1) Humanized Xenograft Models which recapitulate the interplay between the tumor and the immune system occurring in patients by engrafting human tumor bearing murine hosts with human peripheral blood mononuclear cells (PBMC), T cells or NK cells. (2) Humanized Syngeneic Models which enable rapid testing of human target-specific immunotherapy drug candidates by providing genetically engineered human targets in a fully immunocompetent host.
Mouse-Derived Isograft Tumor (MDI) Models	Our proprietary mouse-derived isograft tumor models (MDI) allow drug efficacy testing in a setting that recapitulates the original tumor very closely. Tumor tissue is isolated from mice with cancer, and the tissue is engrafted for propagation into other mice of the same background (tumor homograft). Mouse isograft models enable the investigation of interactions between cells, stroma, and the tumor environment during cancer progression.
SubQperior™	Syngeneic SubQperior™ mouse models are based on mammary fat pad injection of tumor cells to overcome frequent challenges caused by tumor ulceration upon subcutaneous inoculation. This approach ensures homogenous tumor growth and thus in vivo studies with excellent statistical value.
Syngeneic Mouse Models	Syngeneic mouse models are used for efficacy testing of immuno-oncology drugs and the investigation of the effects of conventional anti-cancer drugs on the immune system. In a syngeneic model, the tumor tissue is obtained from a mouse of the same genetic background as the immunocompetent recipient.

# Assay List by Target



Reaction Biology offers compound screening assays for more than 1 000 targets to support the discovery of new drugs. Most of our assays are high-throughput compatible and can be customized to your specific requirements. We also offer custom assay development services. See page 61 for more details.

We offer over 800 different targets in the protein kinase family as well as targets across 40+ additional protein families.

Protein Families			
Acetyl-CoA Carboxylase Apoptosis-related Biogenic Amine Transporter Bromodomain Epigenetics-related Cholinesterase Chromate Transporter (CHR) Cyclooxygenase CYP450 GPCR	HDAC Heat Shock Histone Acetyltransferase (HAT) Histone Demethylase Immune Checkpoint-related Ion Channel Isocitrate Dehydrogenase (IDH) Kinesin Lipase Lipid Kinase	MBT Methyltransferase Monoamine Oxidase NAD(P)H dehydrogenase quinone Nuclear Receptor Nucleotide Metabolism Nucleotidyltransferase PARP Peptidyl Arginine Deiminase PHD	Phosphatase Phosphodiesterase Protease Protein Kinase Ras Pathway Replication-related Sirtuin SRA TDR Ubiquitin-proteasome WDR

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
20S Proteasome	Ubiquitin-proteasome	Fluorescence-based		
A20	Ubiquitin-proteasome	Fluorescence-based		
AAK1	Protein kinase	Probe-displacement	NanoBRET	
ABL1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ABL1 (E255K)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ABL1 (E255V)	Protein kinase	HotSpot™		
ABL1 (F317I)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ABL1 (F317L)	Protein kinase	HotSpot™	NanoBRET	
ABL1 (G250E)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ABL1 (H396P)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ABL1 (M351T)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ABL1 (Q252H)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ABL1 (T315I)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ABL1 (V299L)	Protein kinase	HotSpot™		
ABL1 (Y245F)	Protein kinase	HotSpot™		
ABL1 (Y245F/Y412F)	Protein kinase	HotSpot™		
ABL1 (Y253F)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ABL1 (Y253H)	Protein kinase	HotSpot™		
ABL2/ARG	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ACC1	Acetyl-CoA Carboxylase	ADP-Glo		
ACC2	Acetyl-CoA Carboxylase	ADP-Glo		
ACE1	Protease	InVEST		
ACE2	Protease	Fluorescence-based; SPR		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
Acetylcholinesterase	Cholinesterase	InVEST		
ACK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ACKR3	GPCR	LinkLight™		
Activated Protein C	Protease	Fluorescence-based		
ACVR1	Protein kinase	ADP-Glo		
ACVR1 (G328V)	Protein kinase		NanoBRET	
ACVR1 (G356D)	Protein kinase		NanoBRET	
ACVR2A	Protein kinase	<sup>33</sup> PanQinase™		
ACVR2B	Protein kinase	<sup>33</sup> PanQinase™		
ADAM10	Protease	Fluorescence-based		
ADAMTS4	Protease	Fluorescence-based		
ADAMTS5	Protease	Fluorescence-based		
Adenosine A1	GPCR	InVEST; LinkLight™		
Adenosine A2A	GPCR	InVEST; LinkLight™		
Adenosine A2B	GPCR	LinkLight™		
Adenosine A3	GPCR	LinkLight™		
ADK	Protein kinase		NanoBRET	
Adrenergic α1A	GPCR	InVEST; LinkLight™	InVEST - Agonist/ Antagonist	
Adrenergic α2A	GPCR	InVEST; LinkLight™		
Adrenergic β1A	GPCR	InVEST		
Adrenergic β2A	GPCR	InVEST; LinkLight™		
Adrenoceptor beta 3	GPCR	LinkLight™		
AKT1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
AKT1 (E17K)	Protein kinase	HotSpot™	NanoBRET	
AKT1 aa106-480	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
AKT2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™ ; ADP-Glo	NanoBRET	Yes
AKT2 (E17K)	Protein kinase	HotSpot™	NanoBRET	
AKT2 aa107-481	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
AKT3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
AKT3 (E17K)	Protein kinase	HotSpot™	NanoBRET	
AKT3 (G171R)	Protein kinase	HotSpot™	NanoBRET	
AKT3 aa106-479	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
ALK (C1156Y)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK (F1174L)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK (F1174L)-EML4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK (F1174L)-NPM1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK (F1174S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK (G1202R)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK (G1269A)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
ALK (G1269S)	Protein kinase	HotSpot™		
ALK (I1171N/ D1203N)	Protein kinase	HotSpot™		
ALK (L1152R)	Protein kinase	HotSpot™		
ALK (L1196M)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK (L1196M/ G1202R)	Protein kinase	HotSpot™		
ALK (R1275Q)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK (S1206R)	Protein kinase	HotSpot™		
ALK (T1151-L1152insT)	Protein kinase	HotSpot™		
ALK (T1151M)	Protein kinase	HotSpot™		
ALK1/ACVRL1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
ALK2 (Q207D)	Protein kinase	HotSpot™	NanoBRET	
ALK2 (R206H)	Protein kinase	HotSpot™	NanoBRET	
ALK2/ACVR1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	Yes
ALK3/BMPRI1A	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	Yes
ALK4/ACVR1B	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
ALK5/TGFBR1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK6/BMPRI1B	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		Yes
ALK-EML4	Protein kinase	ADP-Glo		
ALK-EML4 (Eex13Aex20)	Protein kinase	HotSpot™		
ALK-EML4 (Eex14Aex20)	Protein kinase	HotSpot™		
ALK-EML4 (Eex20Aex20)	Protein kinase	HotSpot™		
ALK-EML4 (Eex6Aex20)	Protein kinase	HotSpot™		
ALK-KIF5B (Kex24Aex20)	Protein kinase	HotSpot™		
ALK-KLC1 (Kex8Aex20)	Protein kinase	HotSpot™		
ALK-NPM1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ALK-STRN (Sex3Aex20)	Protein kinase	HotSpot™		
ALK-TFG	Protein kinase	HotSpot™		
ALK-TFG (Tex4Aex20)	Protein kinase	HotSpot™		
ALK-TPM1	Protein kinase	HotSpot™		
ALK-TPM3	Protein kinase	HotSpot™		
AMPK (A1/B1/G1)	Protein kinase	HotSpot™		
AMPK (A1/B1/G2)	Protein kinase	HotSpot™		
AMPK (A1/B1/G3)	Protein kinase	HotSpot™		
AMPK (A1/B2/G1)	Protein kinase	HotSpot™		
AMPK (A1/B2/G2)	Protein kinase	HotSpot™		
AMPK (A1/B2/G3)	Protein kinase	HotSpot™		
AMPK (A2/B1/G1)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
AMPK (A2/B1/G2)	Protein kinase	HotSpot™		
AMPK (A2/B1/G3)	Protein kinase	HotSpot™		
AMPK (A2/B2/G1)	Protein kinase	HotSpot™		
AMPK (A2/B2/G2)	Protein kinase	HotSpot™		
AMPK (A2/B2/G3)	Protein kinase	HotSpot™		
AMPKalpha1	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
AMPKalpha1 aa1-312	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
Androgen	Nuclear Receptor	Luciferase Reporter	InVEST - Agonist/ Antagonist	
APLNR	GPCR	apelin receptor		
ARAF	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		Yes
ARAF YDYD	Protein kinase	ADP-Glo		
ARH3	PARP	Fluorescence-based		Yes
ARK5/NUAK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ASH1L	Methyltransferase	Radiometric HotSpot™		Yes
ASH1L-[BRD]-GST	Bromodomain	ThermoShift		Yes
ASK1/MAP3K5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
ASK2	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		
αSMA			Flow Cytometry	
ATAD2B-GST	Bromodomain	ThermoShift		Yes
ATAD2B-His	Bromodomain	ThermoShift; AlphaScreen		Yes
ATAD2-His	Bromodomain	ThermoShift; AlphaScreen		Yes
Ataxin 3	Ubiquitin-proteasome	Fluorescence-based		
ATM	Protein kinase	HTRF; InVEST	CPA	
ATR	Protein kinase	HTRF		
Aurora A	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET	Yes
Aurora B	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET; CPA	Yes
Aurora B (G160L)	Protein kinase	HotSpot™		
Aurora C	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
AVPR2	GPCR	LinkLight™		
AXL	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
AXL (R499C)	Protein kinase	HotSpot™		
BACE1	Protease	Fluorescence-based		
BAP1	Ubiquitin-proteasome	Fluorescence-based		
BAZ1A-GST	Bromodomain	ThermoShift		Yes
BAZ1B-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BAZ2A-GST	Bromodomain	ThermoShift		Yes
BAZ2A-His	Bromodomain	AlphaScreen		Yes
BAZ2B-His	Bromodomain	ThermoShift; AlphaScreen		Yes
B-cell lymphoma-2	Apoptosis-related pathway	HTRF; SPR		Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
Bcl-2-like protein 2	Phosphatase	SPR		
BCL-xL	Apoptosis-related pathway	HTRF; SPR		Yes
BCR-ABL	Protein kinase	NanoBRET		
BDKRB1	GPCR	LinkLight™		
BDKRB2	GPCR	LinkLight™		
BLK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
BMP2K	Protein kinase		NanoBRET	
BMPR1A	Protein kinase	ADP-Glo		
BMPR1B	Protein kinase	ADP-Glo		
BMPR2	Protein kinase	HotSpot™; ADP-Glo; Probe-displacement		
BMX/ETK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
BPTF-[BRD]-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BPTF-[PHD-BRD]-His	Bromodomain; PHD	AlphaScreen; ThermoShift		Yes
BRAF	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
BRAF (d485-489/ P490Y)	Protein kinase	HotSpot™		
BRAF (G464V)	Protein kinase	HotSpot™		
BRAF (G469A)	Protein kinase	HotSpot™		
BRAF (K601E)	Protein kinase	HotSpot™		
BRAF (L597V)	Protein kinase	HotSpot™		
BRAF (R506_ K507insVLR)	Protein kinase	HotSpot™		
BRAF (T599_V600insT)	Protein kinase	HotSpot™		
BRAF (V599E)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET; CPA	Yes
BRAF (V600A)	Protein kinase	HotSpot™		
BRAF (V600D)	Protein kinase	HotSpot™		
BRAF (V600E)	Protein kinase	ADP-Glo		
BRAF (V600K)	Protein kinase	HotSpot™		
BRAF-FAM131B	Protein kinase	HotSpot™		
BRAF-KIAA1549 (Kex15Bex9)	Protein kinase	HotSpot™		
BRAF-KIAA1549 (Kex16Bex9)	Protein kinase	HotSpot™		
BRAF-SRGAP3 (Sex12Bex9)	Protein kinase	HotSpot™		
BRD1-GST	Bromodomain	ThermoShift		Yes
BRD1-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD2	Bromodomain		NanoBRET TE	
BRD2-1	Bromodomain	SPR;	NanoBRET TE	
BRD2-1-GST	Bromodomain	ThermoShift		Yes
BRD2-1-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD2-2	Bromodomain	NanoBRET; SPR	NanoBRET TE	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
BRD2-2-GST	Bromodomain	ThermoShift		Yes
BRD2-2-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD2-Tndm-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD3	Bromodomain		NanoBRET TE	Yes
BRD3-1	Bromodomain	SPR		
BRD3-1-GST	Bromodomain	ThermoShift		Yes
BRD3-1-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD3-2	Bromodomain	SPR		
BRD3-2-GST	Bromodomain	ThermoShift		Yes
BRD3-2-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD3-Tndm-GST	Bromodomain	ThermoShift		Yes
BRD3-Tndm-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD4	Bromodomain	PROTAC; InVEST	NanoBRET TE; NanoBRET Bromodomain Histone Interaction	
BRD4 Full length	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD4 Ternary Complex	Bromodomain		NanoBRET Ternary Complex Formation	
BRD4-1	Bromodomain	SPR	NanoBRET TE	Yes
BRD4-1-GST	Bromodomain	ThermoShift		Yes
BRD4-1-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD4-2	Bromodomain	SPR	NanoBRET TE	
BRD4-2-GST	Bromodomain	ThermoShift		Yes
BRD4-2-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD4-Tndm-GST	Bromodomain	ThermoShift		Yes
BRD4-Tndm-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRD7-GST	Bromodomain	ThermoShift		Yes
BRD9-GST	Bromodomain	ThermoShift		Yes
BRD9-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRDT	Bromodomain	SPR	NanoBRET TE	Yes
BRDT-1-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRDT-2-His	Bromodomain	ThermoShift		Yes
BRDT-Tndm-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
BRPF1a	Bromodomain	ThermoShift		Yes
BRPF1b-GST	Bromodomain	ThermoShift		Yes
BRPF1b-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRPF3-GST	Bromodomain	ThermoShift		Yes
BRPF3-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRSK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
BRSK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
BRWD1-2-GST	Bromodomain	ThermoShift		Yes
BRWD1-2-His	Bromodomain	ThermoShift; AlphaScreen		Yes
BRWD3-2-GST	Bromodomain	ThermoShift		Yes
BTK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; NanoBRET RT	Yes
BTK (C481S)	Protein kinase	HotSpot™	NanoBRET	
BTK (E41K)	Protein kinase	HotSpot™	NanoBRET	
BTK (P190K)	Protein kinase	HotSpot™	NanoBRET	
BTK (T474I)	Protein kinase	HotSpot™		
BTK (Y485F)	Protein kinase	HotSpot™		
BUB1B	Protein kinase	<sup>33</sup> PanQinase™		
C5AR1	GPCR	LinkLight™		
Calpain1	Protease	Fluorescence-based		
CAMK1a	Protein kinase	HotSpot™	NanoBRET	
CAMK1b	Protein kinase	HotSpot™		
CAMK1d	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CAMK1g	Protein kinase	HotSpot™	NanoBRET	
CAMK2a	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CAMK2b	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
CAMK2d	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CAMK2g	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CAMK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
CAMKK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
CAMKK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
Cannabinoid CB1	GPCR	InVEST; LinkLight™	InVEST - Agonist/ Antagonist	
Cannabinoid CB2	GPCR	InVEST; LinkLight™		
CASK	Protein kinase	Probe-displacement		
Caspase 1	Protease	Fluorescence-based		
Caspase 10	Protease	Fluorescence-based		
Caspase 11	Protease	Fluorescence-based		
Caspase 14	Protease	Fluorescence-based		
Caspase 2	Protease	Fluorescence-based		
Caspase 3	Protease	Fluorescence-based		
Caspase 4	Protease	Fluorescence-based		
Caspase 5	Protease	Fluorescence-based		
Caspase 6	Protease	Fluorescence-based		
Caspase 7	Protease	Fluorescence-based		
Caspase 8	Protease	Fluorescence-based		
Caspase 9	Protease	Fluorescence-based		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
Cathepsin B	Protease	Fluorescence-based		
Cathepsin C	Protease	Fluorescence-based		
Cathepsin D	Protease	Fluorescence-based; InVEST		
Cathepsin E	Protease	Fluorescence-based		
Cathepsin G	Protease	InVEST		
Cathepsin H	Protease	Fluorescence-based		
Cathepsin K	Protease	Fluorescence-based		
Cathepsin L	Protease	Fluorescence-based		
Cathepsin S	Protease	Fluorescence-based		
Cathepsin V	Protease	Fluorescence-based		
Cathepsin Z	Protease	Fluorescence-based		
Cav1.2	Ion Channel		Patch Clamp; InVEST - Agonist/Antagonist	
CBP	Histone Acetyltransferase	Radiometric HAT; SPR	NanoBRET Bromodomain Histone Interaction	
CBP-His	Bromodomain	AlphaScreen		
CBX7-[CHR]-GST	CHR	ThermoShift		Yes
CCKAR	GPCR	LinkLight™		
CCKBR	GPCR	LinkLight™		
CCR2			Flow Cytometry	
CCR6	GPCR	LinkLight™		
CD101			Flow Cytometry	
CD103			Flow Cytometry	
CD107a			Flow Cytometry	
CD115			Flow Cytometry	
CD11b			Flow Cytometry	
CD11c			Flow Cytometry	
CD127			Flow Cytometry	
CD135			Flow Cytometry	
CD137			Flow Cytometry	
CD14			Flow Cytometry	
CD140a			Flow Cytometry	
CD140b			Flow Cytometry	
CD152 (CTLA-4)			Flow Cytometry	
CD163			Flow Cytometry	
CD184			Flow Cytometry	
CD19			Flow Cytometry	
CD206			Flow Cytometry	
CD21/CD35			Flow Cytometry	
CD223 (LAG3)			Flow Cytometry	
CD24			Flow Cytometry	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
CD25			Flow Cytometry	
CD274 (PDL-1)			Flow Cytometry	
CD278 (ICOS)			Flow Cytometry	
CD279 (PD-1)			Flow Cytometry	
CD3			Flow Cytometry	
CD31			Flow Cytometry	
CD317			Flow Cytometry	
CD326 (epCAM)			Flow Cytometry	
CD335			Flow Cytometry	
CD4			Flow Cytometry	
CD40			Flow Cytometry	
CD40L			Flow Cytometry	
CD44			Flow Cytometry	
CD45			Flow Cytometry	
CD49b			Flow Cytometry	
CD62L			Flow Cytometry	
CD64			Flow Cytometry	
CD69			Flow Cytometry	
CD73			Flow Cytometry	
CD8			Flow Cytometry	
CD80			Flow Cytometry	
CD86			Flow Cytometry	
CDC7/DBF4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CDg1-[CHR]-GST	CHR	ThermoShift		Yes
CDK1/cyclin A	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		Yes
CDK1/cyclin A2	Protein kinase	ADP-Glo		
CDK1/cyclin B	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK1/cyclin E	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	
CDK2/cyclin A	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		Yes
CDK2/cyclin A1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CDK2/cyclin A2	Protein kinase	ADP-Glo		
CDK2/cyclin D1	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK2/cyclin E	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK2/cyclin E2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
CDK2/cyclin O	Protein kinase	HotSpot™		
CDK3/cyclin C	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK3/cyclin E	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK3/cyclin E2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
CDK4/cyclin D1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK4/cyclin D2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
CDK4/cyclin D3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK5/p25	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK5/p35	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
CDK5+CDK5R1	Protein kinase		NanoBRET	
CDK5+CDK5R2	Protein kinase		NanoBRET	
CDK6/cyclin D1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK6/cyclin D2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK6/cyclin D3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK7	Protein kinase		NanoBRET	
CDK7/cyclin H	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CDK7/cyclin H/ MNAT1	Protein kinase	HotSpot™; ADP-Glo		
CDK8/cyclin C	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK9/cyclin K	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK9/cyclin T1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK9/cyclin T2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CDK10/cyclin Q	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK10/cyclin L2	Protein kinase		NanoBRET	
CDK11A/cyclin K	Protein kinase		NanoBRET	
CDK11A/cyclin L2	Protein kinase		NanoBRET	
CDK11B/cyclinK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
CDK12 (R722C)/ cyclin K	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK12/cyclin K	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK13/cyclin K	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK14/cyclin Y (PFTK1)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	
CDK15/cyclin A2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK15/cyclin B1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK15/cyclin Y	Protein kinase		NanoBRET	
CDK16/cyclin Y	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK17/cyclin Y	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CDK17/p35NCK	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
CDK18/cyclin Y	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK19/cyclin C	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK20/cyclin H	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CDK20/cyclin T1	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
CDKL1	Protein kinase		NanoBRET	
CDKL2	Protein kinase		NanoBRET	
CDKL3	Protein kinase		NanoBRET	
CDKL5	Protein kinase		NanoBRET	
CD47-SIRPA	Immune Checkpoint	HTRF		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
CECR2-GST	Bromodomain	ThermoShift		Yes
CECR2-His	Bromodomain	AlphaScreen; ThermoShift		Yes
Cereblon CULT Domain	Ubiquitin-proteasome	Fluorescence Polarization; SPR		
Cereblon:DDB1	PROTAC	Probe-displacement; HTRF		
Cereblon (mouse)	PROTAC	Probe-displacement		
cGAS	Nucleotidyltransferase	Fluorescence Polarization; SPR		Yes
cGAS (aa 157-522)	Nucleotidyltransferase	Fluorescence Polarization; SPR		Yes
CHD1-[CHR]-GST	CHR	ThermoShift		Yes
CHD1-[CHR]-His	CHR	ThermoShift		Yes
CHD2-[CHR]-GST	CHR	ThermoShift		Yes
CHD2-[CHR]-His	CHR	ThermoShift		Yes
CHD4-[CHR]-GST	CHR	ThermoShift		Yes
CHD4-[PHD-CHR]-GST	CHR; PHD	ThermoShift		Yes
CHD7-[CHR]-GST	CHR	ThermoShift		Yes
CHK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CHK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CHK2(I157T)	Protein kinase	HotSpot™		
Cholecystokinin CCK1	GPCR	InVEST		
Cholecystokinin CCK2	GPCR	InVEST		
Chymase	Protease	Fluorescence-based		
Chymotrypsin	Protease	Fluorescence-based		
clAP-1	Apoptosis-related pathway	Fluorescence Polarization		Yes
clAP-2	Apoptosis-related pathway	Fluorescence Polarization		Yes
CIT 1-450	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
CK1a1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CK1a1 (E42C)	Protein kinase	HotSpot™		
CK1a1 (I35C)	Protein kinase	HotSpot™		
CK1a1L	Protein kinase	HotSpot™	NanoBRET	
CK1d	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CK1epsilon	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CK1epsilon (R178C)	Protein kinase	HotSpot™		
CK1g1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
CK1g2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CK1g3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
CK2a	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	Yes
CK2a1	Protein kinase	ADP-Glo		
CK2a2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
c-KIT	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET; CPA	Yes
c-KIT (A829P)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
c-KIT (d557-558)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
c-KIT (d557-558/Y823D)	Protein kinase	HotSpot™		
c-KIT (D816E)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
c-KIT (D816F)	Protein kinase	HotSpot™		
c-KIT (D816H)	Protein kinase	HotSpot™; ADP-Glo	NanoBRET	Yes
c-KIT (D816I)	Protein kinase	HotSpot™		
c-KIT (D816V)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
c-KIT (D816Y)	Protein kinase	HotSpot™		
c-KIT (D820E)	Protein kinase	HotSpot™		
c-KIT (D820Y)	Protein kinase	HotSpot™		
c-KIT (K642E)	Protein kinase	HotSpot™		
c-KIT (N822K)	Protein kinase	HotSpot™		
c-KIT (T670I)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
c-KIT (V559A)	Protein kinase	HotSpot™		
c-KIT (V559D)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
c-KIT (V559D/T670I)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
c-KIT (V559D/V654A)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
c-KIT (V560G)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
c-KIT (V560G/D816V)	Protein kinase	HotSpot™		
c-KIT (V560G/N822K)	Protein kinase	HotSpot™		
c-KIT (V654A)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
c-KIT (Y823D)	Protein kinase	HotSpot™		
CLK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
CLK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CLK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
CLK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
CLK4 (I363V)	Protein kinase	HotSpot™		
c-MER	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	Yes
c-MER (A708S)	Protein kinase	HotSpot™	NanoBRET	
c-MET	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (D1213H)	Protein kinase	HotSpot™		
c-MET (D1228A)	Protein kinase	HotSpot™		
c-MET (D1228G)	Protein kinase	HotSpot™		
c-MET (D1228H)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (D1228N)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (D1228V)	Protein kinase	HotSpot™		
c-MET (D1228Y)	Protein kinase	HotSpot™		
c-MET (DelEx14)	Protein kinase	HotSpot™		
c-MET (F1200I)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (G1163R)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
c-MET (H1094L)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
c-MET (H1094Y)	Protein kinase	HotSpot™		
c-MET (K1244R)	Protein kinase	HotSpot™		
c-MET (L1195F)	Protein kinase	HotSpot™		
c-MET (L1195V)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
c-MET (M1250I)	Protein kinase	HotSpot™		
c-MET (M1250T)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (P991S)	Protein kinase	HotSpot™	NanoBRET	
c-MET (R1227K)	Protein kinase	HotSpot™		
c-MET (R970C)	Protein kinase	HotSpot™		
c-MET (T1173I)	Protein kinase	HotSpot™	NanoBRET	
c-MET (T992I)	Protein kinase	HotSpot™	NanoBRET	
c-MET (V1092I)	Protein kinase	HotSpot™	NanoBRET	
c-MET (Y1230A)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (Y1230C)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (Y1230D)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (Y1230H)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
c-MET (Y1230S)	Protein kinase	HotSpot™		
c-MET (Y1235D)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
c-MET-KIF5B (Kex24Mex14)	Protein kinase	HotSpot™		
c-MET-TFG (Tex5Mex15)	Protein kinase	HotSpot™		
CMKLR1	GPCR	LinkLight™		
CMKLR2	GPCR	LinkLight™		
COMT	Methyltransferase	FlashPlate		Yes
COMT (V108M)	Methyltransferase	FlashPlate		Yes
COQ8B	Protein kinase		NanoBRET	
COT1/MAP3K8	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		Yes
COX-1	Cyclooxygenase	InVEST		
COX-2	Cyclooxygenase	InVEST		
CREBBP-GST	Bromodomain	ThermoShift		Yes
CREBBP-His	Bromodomain	ThermoShift; AlphaScreen		Yes
CSF1R	Protein kinase	ADP-Glo		
CSK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
c-SRC	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET; CPA	Yes
c-SRC (HIS-tag)	Protein kinase	ADP-Glo		
c-SRC (T341M)	Protein kinase	HotSpot™		
c-SRC (Y530F)	Protein kinase	HotSpot™		
c-SRC	Protein kinase	HotSpot™		
CTK/MATK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
CTLA4-CD80	Immune Checkpoint	HTRF		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
CTLA4-CD86	Immune Checkpoint	HTRF		
CX3CR1	GPCR	LinkLight™	Flow Cytometry	
Cyclophilin A		SPR		Yes
CYP19A	CYP450	Fluorescence-based; InVEST		
CYP1A2	CYP450	P450-Glo™; InVEST		
CYP2A6	CYP450	P450-Glo™; InVEST		
CYP2B6	CYP450	P450-Glo™; InVEST		
CYP2C19	CYP450	P450-Glo™; InVEST		
CYP2C8	CYP450	P450-Glo™; InVEST		
CYP2C9	CYP450	P450-Glo™; InVEST		
CYP2D6	CYP450	P450-Glo™; InVEST		
CYP2E1	CYP450	P450-Glo™; InVEST		
CYP2J2	CYP450	P450-Glo™; InVEST		
CYP3A4	CYP450	P450-Glo™; InVEST		
CYP3A5	CYP450	P450-Glo™; InVEST		
CYP4A11	CYP450	P450-Glo™; InVEST		
CYP4F3B	CYP450	P450-Glo™; InVEST		
DAPK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
DAPK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
DCAMKL1	Protein kinase	HotSpot™		
DCAMKL2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
DCAMKL3/DCLK3	Protein kinase	HotSpot™	NanoBRET	
dDHODH	Nucleotide metabolism	Fluorescence-based		
DDR1	Protein kinase	HotSpot™	NanoBRET	
DDR2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
DDR2 (N456S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
DDR2 (T654M)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
DGKA	Lipid kinase	ADP-Glo		
DGKA Mouse	Lipid kinase	ADP-Glo		
DGKA Rat	Lipid kinase	ADP-Glo		
DGKB	Lipid kinase	ADP-Glo		
DGKD	Lipid kinase	ADP-Glo		
DGKE	Lipid kinase	ADP-Glo		
DGKG	Lipid kinase	ADP-Glo		
DGKH	Lipid kinase	ADP-Glo		
DGKI	Lipid kinase	ADP-Glo		
DGKK	Lipid kinase	ADP-Glo		
DGKQ	Lipid kinase	ADP-Glo		
DGKZ	Lipid kinase	ADP-Glo		
DGKZ Mouse	Lipid kinase	ADP-Glo		
DGKZ Rat	Lipid kinase	ADP-Glo		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
DHODH	Nucleotide metabolism	Fluorescence-based		
Dipeptidyl peptidase III (DPP-III)	Protease	Fluorescence-based		
Dipeptidyl peptidase IV (DPP-IV)	Protease	Fluorescence-based		
Dipeptidyl peptidase IX (DPP-IX)	Protease	Fluorescence-based		
Dipeptidyl peptidase VIII (DPP-VIII)	Protease	Fluorescence-based		
DLK/MAP3K12	Protein kinase	HotSpot™	NanoBRET	
DMPK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
DMPK2/CDC42BPG	Protein kinase	HotSpot™		
DNA-PK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
DNMT1	Methyltransferase	Radiometric HotSpot™		Yes
DNMT3a	Methyltransferase	Radiometric HotSpot™		Yes
DNMT3b	Methyltransferase	Radiometric HotSpot™		Yes
DNMT3b/DNMT3L	Methyltransferase	Radiometric HotSpot™		
Dopamine D1	GPCR	InVEST; LinkLight™	InVEST - Agonist/ Antagonist	
Dopamine D2	GPCR	LinkLight™		
Dopamine D2L	GPCR	InVEST		
Dopamine D2S	GPCR	InVEST		
Dopamine D3	GPCR	InVEST; LinkLight™		
Dopamine D4	GPCR	LinkLight™		
Dopamine D5	GPCR	LinkLight™		
Dopamine DAT	Transporter	InVEST	InVEST	
DOT1L	Methyltransferase	Radiometric HotSpot™		Yes
DRAK1/STK17A	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
DUSP22/MKPX	Phosphatase	Fluorescence-based		
DYRK1/DYRK1A	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
DYRK1B	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
DYRK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
DYRK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
DYRK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
EDNRA	GPCR	LinkLight™		
EDNRB	GPCR	LinkLight™		
EED	WDR	HTRF		Yes
EEF2K	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
EGFR	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; SPR; ADP-Glo; InVEST	BaF3; CPA	Yes
EGFR (A763_Y764insFHEA)	Protein kinase	HotSpot™		
EGFR (A763_Y764insFQEA)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
EGFR (A767_S768insTLA)	Protein kinase	HotSpot™		
EGFR (C775S/T790M/L858R)	Protein kinase	HotSpot™		
EGFR (C797A)	Protein kinase	HotSpot™		
EGFR (C797G/L858R)	Protein kinase	HotSpot™		
EGFR (C797S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
EGFR (C797S/L858R)	Protein kinase	HotSpot™; ADP-Glo		Yes
EGFR (d746)	Protein kinase	HotSpot™		
EGFR (d746-750)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
EGFR (d746-750/C775S/T790M/L858R)	Protein kinase	HotSpot™		
EGFR (d746-750/C797A)	Protein kinase	HotSpot™		
EGFR (d746-750/C797S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
EGFR (d746-750/G724S)	Protein kinase	HotSpot™		
EGFR (d746-750/S768I)	Protein kinase	HotSpot™		
EGFR (d746-750/T790M)	Protein kinase	HotSpot™	CPA	
EGFR (d746-750/T790M/C797S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	BaF3; CPA	Yes
EGFR (d746-750/T790M/C797S/L858R)	Protein kinase	HotSpot™; ADP-Glo		Yes
EGFR (d746-750/T790M/L792F)	Protein kinase	HotSpot™		
EGFR (d746-750/T790M/L792H)	Protein kinase	HotSpot™		
EGFR (d746-750/T790M/L798I)	Protein kinase	HotSpot™		
EGFR (d746-750/T790M/L858R)	Protein kinase	HotSpot™		
EGFR (d747-749)	Protein kinase	HotSpot™		
EGFR (d747-749/A750P)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
EGFR (d747-752/P753S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
EGFR (d752-759)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
EGFR (D761Y)	Protein kinase	HotSpot™		
EGFR (D770_N771insG)	Protein kinase	HotSpot™		
EGFR (D770_N771insNPG)	Protein kinase	HotSpot™		
EGFR (D770_N771insNPG/T790M)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
EGFR (D770GY)	Protein kinase	HotSpot™		
EGFR (G719C)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
EGFR (G719D)	Protein kinase	HotSpot™		
EGFR (G719S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
EGFR (K716A)	Protein kinase	HotSpot™		
EGFR (K716A/ C797S/L858R)	Protein kinase	HotSpot™		
EGFR (K716A/ T790M/C797S/ L858R)	Protein kinase	HotSpot™		
EGFR (K716Q/L718Q)	Protein kinase	HotSpot™		
EGFR (K728A)	Protein kinase	HotSpot™		
EGFR (K728A/ T790M/C797S/ L858R)	Protein kinase	HotSpot™		
EGFR (L718Q)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
EGFR (L747S)	Protein kinase	HotSpot™		
EGFR (L792F)	Protein kinase	HotSpot™		
EGFR (L792F/L858R)	Protein kinase	HotSpot™		
EGFR (L792H)	Protein kinase	HotSpot™		
EGFR (L792H/ C797S/L858R)	Protein kinase	HotSpot™		
EGFR (L792H/L858R)	Protein kinase	HotSpot™		
EGFR (L858R)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
EGFR (L858R/T790M)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	CPA	Yes
EGFR (L858R/T970M)	Protein kinase		NanoBRET	
EGFR (L861Q)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
EGFR (N771_ P772insH)	Protein kinase	HotSpot™		
EGFR (N771_ P772insN)	Protein kinase	HotSpot™		
EGFR (R999A)	Protein kinase	HotSpot™		
EGFR (S768I)	Protein kinase	HotSpot™		
EGFR (T790M)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
EGFR (T790M/ C797G/L858R)	Protein kinase	HotSpot™		
EGFR (T790M/C797S /L858R)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
EGFR (T790M/C797S)	Protein kinase	HotSpot™		
EGFR (T790M/L858R)	Protein kinase	ADP-Glo		
EGFR (T790M/L792F/ C797S/L858R)	Protein kinase	HotSpot™		
EGFR (T790M/L792F/ L858R)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
EGFR (T790M/L792H/C797S/L858R)	Protein kinase	HotSpot™		
EGFR (T790M/L792H/L858R)	Protein kinase	HotSpot™		
EGFR (V769_D770insGE)	Protein kinase	HotSpot™		
EGFR (V948R)	Protein kinase	HotSpot™		
EIF2AK1/HRI	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
EIF2AK2/PKR	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
EIF2AK3/PERK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
EIF2AK4/GCN2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
Elastase	Protease	Fluorescence-based		
Endothelin ETA	GPCR		InVEST - Agonist/ Antagonist	
EP300-GST	Bromodomain	ThermoShift		Yes
EP300-His	Bromodomain	ThermoShift		Yes
EPHA1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHA2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHA3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHA4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHA5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHA6	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHA7	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHA8	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
EPHB1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHB2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHB3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
EPHB4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
EpoR	BaF3		Cell Titer Glo™	
ERBB2 (A775_G776insYVMA)	Protein kinase	HotSpot™		
ERBB2 (D769H)	Protein kinase	HotSpot™		
ERBB2 (D769Y)	Protein kinase	HotSpot™		
ERBB2 (P1170A)	Protein kinase	HotSpot™		
ERBB2 (P780-Y781insGSP)	Protein kinase	HotSpot™		
ERBB2 (R896C)	Protein kinase	HotSpot™		
ERBB2 (V777_G778insCG)	Protein kinase	HotSpot™		
ERBB2 (V777L)	Protein kinase	HotSpot™		
ERBB2 (V956R)	Protein kinase	HotSpot™		
ERBB2 775YVMA776	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
ERBB2/HER2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
ERBB4/HER4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
ERK1/MAPK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ERK2/MAPK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; SPR; ADP-Glo	NanoBRET	Yes
ERK5	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
ERK5/MAPK7 CD	Protein kinase	HotSpot™		
ERK5/MAPK7 FL	Protein kinase	HotSpot™		
ERK7/MAPK15	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ERN1 (R727A)	Protein kinase	HotSpot™		
ERN1 (R728A)	Protein kinase	HotSpot™		
ERN1/IRE1	Protein kinase	HotSpot™	NanoBRET	
ERN1/IRE1 (R727A/R728A)	Protein kinase	HotSpot™		
ERN2/IRE2	Protein kinase	HotSpot™	NanoBRET	
Estrogen-α	Nuclear Receptor	InVEST	InVEST - Agonist/Antagonist	
EZH1 Complex	Methyltransferase	Radiometric HotSpot™		Yes
EZH2 (Y641F) Complex	Methyltransferase	Radiometric HotSpot™		Yes
EZH2 Complex	Methyltransferase	Radiometric HotSpot™		Yes
F4/80			Flow Cytometry	
Factor IXa	Protease	Fluorescence-based		
Factor VIIa	Protease	Fluorescence-based		
Factor Xa	Protease	Fluorescence-based		
Factor XIa	Protease	Fluorescence-based		
Factor XIIa	Protease	Fluorescence-based		
FAK aa411-686	Protein kinase	<sup>33</sup> PanQinase™		Yes
FAK/PTK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET; CPA	Yes
FAP	Protease	Fluorescence-based	Flow Cytometry	
Fas			Flow Cytometry	
FasL			Flow Cytometry	
FCGR1A	Fc Receptor	SPR		
FCGR2A	Fc Receptor	SPR		
FCGR2B	Fc Receptor	SPR		
FCGR3A	Fc Receptor	SPR		
FCGR3B	Fc Receptor	SPR		
FCGRT	Fc Receptor	SPR		
FFAR1	GPCR	LinkLight™		
FFAR2	GPCR	LinkLight™		
FFAR3	GPCR	LinkLight™		
FFAR4	GPCR	LinkLight™		
FER	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
FES/FPS	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
FGFR1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET	Yes
FGFR1 (W666R)	Protein kinase	HotSpot™		
FGFR1 (V561M)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
FGFR1 OP- FGFR1	Protein kinase	HotSpot™		
FGFR2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
FGFR2 (C491A)	Protein kinase	HotSpot™		
FGFR2 (C491A/ V564I)	Protein kinase	HotSpot™		
FGFR2 (C491A/ V564L)	Protein kinase	HotSpot™		
FGFR2 (C491F)	Protein kinase	HotSpot™		
FGFR2 (C491S)	Protein kinase	HotSpot™		
FGFR2 (C491S/ V564L)	Protein kinase	HotSpot™		
FGFR2 (E565A)	Protein kinase	HotSpot™		
FGFR2 (E565G)	Protein kinase	HotSpot™		
FGFR2 (K526E)	Protein kinase	HotSpot™		
FGFR2 (K641R)	Protein kinase	HotSpot™		
FGFR2 (K659N)	Protein kinase	HotSpot™		
FGFR2 (M420I)	Protein kinase	HotSpot™		
FGFR2 (N549H)	Protein kinase	HotSpot™		
FGFR2 (N549K)	Protein kinase	HotSpot™		
FGFR2 (R612T)	Protein kinase	HotSpot™		
FGFR2 (V564F)	Protein kinase	HotSpot™		
FGFR2 (V564I)	Protein kinase	HotSpot™		
FGFR2 (V564L)	Protein kinase	HotSpot™		
FGFR3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
FGFR3 (G697C)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
FGFR3 (K650E)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
FGFR3 (K650M)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
FGFR3 (K650Q)	Protein kinase	HotSpot™		
FGFR3 (V555M)	Protein kinase	HotSpot™		
FGFR4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	
FGFR4 (N535K)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
FGFR4 (V550E)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
FGFR4 (V550L)	Protein kinase	HotSpot™		
FGFR4 (V550M)	Protein kinase	HotSpot™		
FGR	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
FLT1/VEGFR1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
FLT3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
FLT3 (D835H)	Protein kinase	HotSpot™	NanoBRET	
FLT3 (D835V)	Protein kinase	HotSpot™	NanoBRET	
FLT3 (D835Y)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
FLT3 (F594_R595insR)	Protein kinase	HotSpot™		
FLT3 (F594_R595insREY)	Protein kinase	HotSpot™		
FLT3 (F691L)	Protein kinase	HotSpot™		
FLT3 (F691L/D835Y)	Protein kinase	HotSpot™		
FLT3 (ITD)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
FLT3 (ITD)-NPOS	Protein kinase	HotSpot™		
FLT3 (ITD)-W51	Protein kinase	HotSpot™		
FLT3 (K663Q)	Protein kinase		NanoBRET	
FLT3 (N841I)	Protein kinase		NanoBRET	
FLT3 (R595_E596insEY)	Protein kinase	HotSpot™		
FLT3 (R834Q)	Protein kinase		NanoBRET	
FLT3 (Y591_V592insVDFREYEYD)	Protein kinase	HotSpot™		
FLT3 (Y591-V592insVDFREYEYD/D835Y)	Protein kinase	HotSpot™		
FLT3 (Y591-V592insVDFREYEYD/F691L)	Protein kinase	HotSpot™		
FLT4/VEGFR3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
FMS	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; InVEST	NanoBRET	Yes
FoxP3			Flow Cytometry	
FRK/PTK5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
Furin	Protease	Fluorescence-based		
FXR	Nuclear receptor	Luciferase Reporter		
FYN	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
FYN (Y531F)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
FYN-A	Protein kinase	HotSpot™		
G9a	Methyltransferase	Radiometric HotSpot™; SPR		Yes
GABA(A) (Central BDZ)	Ion Channel	InVEST		
GABA(A) $\alpha$ 1 $\beta$ 2 $\gamma$ 2L	Ion Channel		InVEST	
GAK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
GALR1	GPCR	LinkLight™		
GAT1	Transporter	InVEST		
GCK/MAP4K2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
GHSR	GPCR	LinkLight™		
GLK/MAP4K3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
GLP	Methyltransferase	Radiometric HotSpot™		
GLP1R	GPCR	LinkLight™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
Glucocorticoid	Nuclear Receptor	InVEST	InVEST - Agonist/ Antagonist	
GNMT	Methyltransferase	SPR		Yes
gp276			Flow Cytometry	
gp33			Flow Cytometry	
GPBAR1	GPCR		InVEST	
GPR3	GPCR	LinkLight™		
GPR6	GPCR	LinkLight™		
GPR12	GPCR	LinkLight™		
GPR34	GPCR	LinkLight™		
GPR55	GPCR	LinkLight™		
GPR84	GPCR	LinkLight™		
GPR101	GPCR	LinkLight™		
GPR119	GPCR	LinkLight™		
GPR141	GPCR	LinkLight™		
GPR183	GPCR	LinkLight™		
Gr1	GPCR	LinkLight™	Flow Cytometry	
Granzyme B	Protease	Fluorescence-based	Flow Cytometry	
GSG2	Protein kinase	ADP-Glo		
GRK1	Protein kinase	HotSpot™		
GRK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
GRK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
GRK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
GRK5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
GRK6	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
GRK7	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
GSK3a	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
GSK3b	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET	Yes
GSK3b (C199A)	Protein kinase	HotSpot™		
Haspin	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	CPA	Yes
HCAR2	GPCR	LinkLight™		
HCK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
HDAC1	HDAC	Fluorescence-based		Yes
HDAC10	HDAC	Fluorescence-based	NanoBRET	
HDAC11	HDAC	Fluorescence-based		Yes
HDAC2	HDAC	Fluorescence-based		Yes
HDAC3	HDAC	Fluorescence-based		Yes
HDAC4	HDAC	Fluorescence-based		Yes
HDAC5	HDAC	Fluorescence-based		Yes
HDAC6	HDAC	Fluorescence-based	NanoBRET	Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
HDAC6-2	HDAC		NanoBRET	
HDAC7	HDAC	Fluorescence-based		Yes
HDAC8	HDAC	Fluorescence-based		Yes
HDAC9	HDAC	Fluorescence-based		
Hepsin	Protease	Fluorescence-based		
hERG	Ion Channel	InVEST	Patch Clamp; InVEST	
HGK/MAP4K4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
HIPK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
HIPK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
HIPK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
HIPK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
Histamine H1	GPCR	InVEST	InVEST - Agonist/ Antagonist	
Histamine H2	GPCR	InVEST	InVEST - Agonist/ Antagonist	
Histone & Tubulin Deacetylation	Cell-based Epigenetic	Western Blot; ELISA		
Histone Deacetylation (Class I/II)	Cell-based Epigenetic	HDAC-Glo		
Histone Deacetylation (Class IIa)	Cell-based Epigenetic	HDAC-Glo		
Histone Methylation	Cell-based Epigenetic	Western Blot		
Histone Phosphorylation	Cell-based Epigenetic	ELISA		
HIV-1	Protease	Fluorescence-based		
HNMT	Methyltransferase	SPR		Yes
HP1 alpha-[CHR]-His	CHR	ThermoShift		Yes
HP1 alpha-GST	CHR	ThermoShift		Yes
HP1 beta-[CHR]-GST	CHR	ThermoShift		Yes
HP1 beta-[CHR]-His	CHR	AlphaScreen; ThermoShift		Yes
HP1 beta-GST	CHR	ThermoShift		Yes
HP1 beta-His	CHR	AlphaScreen; ThermoShift		Yes
HP1 beta-Strep	CHR	ThermoShift		Yes
HP1 gamma-GST	CHR	ThermoShift		Yes
HP1 gamma-His	CHR	ThermoShift		Yes
HPK1/MAP4K1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
HRAS	RAS-related	NEA; Raf1 PPI Assay; TSA; SPR	NanoBRET	Yes
HRAS (G12C)	RAS-related	NEA; Raf1 PPI Assay; TSA	NanoBRET	Yes
HRAS (G12V)	RAS-related	NEA; Raf1 PPI Assay; TSA	NanoBRET	Yes
HRH1	GPCR	LinkLight™		
HRH2	GPCR	LinkLight™		
HRV-3C	Protease	Fluorescence-based		
HSP90a	Heat shock protein	Fluorescence Polarization		Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
HSP90b	Heat shock protein	Fluorescence Polarization		Yes
HTR2B	GPCR	LinkLight™		
HUNK	Protein kinase	HotSpot™	NanoBRET	
IDH1 G97D	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH1 R100A	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH1 R100Q	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH1 R132C	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH1 R132H	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH1 WT	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH1 Y139D	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH2 R140K	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH2 R140Q	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH2 R172Q	Isocitrate dehydrogenase	Fluorescence-based		Yes
IDH2 WT	Isocitrate dehydrogenase	Fluorescence-based		Yes
IFNg			Flow Cytometry	
IGF1R	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
IKKa/CHUK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
IKKb/IKBKB	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
IKKe/IKBKE	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
IL-17A			Flow Cytometry	
IL-2			Flow Cytometry	
INMT	Methyltransferase	SPR		Yes
IR	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; InVEST	NanoBRET	Yes
IRAK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
IRAK2	Protein kinase	HotSpot™		
IRAK3	Protein kinase	Probe-displacement	NanoBRET	
IRAK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
IRAK4 aa104-460	Protein kinase	ADP-Glo		
IRAK4 aa104-460 (untagged)	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		
IRR/INSRR	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
ITK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
JAK1	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
JAK1 (aa866-1154)	Protein kinase	HotSpot™		
JAK1 (aa850-1154)	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
JAK1 JH2	Protein kinase	Probe-displacement		
JAK1 S729C	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
JAK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
JAK2 (JH1 domain)	Protein kinase		NanoBRET	
JAK2 (V617F)	Protein kinase	HotSpot™	NanoBRET	
JAK2 JH1 & JH2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
JAK2 JH2	Protein kinase	Probe-displacement		
JAK2 JH2 (V617F)	Protein kinase			Yes
JAK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
JAK3 JH1 & JH2	Protein kinase	HotSpot™		
JNK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
JNK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
JNK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
Kallikrein 1	Protease	Fluorescence-based		
Kallikrein 2	Protease	Fluorescence-based		
Kallikrein 3	Protease	Fluorescence-based		
Kallikrein 4	Protease	Fluorescence-based		
Kallikrein 5	Protease	Fluorescence-based		
Kallikrein 6	Protease	Fluorescence-based		
Kallikrein 7	Protease	Fluorescence-based		
Kallikrein 8	Protease	Fluorescence-based		
Kallikrein 11	Protease	Fluorescence-based		
Kallikrein 12	Protease	Fluorescence-based		
Kallikrein 13	Protease	Fluorescence-based		
Kallikrein 14	Protease	Fluorescence-based		
KAT2A	Histone Acetyltransferase	ThermoShift; Radiometric HAT		Yes
KAT2B	Histone Acetyltransferase	ThermoShift; Radiometric HAT		Yes
KAT5	Histone Acetyltransferase	Radiometric HAT		
KAT5-2-[CHR]-His	CHR-like	ThermoShift		Yes
KAT5-3-[CHR]-GST	CHR-like	ThermoShift		Yes
KAT5-3-[CHR]-His	CHR-like	ThermoShift		Yes
KAT6A	Histone Acetyltransferase	Radiometric HAT		
KAT6B	Histone Acetyltransferase	Radiometric HAT		
KAT7	Histone Acetyltransferase	Radiometric HAT		
KAT8	Histone Acetyltransferase	Radiometric HAT		
KCNQ1	Ion Channel		InVEST	
KDM4A	Histone demethylase	HTRF		Yes
KDM4C	Histone demethylase	HTRF		
KDM4D	Histone demethylase	AlphaLISA		
KDM5A	Histone demethylase	HTRF		
KDM5B	Histone demethylase	HTRF		Yes
KDM5C	Histone demethylase	HTRF		Yes
KDM6B	Histone demethylase	AlphaLISA		Yes
KDR/VEGFR2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	CPA	Yes
KHS/MAP4K5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
Ki67			Flow Cytometry	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
KIF2C	Kinesin	ADP-Glo		
KIF3C	Kinesin	ADP-Glo		
KIF4A	Kinesin	ADP-Glo		
KIF5B	Kinesin	ADP-Glo		
KIF10/CENPE	Kinesin	ADP-Glo		
KIF11/Eg5	Kinesin	ADP-Glo		
KIF14	Kinesin			Yes
KIF15	Kinesin			Yes
KIF18A	Kinesin	ADP-Glo		Yes
KIF18B	Kinesin	ADP-Glo		Yes
KIF19	Kinesin	ADP-Glo		Yes
KIF20A	Kinesin	ADP-Glo		
KIF22	Kinesin	ADP-Glo		
KIF23	Kinesin	ADP-Glo		
KIFC1	Kinesin	ADP-Glo		Yes
KIFC3	Kinesin	ADP-Glo		
KISS1R	GPCR	LinkLight™		
KIT (L576P)	Protein kinase		NanoBRET	
KRAS	RAS-related	NEA; SOS1 PPI Assay; Raf1 PPI Assay; TSA; SPR	NanoBRET; 3D Spheroid	Yes
KRAS (G12A)	RAS-related	NEA; Raf1 PPI Assay; TSA	NanoBRET	Yes
KRAS (G12C)	RAS-related	NEA; PROTAC; SOS1 PPI Assay; Raf1 PPI Assay; TSA; SPR	NanoBRET; 3D Spheroid	Yes
KRAS (G12C) Ternary Complex	RAS-related		NanoBRET Ternary Complex Formation	
KRAS (G12D)	RAS-related	NEA; SOS1 PPI Assay; Raf1 PPI Assay; TSA; SPR	NanoBRET; 3D Spheroid	Yes
KRAS (G12D/T35S)	RAS-related	NEA; Raf1 PPI Assay; TSA		Yes
KRAS (G12R)	RAS-related	NEA; Raf1 PPI Assay; TSA; SPR		Yes
KRAS (G12S)	RAS-related	NEA; Raf1 PPI Assay; TSA	NanoBRET	Yes
KRAS (G12V)	RAS-related	NEA; SOS1 PPI Assay; Raf1 PPI Assay; TSA; SPR	NanoBRET; 3D Spheroid	Yes
KRAS (G13C)	RAS-related	NEA; Raf1 PPI Assay; TSA		Yes
KRAS (G13D)	RAS-related	NEA; Raf1 PPI Assay; TSA		Yes
KRAS (Q61H)	RAS-related	NEA; Raf1 PPI Assay; TSA		Yes
KSR1	Protein kinase	HotSpot™		
KSR1 (A635F)	Protein kinase	HotSpot™		
KSR1 (L639F)	Protein kinase	HotSpot™		
KSR2	Protein kinase	HotSpot™		
KSR2 (R676S)	Protein kinase	HotSpot™		
Kv7.1	Ion Channel		InVEST	
L3MBTL1	MBT	ThermoShift		Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
L3MBTL1-His	MBT	AlphaScreen		Yes
L3MBTL3-His	MBT	AlphaScreen		Yes
LAG3-MHCII	Immune Checkpoint	HTRF		
LATS1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
LATS2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
LCK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET	Yes
LCK2/ICK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	
LIHK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
LIHK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
LKB1	Protein kinase	HotSpot™	NanoBRET	
LKB1/MO25a/STRADa	Protein kinase	<sup>33</sup> PanQinase™		
LOK/STK10	Protein kinase	HotSpot™	NanoBRET	
LPAR2	GPCR	LinkLight™		
LPAR3	GPCR	LinkLight™		
LPAR4	GPCR	LinkLight™		
LRRK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET; CPA	
LRRK2 (G2019S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
LRRK2 (I2020T)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
LRRK2 (R1441C)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
LRRK2 pT73 Rab10	Protein kinase		CPA	
LSD1	Histone demethylase	Amplex™ Red		Yes
Ly6C			Flow Cytometry	
Ly6G			Flow Cytometry	
LYN	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
LYNB	Protein kinase	HotSpot™		
MAK	Protein kinase	HotSpot™		
MAGL	Lipase	Fluorescence; Absorbance		Yes
MALT1	Protease	Fluorescence-based; InVEST		
MAO-A	Monoamine oxidase	InVEST		
MAO-B	Monoamine oxidase	InVEST		
MAP2K1/KRAS(G12C)	Protein kinase		NanoBRET	
MAP2K2/KRAS(G12C)	Protein kinase		NanoBRET	
MAP2K6	Protein kinase		NanoBRET	
MAP3K1	Protein kinase	ADP-Glo		
MAP3K4	Protein kinase		NanoBRET	
MAP3K7/MAP3K7IP1	Protein kinase	<sup>33</sup> PanQinase™		
MAP3K13	Protein kinase		NanoBRET	
MAP3K21	Protein kinase		NanoBRET	
MAPK1/KRAS(G12C)	Protein kinase		NanoBRET	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
MAPK3/KRAS(G12C)	Protein kinase		NanoBRET	
MAPK4	Protein kinase		NanoBRET	
MAPK6	Protein kinase		NanoBRET	
MAPKAPK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MAPKAPK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MAPKAPK5/PRAK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MARK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MARK2/PAR-1Ba	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
MARK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MARK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
MAST3	Protein kinase	HotSpot™	NanoBRET	
MAST4	Protein kinase		NanoBRET	
MASTL	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
Matriptase/ST14	Protease	Fluorescence-based		
Matriptase 2	Protease	Fluorescence-based		
MCL1	Apoptosis-related pathway	HTRF		Yes
MC3R	GPCR	LinkLight™		
MC4R	GPCR	LinkLight™		
mDHODH	Nucleotide metabolism	Fluorescence-based		
MEK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MEK1 (P124L)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
MEK1 F53L	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
MEK1 SESE	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
MEK1/2	Protein kinase		NanoBRET	
MEK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
MEK3	Protein kinase	HotSpot™		
MEK5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MEKK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		Yes
MEKK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MEKK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MEKK6	Protein kinase	HotSpot™		
MELK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MELK (T460M)	Protein kinase	HotSpot™; NanoBRET		
MERTK	Protein kinase	ADP-Glo		
MET (D1288H)	Protein kinase		NanoBRET	
METTL21A	Methyltransferase	Radiometric HotSpot™		
METTL3/METTL14	Methyltransferase	Radiometric HotSpot™		
MHCI			Flow Cytometry	
MHCII			Flow Cytometry	
mHDAC6	HDAC	Fluorescence-based		
mHDAC11	HDAC	Fluorescence-based		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
MINK/MINK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MKK3	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
MKK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MKK6	Protein kinase	HotSpot™	NanoBRET	
MKK6 SDTD	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
MKK7	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST		Yes
MLCK/MYLK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
MLCK2/MYLK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MLK1/MAP3K9	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
MLK2/MAP3K10	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	
MLK3/MAP3K11	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	
MLK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MLL1 Complex	Methyltransferase	Radiometric HotSpot™		Yes
MLL2 Complex	Methyltransferase	Radiometric HotSpot™		Yes
MLL3 Complex	Methyltransferase	Radiometric HotSpot™		Yes
MLL4 Complex	Methyltransferase	Radiometric HotSpot™		Yes
MLNR	GPCR	LinkLight™		
MMP 1	Protease	Fluorescence-based		
MMP 10	Protease	Fluorescence-based		
MMP 12	Protease	Fluorescence-based		
MMP 13	Protease	Fluorescence-based		
MMP 14	Protease	Fluorescence-based		
MMP 2	Protease	Fluorescence-based		
MMP 3	Protease	Fluorescence-based		
MMP 7	Protease	Fluorescence-based		
MMP 8	Protease	Fluorescence-based		
MMP 9	Protease	Fluorescence-based		
MNK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	CPA	
MNK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
MOK	Protein kinase		NanoBRET	
MPP8-[CHR]-GST	CHR	ThermoShift		
MRCK $\alpha$ /CDC42BPA	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
MRCK $\beta$ /CDC42BPB	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
MRGX2	GPCR		InVEST	
MSK1/RPS6KA5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
MSK2/RPS6KA4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
MSSK1/STK23	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
MST1/STK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MST2/STK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MST3/STK24	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
MST4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MTH1	Replication-related	PPiLight™ Inorganic Pyrophosphate		Yes
MTHFD1	Replication-related	Fluorescence-based		
MTHFD2	Replication-related	Fluorescence-based		
mTOR/FRAP1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
Muscarinic M1	GPCR	InVEST; LinkLight™		
Muscarinic M2	GPCR	InVEST; LinkLight™		
Muscarinic M3	GPCR	InVEST; LinkLight™	InVEST - Agonist/ Antagonist	
Muscarinic M4	GPCR	InVEST		
Muscarinic M5	GPCR	InVEST; LinkLight™		
MUSK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
MYLK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
MYLK4	Protein kinase	HotSpot™	NanoBRET	
MYO3A	Protein kinase	HotSpot™		
MYO3b	Protein kinase	HotSpot™		
MYSM1	Ubiquitin-proteasome	Fluorescence-based		
nAChR (α1)	Ion Channel		InVEST	
nAChR (α4/β2)	Ion Channel		InVEST - Agonist/ Antagonist	
Nav1.5	Ion Channel		Patch Clamp; InVEST	
NEDP1	Ubiquitin-proteasome	Fluorescence-based		
NEK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
NEK11	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
NEK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
NEK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
NEK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
NEK5	Protein kinase	HotSpot™; NanoBRET		
NEK6	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
NEK7	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
NEK8	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
NEK9	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
Nepilysin	Protease	Fluorescence-based		
NIK/MAP3K14	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
NIM1K	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
NK3 receptor	GPCR	InVEST		
NK1.1			Flow Cytometry	
NLK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
NLRP3			NanoBRET	
NMDA	Ion Channel	InVEST		
NMUR1	GPCR	LinkLight™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
NNMT	Methyltransferase	Fluorescence; SPR		Yes
Norepinephrine NET	Transporter	InVEST		
NPSR1	GPCR	LinkLight™		
NQO1	NAD(P)H dehydrogenase quinone	Fluorescence-based		Yes
NQO2	NAD(P)H dehydrogenase quinone	Fluorescence-based		Yes
NRAS	RAS-related	NEA; Raf1 PPI Assay; TSA; SPR		Yes
NRAS (Q61H)	RAS-related	NEA; Raf1 PPI Assay; TSA		Yes
NRAS (Q61R)	RAS-related	NEA; Raf1 PPI Assay; TSA		Yes
NRK	Protein kinase		NanoBRET	
NRMT1	Methyltransferase	Radiometric HotSpot™		Yes
NSD1	Methyltransferase	Radiometric HotSpot™		Yes
NSD2	Methyltransferase	Radiometric HotSpot™; SPR		Yes
NSD2 (E1099K)	Methyltransferase	Radiometric HotSpot™		Yes
NSD2 (T1150A)	Methyltransferase	Radiometric HotSpot™		Yes
NSD3	Methyltransferase	Radiometric HotSpot™		Yes
NTSR1	GPCR	LinkLight™		
Nuclear Extract	HDAC	Fluorescence-based		Yes
Opioid delta	GPCR	InVEST; LinkLight™	InVEST - Agonist/ Antagonist	
Opioid kappa	GPCR	InVEST; LinkLight™	InVEST - Agonist/ Antagonist	
Opioid mu	GPCR	InVEST; LinkLight™	InVEST - Agonist/ Antagonist	
OSR1/OXSR1	Protein kinase	HotSpot™		
P2RY4	GPCR	LinkLight™		
P2RY10	GPCR	LinkLight™		
P2RY12	GPCR	LinkLight™		
p300	Histone Acetyltransferase	Radiometric HAT; SPR		
p38a (T106M)	Protein kinase	HotSpot™; NanoBRET		
P38a/MAPK14	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
P38b/MAPK11	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
P38d/MAPK13	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
P38g/MAPK12	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
p53/MDM2	Apoptosis-related pathway		NanoBRET PPI	
P70S6K/RPS6KB1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	CPA	
P70S6Kb/RPS6KB2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
PAD4	Peptidyl Arginine Deiminase	Fluorescence		Yes
PAK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PAK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PAK2 (Y443N)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
PAK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PAK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PAK5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
PAK6	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PAK7	Protein kinase	ADP-Glo		
Papain	Protease	Fluorescence-based		
PARG	PARP	Fluorescence-based		Yes
PARP1	PARP	NAD/NADH-Glo™	NanoBRET	Yes
PARP2	PARP	NAD/NADH-Glo™	NanoBRET	Yes
PARP5A	PARP		NanoBRET	
PARP5B	PARP	NAD/NADH-Glo™	NanoBRET	
PARP7	PARP		NanoBRET	
PARP11	PARP		NanoBRET	
PARP12	PARP		NanoBRET	
PASK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
PB1-1	Bromodomain	ThermoShift		Yes
PB1-2	Bromodomain	ThermoShift		Yes
PB1-3	Bromodomain	ThermoShift		Yes
PB1-4	Bromodomain	ThermoShift		Yes
PB1-5	Bromodomain	ThermoShift		Yes
PB1-6	Bromodomain	ThermoShift		Yes
PBK/TOPK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PDE10A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE1A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE1B	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE1C	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE2A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE3A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE3B	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE4A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE4B	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE4C	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE4D	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE4D2	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE5A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE7A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE7B	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE8A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDE8B	Phosphodiesterase	Fluorescence Polarization		
PDE9A	Phosphodiesterase	Fluorescence Polarization; InVEST		
PDGFRα	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
PDGFRa(D842V)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PDGFRa(G680R)	Protein kinase	HotSpot™		
PDGFRa(T674I)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PDGFRa(V561D)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PDGFRa-FIP1L1	Protein kinase	HotSpot™		
PDGFRb	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
PDGFRb-TPM3	Protein kinase	HotSpot™		
PDK1/PDHK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST		Yes
PDK1/PDPK1	Protein kinase	HotSpot™		
PDK2/PDHK2	Protein kinase	HotSpot™		
PDK3/PDHK3	Protein kinase	HotSpot™		
PDK4/PDHK4	Protein kinase	HotSpot™		
PD1-PDL1	Immune Checkpoint	HTRF		
PEAK1	Protein kinase	HotSpot™		
Perforin			Flow Cytometry	
PFKFB2				Yes
PHIP-2	Bromodomain	ThermoShift		Yes
PHIP-Tndm	Bromodomain	ThermoShift		Yes
PHKg1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
PHKg2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
PI3K (p110a(E542K)/p85a)	Lipid kinase	ADP-Glo	NanoBRET	
PI3K (p110a(E545K)/p85a)	Lipid kinase	ADP-Glo	NanoBRET	
PI3K (p110a(H1047R)/p85a)	Lipid kinase	ADP-Glo	NanoBRET	
PI3K (p110a/p55g)	Lipid kinase	ADP-Glo		
PI3K (p110a/p65a)	Lipid kinase	ADP-Glo		
PI3Ka (p110a/p85a)	Lipid kinase	ADP-Glo	NanoBRET	
PI3Kb (p110b/p85a)	Lipid kinase	ADP-Glo	NanoBRET	
PI3Kb (p110b/p85b)	Lipid kinase	ADP-Glo		
PI3KC2a	Lipid kinase	ADP-Glo		
PI3KC2B	Lipid kinase	ADP-Glo		
PI3KC3	Lipid kinase	ADP-Glo	NanoBRET	
PI3Kd (p110d/p85a)	Lipid kinase	ADP-Glo	NanoBRET	
PI3Kg (p110g)	Lipid kinase	ADP-Glo; InVEST		
PI4K2A	Lipid kinase	ADP-Glo		
PI4K2B	Lipid kinase	ADP-Glo		
PI4Ka	Lipid kinase	ADP-Glo		
PI4Kb	Lipid kinase	ADP-Glo		
PIK3C2A	Lipid kinase	ADP-Glo		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
PIK3C2B	Lipid kinase	ADP-Glo		
PIK3C2G	Lipid kinase	ADP-Glo		
PIK3C3	Lipid kinase	ADP-Glo		
PIK3CA/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CA (C420R)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (D549N)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (D725G)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E172Q)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E418K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E542K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E545A)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E545K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E545K/D549N)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E545K/D725G)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E545K/E418K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E545K/E453K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E545K/I197K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (E545K/S576C)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047L)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047R)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047R/M1004I)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047R/Q859H)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047R/Q859H)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047R/Q859K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047R/R88Q)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047R/W780R)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (H1047Y)/PIK3R1	Lipid kinase		NanoBRET	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
PIK3CA (I197K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (I800L)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (M1004I)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (M1043I)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (Q546K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (Q859H)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (Q859K)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (R88Q)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (S576C)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA (W780R)/PIK3R1	Lipid kinase		NanoBRET	
PIK3CA/PIK3R1	Lipid kinase		NanoBRET	
PIK3CB/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CB D1067A/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CB D1067V/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CB D1067Y/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CB E1051K/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CB E633K/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CB L1049R/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CD/PIK3R1	Lipid kinase	ADP-Glo		
PIK3CG	Lipid kinase	ADP-Glo		
PIKFYVE	Lipid kinase	ADP-Glo	NanoBRET	
PIM1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
PIM2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	CPA	Yes
PIM3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
PIP4K2A	Lipid kinase	ADP-Glo		
PIP4K2B	Lipid kinase	ADP-Glo		
PIP4K2C	Lipid kinase	ADP-Glo	NanoBRET	
PIP5K1A	Lipid kinase	ADP-Glo		
PIP5K1B	Lipid kinase	ADP-Glo	NanoBRET	
PIP5K1C	Lipid kinase	ADP-Glo		
PKA	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
PKA (L206R)	Protein kinase	HotSpot™		
PKAcb	Protein kinase	HotSpot™	NanoBRET	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
PKA $\alpha$	Protein kinase	HotSpot™		
PKA-DNAJB1	Protein kinase	HotSpot™		
PKC $\alpha$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PKC $\beta$ 1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PKC $\beta$ 2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PKC $\delta$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PKC $\epsilon$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PKC $\eta$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PKC $\zeta$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PKC $\theta$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PKC $\iota$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PKC $\mu$ /PRKD1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PKC $\nu$ /PRKD3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PKC $\theta$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PKC $\zeta$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PKD2 (G870E)	Protein kinase	HotSpot™		
PKD2/PRKD2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
PKD2/PRKD2 (G848E)	Protein kinase	HotSpot™		
PKG1 $\alpha$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
PKG1 $\beta$	Protein kinase	HotSpot™		
PKG2/PRKG2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
PKMYT1	Protein kinase	HotSpot™; ADP-Glo; Probe-displacement	NanoBRET	
PKM $\zeta$	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PKN1/PRK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
PKN1-ANXA4 (Aex2Pex13)	Protein kinase	HotSpot™		
PKN1-TECR (Tex1Pex10)	Protein kinase	HotSpot™		
PKN2/PRK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
PKN3/PRK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
Plasma Kallikrein	Protease	Fluorescence-based		
Plasmin	Protease	Fluorescence-based		
PLK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PLK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
PLK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PLK4/SAK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
PNMT	Methyltransferase	SPR		Yes
Podoplanin			Flow Cytometry	
Poly(ADP-ribose) glycohydrolase	PARP	SPR		
PP1A	Phosphatase	Fluorescence-based		
PP1B	Phosphatase	Fluorescence-based		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
PP2A alpha/PPP2R1A Complex	Phosphatase	Fluorescence-based		
PP2C alpha	Phosphatase	Fluorescence-based		
PP2C gamma	Phosphatase	Fluorescence-based		
PPAC (ACP1/LMW-PTP-A)	Phosphatase	Fluorescence-based		
PPAC (ACP1/LMW-PTP-B)	Phosphatase	Fluorescence-based		
PPARgamma	Nuclear Receptor	InVEST		
PRDM9	Methyltransferase	Radiometric HotSpot™		Yes
PRKAA2	Protein kinase		NanoBRET	
PRKX	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
PRMT1	Methyltransferase	Radiometric HotSpot™; SPR		Yes
PRMT3	Methyltransferase	Radiometric HotSpot™		Yes
PRMT4	Methyltransferase	Radiometric HotSpot™		Yes
PRMT5 (C449S)/MEP50	Methyltransferase	Radiometric HotSpot™; FlashPlate		Yes
PRMT5/MEP50	Methyltransferase	Radiometric HotSpot™; FlashPlate; SPR	NanoBRET	Yes
PRMT6	Methyltransferase	Radiometric HotSpot™		
PRMT7	Methyltransferase	Radiometric HotSpot™		Yes
PRMT8	Methyltransferase	Radiometric HotSpot™		Yes
Progesterone PR	Nuclear Receptor	InVEST	InVEST - Agonist/ Antagonist	
Proteinase A	Protease	Fluorescence-based		
Proteinase K	Protease	Fluorescence-based		
PTEN	Phosphatase	Fluorescence-based		
PTGDR	GPCR	LinkLight™		
PTGDR2	GPCR	LinkLight™		
PTGER1	GPCR	LinkLight™		
PTGER2	GPCR	LinkLight™		
PTGER3	GPCR	LinkLight™		
PTGER4	GPCR	LinkLight™		
PTH1R	GPCR	LinkLight™		
PTPN1/PTP1B-CD	Phosphatase	Fluorescence-based		
PTPN1/PTP1B-FL	Phosphatase	Fluorescence-based		
PTPN11/SHP2 (E76K)-FL	Phosphatase	Fluorescence-based		
PTPN11/SHP2-CD	Phosphatase	Fluorescence-based		
PTPN11/SHP2-FL	Phosphatase	Fluorescence-based; SPR		Yes
PTPN12/PTP-PEST	Phosphatase	Fluorescence-based		
PTPN2/TC-PTP	Phosphatase	Fluorescence-based		
PTPN6/SHP1	Phosphatase	Fluorescence-based		
PTPN7/LC-PTP	Phosphatase	Fluorescence-based		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
PTPRB	Phosphatase	Fluorescence-based		
PTPRC/CD45	Phosphatase	Fluorescence-based		
PTPRF/LAR	Phosphatase	Fluorescence-based		
PTPRJ/CD148	Phosphatase	Fluorescence-based		
PXR	Nuclear receptor	Luciferase Reporter		
PYK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
RAF1	Protein kinase	HotSpot™		
RAF1 (R391W)	Protein kinase	HotSpot™		
RAF1 YDYD	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
RAF1 YDYD (GST-HIS-tag)	Protein kinase	ADP-Glo		
RARalpha	Nuclear Receptor		InVEST	
rDHODH	Nucleotide metabolism	Fluorescence-based		
Renin	Protease	Fluorescence-based		
RET	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
RET (A883F)	Protein kinase	HotSpot™		
RET (E732K)	Protein kinase	HotSpot™		
RET (E762Q)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (G691S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (G810C)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (G810R)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (G810S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (G810S/M918T)	Protein kinase	HotSpot™		
RET (L730I)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (L730M)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (L790F)	Protein kinase	HotSpot™		
RET (M918T)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
RET (R749T)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (R813Q)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (R912P)	Protein kinase	HotSpot™		
RET (S891A)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (S904A)	Protein kinase	HotSpot™		
RET (S904F)	Protein kinase	HotSpot™		
RET (V738A)	Protein kinase	HotSpot™		
RET (V778I)	Protein kinase	HotSpot™		
RET (V804E)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (V804L)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
RET (V804L)-KIF5B	Protein kinase	HotSpot™		
RET (V804M)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
RET (V804M)-KIF5B	Protein kinase	HotSpot™		
RET (V804M/G810S)	Protein kinase	HotSpot™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
RET (Y791F)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (Y806C)	Protein kinase	HotSpot™		
RET (Y806H)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET (Y806N)	Protein kinase	HotSpot™		
RET-BCR	Protein kinase	HotSpot™		
RET-CCDC6 (PTC1)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RET-KIF5B (Kex15Rex14)	Protein kinase	HotSpot™		
RET-NCOA4 (PTC3)	Protein kinase	HotSpot™		
RET-PRKAR1A (PTC2)	Protein kinase	HotSpot™		
rHDAC6	HDAC	Fluorescence-based		
RIOK2	Protein kinase		NanoBRET	
RIPK1	Protein kinase	ADP-Glo	NanoBRET	
RIPK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
RIPK3	Protein kinase	HotSpot™		
RIPK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
RIPK5	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
ROCK	Protein kinase		NanoBRET	
ROCK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; InVEST	NanoBRET	
ROCK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET	Yes
RON/MST1R	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET; CPA	Yes
ROS/ROS1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
ROS1 (1883-2347)	Protein kinase		NanoBRET	
ROS1 (F2004C)	Protein kinase	HotSpot™		
ROS1 (F2004I)	Protein kinase	HotSpot™		
ROS1 (G2032R)	Protein kinase	HotSpot™		
ROS1 (G2101A)	Protein kinase	HotSpot™		
ROS1 (G2101C)	Protein kinase	HotSpot™		
ROS1 (L2086F)	Protein kinase	HotSpot™		
ROS1-GOPC	Protein kinase	HotSpot™		
ROS1-TPM3	Protein kinase	HotSpot™		
RSK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
RSK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
RSK2 (I416V)	Protein kinase	HotSpot™	NanoBRET	
RSK2 (L608F)	Protein kinase	HotSpot™	NanoBRET	
RSK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
RSK4	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
RXFP4	GPCR	LinkLight™		
S1PR1	GPCR	LinkLight™		
S1PR2	GPCR	LinkLight™		
S1PR3	GPCR	LinkLight™		

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
S1PR4	GPCR	LinkLight™		
S1PR5	GPCR	LinkLight™		
S6K	Protein kinase	ADP-Glo		
SARS-CoV-2 Mpro	Protease	Fluorescence-based		Yes
SARS-CoV-2 PLpro	Protease	Fluorescence-based		
SBK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
SBK3	Protein kinase		NanoBRET	
SENP1	Ubiquitin-proteasome	Fluorescence-based		
SENP2	Ubiquitin-proteasome	Fluorescence-based		
Serotonin 5-HT1A	GPCR	InVEST		
Serotonin 5-HT1B	GPCR	InVEST		
Serotonin 5-HT2A	GPCR	InVEST; LinkLight™	InVEST - Agonist/ Antagonist	
Serotonin 5-HT2B	GPCR	InVEST	InVEST - Agonist/ Antagonist	
Serotonin 5-HT3	Ion Channel	InVEST		
Serotonin 5-HT6	GPCR	InVEST		
Serotonin SERT	Transporter	InVEST		
SET1B	Methyltransferase	Radiometric HotSpot™		Yes
SET7/9	Methyltransferase	Radiometric HotSpot™		Yes
SET8	Methyltransferase	Radiometric HotSpot™		Yes
SETD2	Methyltransferase	Radiometric HotSpot™; SPR		Yes
SETDB1	Methyltransferase	Radiometric HotSpot™		
SGK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
SGK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
SGK3/SGKL	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
SIK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
SIK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
SIK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
SIRT1	Sirtuin	Fluorescence-based		Yes
SIRT2	Sirtuin	Fluorescence-based		Yes
SIRT3	Sirtuin	Fluorescence-based		Yes
SIRT5	Sirtuin	Fluorescence-based		Yes
SLK/STK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
SMARCA2a bromodomain	Bromodomain	HTRF		Yes
SMARCA2a-His	Bromodomain	ThermoShift		Yes
SMARCA2b-His	Bromodomain	AlphaScreen; ThermoShift	SPR	Yes
SMARCA4-His	Bromodomain	ThermoShift; AlphaScreen		Yes
SMYD2	Methyltransferase	Radiometric HotSpot™		Yes
SMYD3	Methyltransferase	Radiometric HotSpot™		Yes
SNARK/NUAK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
SNK	Protein kinase	ADP-Glo		
SNRK	Protein kinase	HotSpot™	NanoBRET	
SOS1	RAS-related	SPR		Yes
SP100-GST	Bromodomain	ThermoShift		Yes
SP100-His	Bromodomain	ThermoShift		Yes
SP110c-GST	Bromodomain	ThermoShift		Yes
SP140-GST	Bromodomain	ThermoShift		Yes
SP140-His	Bromodomain	ThermoShift; AlphaScreen		Yes
SP140L-GST	Bromodomain	ThermoShift		Yes
SP140L-His	Bromodomain	ThermoShift; AlphaScreen		Yes
SPHK1	Lipid kinase	ADP-Glo		
SPHK2	Lipid kinase	ADP-Glo		
SRMS	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
SRPK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
SRPK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
SSTK/TSSK6	Protein kinase	HotSpot™		
STK16	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
STK17B	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	
STK21/CIT	Protein kinase	HotSpot™		
STK22D/TSSK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
STK25/YSK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
STK32A	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
STK32B	Protein kinase	<sup>33</sup> PanQinase™		
STK32b/YANK2	Protein kinase	HotSpot™; NanoBRET		
STK32c/YANK3	Protein kinase			
STK33	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
STK35	Protein kinase	HotSpot™; InVEST	NanoBRET	
STK36	Protein kinase		NanoBRET	
STK38/NDR1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
STK38L/NDR2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
STK39/STLK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
SUV39H1	Methyltransferase	Radiometric HotSpot™		Yes
SUV39H2	Methyltransferase	Radiometric HotSpot™		Yes
SUV420H1-tv2	Methyltransferase	Radiometric HotSpot™		Yes
SYK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
SYK aa356-635	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
TACE	Protease	Fluorescence-based		
TAF1-1-GST	Bromodomain	ThermoShift		Yes
TAF1-2-GST	Bromodomain	ThermoShift		Yes
TAF1-2-His	Bromodomain	AlphaScreen		Yes
TAF1L-1	Bromodomain	ThermoShift		Yes
TAF1L-2	Bromodomain	ThermoShift		Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
TAF1L-Tndm-GST	Bromodomain	ThermoShift		Yes
TAK1	Protein kinase	HotSpot™		
TAK1-TAB1	Protein kinase	ADP-Glo		
TAOK1	Protein kinase	HotSpot™		
TAOK2/TAO1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
TAOK3/JIK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
TBK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TCR β			Flow Cytometry	
TCR			Flow Cytometry	
TEC	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
TESK1	Protein kinase	HotSpot™	NanoBRET	
TESK2	Protein kinase	HotSpot™		
TGFBR2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
Thrombin Alpha	Protease	InVEST		
TIE1	Protein kinase		NanoBRET	
TIE2 (A1124V)	Protein kinase	HotSpot™	NanoBRET	
TIE2 (P883A)	Protein kinase	HotSpot™	NanoBRET	
TIE2 (R849W)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TIE2 (R915C)	Protein kinase	HotSpot™		
TIE2 (Y1108F)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TIE2 (Y897C)	Protein kinase	HotSpot™	NanoBRET	
TIE2 (Y897H)	Protein kinase	HotSpot™		
TIE2 (Y897H/R915C)	Protein kinase	HotSpot™		
TIE2 (Y897S)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TIE2/TEK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TIGIT			Flow Cytometry	
TIM-3			Flow Cytometry	
TLK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TLK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TMPRSS11D	Protease	Fluorescence-based		
TMPRSS2	Protease	Fluorescence-based		
TNF-α			Flow Cytometry	
TNIK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		
TNK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	Yes
TNK2	Protein kinase		NanoBRET	
TNNI3K	Protein kinase		NanoBRET	
tPA	Protease	Fluorescence-based		
TPMT	Methyltransferase	SPR		Yes
TRIM24	Bromodomain	ThermoShift		Yes
TRIM28	Bromodomain	ThermoShift		Yes
TRIM33α	Bromodomain	ThermoShift		Yes
TRIM33b-His	Bromodomain	ThermoShift		Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
TRIM66	Bromodomain	ThermoShift		Yes
TRKA	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; InVEST	NanoBRET	Yes
TRKA (A608D)	Protein kinase	HotSpot™		
TRKA (F589L)	Protein kinase	HotSpot™		
TRKA (G595R)	Protein kinase	HotSpot™		
TRKA (G595R/A608D)	Protein kinase	HotSpot™		
TRKA (G595R/G667A)	Protein kinase	HotSpot™		
TRKA (G595R/G667C)	Protein kinase	HotSpot™		
TRKA (G595R/G667S)	Protein kinase	HotSpot™		
TRKA (G595R/L657M)	Protein kinase	HotSpot™		
TRKA (G667A)	Protein kinase	HotSpot™		
TRKA (G667C)	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TRKA (G667S)	Protein kinase	HotSpot™		
TRKA (L657M)	Protein kinase	HotSpot™		
TRKA-TFG	Protein kinase	HotSpot™		
TRKA-TPM3	Protein kinase	HotSpot™		
TRKA-TPR	Protein kinase	HotSpot™		
TRKB	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TRKC	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
TRKC (G623E)	Protein kinase	HotSpot™		
TRKC (G623R)	Protein kinase	HotSpot™		
TRKC (G623R/L686M)	Protein kinase	HotSpot™		
TRKC (G696A)	Protein kinase	HotSpot™		
TRKC (L686M)	Protein kinase	HotSpot™		
TRPM7/CHAK1	Protein kinase	HotSpot™		
Trypsin	Protease	Fluorescence-based		
Tryptase alpha/beta-1	Protease	Fluorescence-based		
Tryptase g1	Protease	Fluorescence-based		
TSF1	Protein kinase	ADP-Glo		
TSK2	Protein kinase	ADP-Glo		
TSSK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
TSSK3/STK22C	Protein kinase	HotSpot™; ADP-Glo		
TSSK4/STK22E	Protein kinase	HotSpot™		
TTBK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
TTBK1 aa1-480	Protein kinase	<sup>33</sup> PanQinase™; ADP-Glo		Yes
TTBK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
TTK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
TXK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
TYK1/LTK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
TYK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
TYK2 (JH1 domain)	Protein kinase	HotSpot™	NanoBRET	
TYK2 (JH2 domain)	Protein kinase	HotSpot™	NanoBRET	Yes
TYK2 JH1-JH2	Protein kinase	<sup>33</sup> PanQinase™		
TYK2 JH2	Protein kinase	Probe-displacement		
TYRO3/SKY	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
UCHL1	Ubiquitin-proteasome	Fluorescence-based		
UCHL3	Ubiquitin-proteasome	Fluorescence-based		
UCHL5	Ubiquitin-proteasome	Fluorescence-based		
UHRF1 Full length	PHD; TDR; SRA	ThermoShift		Yes
UHRF1-[PHD]	PHD	ThermoShift		Yes
UHRF1-[PHD]-His	PHD	AlphaScreen		Yes
UHRF1-[SRA]	SRA	ThermoShift		Yes
UHRF1-[TDR]-His	TDR	AlphaScreen; ThermoShift		Yes
UHRF1-[TDR-PHD]	PHD; TDR	ThermoShift		Yes
UHRF1-[TDR-PHD]-His	PHD; TDR	AlphaScreen		Yes
UHRF1-His Full length	PHD; TDR; SRA	AlphaScreen		Yes
ULK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ULK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
ULK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
Urokinase	Protease	Fluorescence-based		
USP2	Ubiquitin-proteasome	Fluorescence-based		
USP4	Ubiquitin-proteasome	Fluorescence-based		
USP5	Ubiquitin-proteasome	Fluorescence-based		
USP7	Ubiquitin-proteasome	Fluorescence-based		
USP8	Ubiquitin-proteasome	Fluorescence-based		
USP9X	Ubiquitin-proteasome	Fluorescence-based		
USP10	Ubiquitin-proteasome	Fluorescence-based		
USP11	Ubiquitin-proteasome	Fluorescence-based		
USP13	Ubiquitin-proteasome	Fluorescence-based		
USP14	Ubiquitin-proteasome	Fluorescence-based		
USP15	Ubiquitin-proteasome	Fluorescence-based		
USP20	Ubiquitin-proteasome	Fluorescence-based		
USP25	Ubiquitin-proteasome	Fluorescence-based		
USP28	Ubiquitin-proteasome	Fluorescence-based		
USP30	Ubiquitin-proteasome	Fluorescence-based		
Vasopressin V1A	GPCR		InVEST - Agonist/ Antagonist	
VHL:eloB:eloC		Fluorescence Polarization; PROTAC; SPR		
VHL:eloB:eloC::Brd4-1		HTRF; PROTAC		
VHL	Ubiquitin-proteasome	PROTAC	NanoBRET	
Viability Markers			Flow Cytometry	
VRK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes

Target	Protein Family	Biochemical/Biophysical	Cell-based	Protein Available
VRK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
WEE1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo; Probe-displacement	NanoBRET	Yes
WEE2	Protein kinase	HotSpot™	NanoBRET	
WNK1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
WNK2	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
WNK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		
XIAP	Apoptosis-related pathway	Fluorescence Polarization		Yes
YES/YES1	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo	NanoBRET	Yes
YES1 (T348I)	Protein kinase	HotSpot™		
YSK4/MAP3K19	Protein kinase	HotSpot™	NanoBRET	
YTHDC1	Bromodomain	HTRF		
YTHDC2	Bromodomain	HTRF		
YTHDF1	Bromodomain	HTRF		
YTHDF2	Bromodomain	HTRF		
YTHDF2-YTH	Bromodomain	HTRF		
YTHDF3	Bromodomain	HTRF		
YTHDF3-YTH	Bromodomain	HTRF		
ZAK/MLTK	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™	NanoBRET	
ZAP70	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™; ADP-Glo		Yes
ZAP70 (Y319F)	Protein kinase	HotSpot™		
ZIPK/DAPK3	Protein kinase	HotSpot™; <sup>33</sup> PanQinase™		

# Cell-based Assay Services



We offer a variety of tumor-cell based assays for testing therapeutic efficacy to support anti-cancer drug discovery. Most of our cellular assays are high-throughput compatible and can be customized according to your specific requirements. We also offer data mining solutions for identification or confirmation of the mode of action of your compound.

In addition to phenotypical assays, we offer cell-based assays of specific targets such as kinases and epigenetic proteins as well as GPCRs, ion channels, and nuclear receptors. If you cannot find a suitable cell assay for your research needs, please get in touch to discuss the option of developing a custom-tailored cell-based assay service with our scientists.

Cell Line	Disease	Tissue	Species	Available Assays	CVCL Accession Nr.
J82	Bladder carcinoma	Bladder	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0359
SJSA-1	Osteosarcoma	Bone	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_1697
U-87MG	Glioblastoma	Brain	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0022
MCF-7	Invasive ductal carcinoma	Breast (pleural effusion)	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0031
DLD-1	Colon adenocarcinoma	Colon	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0248
HCT 116	Colorectal carcinoma	Colon	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0291
HCT 15	Colon adenocarcinoma	Colon	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0292
HT-1080	Fibrosarcoma	Connective Tissue	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0317
A-498	Renal cell carcinoma	Kidney	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_1056
A-549	Lung adenocarcinoma	Lung	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0023
MCAS	Ovarian mucinous cystadenocarcinoma	Ovary	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_3020
A-375	Amelanotic melanoma	Skin	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0132
Hs 746.T	Gastric adenocarcinoma	Stomach (Leg Muscle Met)	Human	Proliferation; 3D ProLiFiler; ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0333
Hela	Human papillomavirus-related endocervical adenocarcinoma	Uterus, Cervix	Human	Proliferation; 3D ProLiFiler, ProLiFiler <sup>160</sup> ; Soft Agar; 3D Spheriod; Migration	CVCL_0030

**Over 300 cell lines available**

Please inquire for more information about our cell-based assays and to access a full list of our current cell lines.

# InVEST Safety Panel Screening Services



Safety screening at Reaction Biology can be performed with our In Vitro Evaluation of Safety and Toxicity (InVEST) panel to investigate your compound's off-target effects on a large selection of targets.

- Screen compounds against targets that may cause adverse drug reactions in humans including receptors, transporters, enzymes, and ion channels
- Panel includes more than 100 clinically relevant targets from over 10 target families for broad coverage of potential adverse drug effects

In addition to our InVEST Safety Screening Panel, we have established in vitro safety assays for compound screening against an assortment of targets involved in toxicity in humans. Available assay formats include enzymatic assays, biochemical binding assays, and radioligand binding assays. A cell-based functional safety panel is also available.

We regularly establish more targets for our InVEST Panel. Please contact us if your target is not on the list below.

## InVEST Panels

Reaction Biology's InVEST platform delivers tiered safety screening panels (18–77 targets) with functional assays where mechanism matters, kinases profiled at physiological 1mM ATP, and data in 10 business days.

Target	Target Family	InVEST 18	InVEST44	InVEST59	InVEST77	PDE	CYP
Acetylcholinesterase	Other Enzymes	x	x		x		
Adenosine A2A	GPCR		x	x	x		
Adrenergic $\alpha$ 1A	GPCR	x	x		x		
Adrenergic $\alpha$ 2A	GPCR		x	x	x		
Adrenergic $\beta$ 1	GPCR		x	x	x		
Adrenergic $\beta$ 2	GPCR	x	x		x		
Androgen (AR)	Nuclear Receptor		x	x	x		
ATM	Kinase			x	x		
Aurora A	Kinase			x	x		
Aurora B	Kinase			x	x		
BRD4	Bromodomain			x	x		
Cannabinoid CB1	GPCR	x	x		x		
Cannabinoid CB2	GPCR		x	x	x		
Cathepsin D	Protease			x	x		
Cav1.2	Ion Channel	x	x		x		
Cholecystokinin CCK1	GPCR		x	x	x		
Cholecystokinin CCK2	GPCR			x	x		
c-KIT	Kinase			x	x		
COX-1	Cyclooxygenase		x	x	x		
COX-2	Cyclooxygenase		x	x	x		
CYP1A2	Cytochrome P450						x
CYP2A6	Cytochrome P450						x
CYP2B6	Cytochrome P450						x
CYP2C8	Cytochrome P450						x
CYP2C9	Cytochrome P450						x

Target	Target Family	InVEST 18	InVEST44	InVEST59	InVEST77	PDE	CYP
CYP2D6	Cytochrome P450						x
CYP2E1	Cytochrome P450						x
CYP2J2	Cytochrome P450						x
CYP2C19	Cytochrome P450						x
CYP3A4	Cytochrome P450						x
CYP3A5	Cytochrome P450						x
CYP4A11	Cytochrome P450						x
CYP4F3B	Cytochrome P450						x
CYP19A	Cytochrome P450						x
Dopamine D1	GPCR	x	x		x		
Dopamine D2L	GPCR			x	x		
Dopamine D2S	GPCR		x				
Dopamine D3	GPCR			x	x		
Dopamine DAT	Transporter	x	x		x		
Endothelin ETA	GPCR		x	x	x		
EGFR	Kinase			x	x		
Estrogen- $\alpha$ (ER $\alpha$ )	Nuclear Receptor			x	x		
FGFR1	Kinase			x	x		
FMS (VEGFR1)	Kinase			x	x		
GABA(A) $\alpha$ 1 $\beta$ 2 $\gamma$ 2L	Ion Channel				x		
GABA(A) (Central BDZ)	Ion Channel	x	x				
GAT1	Transporter			x	x		
Glucocorticoid (GR)	Nuclear Receptor		x	x	x		
GPBA	GPCR			x	x		
GSK3B	Kinase			x	x		
hERG (Kv11.1)	Ion Channel	x	x		x		
Histamine H1	GPCR	x	x		x		
Histamine H2	GPCR		x	x	x		
IR	Kinase			x	x		
KDR (VEGFR2)	Kinase			x	x		
Kv7.1	Ion Channel			x	x		
LCK TK	Kinase	x	x		x		
MAO-A	Monoamine oxidase		x	x	x		
MAO-B	Monoamine oxidase		x	x	x		
Mas-related GPCR	GPCR			x	x		
MKK7	Kinase			x	x		
Muscarinic M1	GPCR		x	x	x		
Muscarinic M2	GPCR		x	x	x		
Muscarinic M3	GPCR	x	x		x		
nAChR $\alpha$ 1	Ion Channel			x	x		
nAChR $\alpha$ 4 $\beta$ 2	Ion Channel		x				
Nav1.5	Ion Channel	x	x		x		
NK3 Receptor	GPCR			x	x		

Target	Target Family	InVEST 18	InVEST44	InVEST59	InVEST77	PDE	CYP
NMDA	Ion Channel		x	x	x		
Norepinephrine NET	Transporter	x	x		x		
Opioid delta	GPCR		x	x	x		
Opioid kappa	GPCR		x	x	x		
Opioid mu	GPCR	x	x		x		
Paracaspase	Protease			x	x		
PDE1A	Phosphodiesterase				x	x	
PDE1B	Phosphodiesterase				x	x	
PDE1C	Phosphodiesterase				x	x	
PDE2A	Phosphodiesterase				x	x	
PDE3A	Phosphodiesterase	x	x		x	x	
PDE3B	Phosphodiesterase				x	x	
PDE4A	Phosphodiesterase				x	x	
PDE4B	Phosphodiesterase				x	x	
PDE4C	Phosphodiesterase				x	x	
PDE4D	Phosphodiesterase				x	x	
PDE4D2	Phosphodiesterase	x	x		x	x	
PDE5A	Phosphodiesterase				x	x	
PDE7A	Phosphodiesterase				x	x	
PDE7B	Phosphodiesterase				x	x	
PDE8A	Phosphodiesterase				x	x	
PDE8B	Phosphodiesterase				x	x	
PDE9A	Phosphodiesterase				x	x	
PDE10A	Phosphodiesterase				x	x	
PKD1	Kinase			x	x		
PI3Kg (p110g)	Kinase			x	x		
Progesterone (PR)	Nuclear Receptor			x	x		
PTK2	Kinase			x	x		
Retinoic acid- $\alpha$ (RARA)	Nuclear Receptor			x	x		
ROCK1	Kinase			x	x		
ROCK2	Kinase			x	x		
Serotonin 5-HT1A	GPCR		x	x	x		
Serotonin 5-HT1B	GPCR		x	x	x		
Serotonin 5-HT2A	GPCR		x	x	x		
Serotonin 5-HT2B	GPCR	x	x		x		
Serotonin 5-HT3	Ion Channel		x	x	x		
Serotonin 5-HT6	Serotonin 5-HT3			x	x		
Serotonin SERT	Transporter		x	x	x		
SRC	Kinase			x	x		
STK35	Kinase			x	x		
TRKA	Kinase			x	x		
Vasopressin V1A	GPCR		x	x	x		



# In Vitro Immuno-Oncology Assays

In addition to our in vivo tumor models, we offer a full suite of immuno-oncology related assays. Reaction Biology's immuno-oncology platform consists of cell-based and biochemical (cell-free) assay formats developed to test new drug candidates, both small molecules and biologics, for their potency to modulate the immune system and ultimately reduce tumor growth. Many of our services can be custom tailored to better serve individual project needs.

## Tumor Killing Assays

Our killing assays enable testing of drugs that enhance or facilitate tumor cell killing by the following cell types.

- T cell-mediated killing assays
- NK cell-mediated killing assays
- Monocyte-mediated killing assays

## Immune Cell Assays

Our suite of cell-based assays for immune cell characterization enables researchers to quantify the immune-modulatory action of drug candidates by investigating the immune cell's activation status, markers, and proliferation. We offer the following assays.

- T cell assays
- Immune Checkpoint Assays
- NK cell assays
- Macrophage cell assays

## Immuno-Oncology Biochemical Assay Services

We offer biochemical immune checkpoint assays to quantify the potency and binding of novel immunotherapeutic small molecules and biologics. Targets include SIRPA (CD172a), CTLA4 (CD152), LAG3 (CD223), and PD-1.

## Ex Vivo Immunophenotyping

New immunotherapeutic drug candidates can be tested in our animal testing unit on cell line-derived or tissue-derived mouse tumor models to understand their immune-modulatory potency. We offer the following immunophenotyping options.

- Flow cytometry
- Histology
- Multiplex protein quantification assays

Biochemical Assay Formats	Effector Cell Phenotype & Function	Cytotoxicity Co-culture	In vivo Models
<p><b>Binding Kinetics</b></p> <p>SPRI analysis Competition Selectivity</p> <p><b>Functional Binding Assays</b></p> <p><b>Thermal Shift</b></p> <p><b>Custom Assays</b></p>	<p><b>Effector Cells</b></p> <p>T cell proliferation, activation T cell or NK phenotyping Cytokine determination Antibody Dependent Cell Cytotoxicity (ADCC) Complement Dependent Cell Cytotoxicity (CDC) Immune checkpoint inhibitors</p> <p><b>Monocytes/Macrophages</b></p> <p>Differentiation Phagocytosis</p>	<p><b>Target Killing Assays</b></p> <p>2D Luciferase-based 2D Flow-based 3D Luciferase-based</p>	<p><b>Humanized Syngeneic Xenograft</b></p>

# In Vivo Models



Reaction Biology offers a comprehensive portfolio of in vivo services. Our integrated testing platform includes services for all steps of the drug discovery process to support the development of your preclinical candidate pipeline.

## Xenograft Models

Human xenograft tumor models are the most frequently used in vivo models for the evaluation of the therapeutic effects of novel anti-cancer drug candidates. We offer subcutaneous, subQperior™, orthotopic, and metastasis models.

## In Vivo Hollow Fiber Model

The in vivo hollow fiber model is an efficient and economic screening approach which is used to select the compound with the best in vivo activity ("compound screening") or identify a suitable tumor cell line for in vivo efficacy studies ("tumor model screening").

## In Vivo Kinase Activity Models

Genetically engineered tumor models are well suited for the investigation of a single driver of tumor growth such as an overexpressed or constitutively expressed kinase.

## Immuno-Oncology Tumor Models

- CART Cell Therapy Platform
- Humanized Xenograft Models
- Humanized Syngeneic Models
- Syngeneic Mouse Models
- SubQperior™ Panel Screen
- Mouse-derived Isograft Tumor Models (MDI)

Assay location is noted with a superscript: Hershey (H), Freiburg (F).

Cell Line	Disease	Tissue	Species	In Vivo Models	CVCL Accession Nr.
3LL	Lewis lung carcinoma	Lung	Mouse	Subcutaneous <sup>H</sup>	CVCL_5653
4T1	Malignant neoplasms of the mouse mammary gland	Breast	Mouse	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H</sup> ; SubQperior_Orthotopic <sup>F</sup> ; Metastatic (Orthotopic; IV) <sup>F</sup>	CVCL_0125
786-O	Renal cell carcinoma	Kidney	Human	Subcutaneous <sup>H</sup> ; Orthotopic <sup>F</sup>	CVCL_1051
A-172	Glioblastoma	Brain	Human	Orthotopic <sup>F</sup>	CVCL_0131
A20	B cell lymphoma	Blood	Mouse	Subcutaneous <sup>H</sup> ; SubQperior <sup>F</sup>	CVCL_1940
A2058	Melanoma	Skin (Lymph Node Met)	Human	Subcutaneous <sup>F</sup>	CVCL_1059
A2780	Ovarian endometrioid adenocarcinoma	Ovary	Human	Subcutaneous <sup>H,F</sup> ; Orthotopic <sup>H</sup>	CVCL_0134
A-375	Amelanotic melanoma	Skin	Human	Subcutaneous <sup>F</sup>	CVCL_0132

Cell Line	Disease	Tissue	Species	In Vivo Models	CVCL Accession Nr.
A-431	Squamous cell carcinoma	Skin	Human	Subcutaneous <sup>H</sup> ; Subcutaneous/ SubQperior <sup>F</sup>	CVCL_0037
A-549	Lung adenocarcinoma	Lung	Human	Subcutaneous <sup>H,F</sup> ; Metastatic (IV) <sup>F</sup>	CVCL_0023
AB12	Mesothelioma	Lung (Ascites)	Mouse	Subcutaneous <sup>F*</sup> ; SubQperior (IM) <sup>F</sup>	CVCL_4405
ACHN	Papillary renal cell carcinoma	Kidney (Pleural effusion)	Human	Subcutaneous <sup>H</sup>	CVCL_1067
AsPC-1	Pancreatic ductal adenocarcinoma	Pancreas (Ascites)	Human	Subcutaneous <sup>H,F</sup> ; Orthotopic <sup>F</sup> ; Subcutaneous/ SubQperior <sup>F</sup>	CVCL_0152
B16-F0	Melanoma	Skin	Mouse	Subcutaneous <sup>H</sup>	CVCL_0604
B16-F10	Melanoma	Skin	Mouse	Subcutaneous <sup>H,F</sup> ; SubQperior (IM) <sup>F</sup> ; Orthotopic <sup>H,F</sup> ; Metastatic (IV) <sup>H,F</sup> ; Metastatic (IC) <sup>H</sup>	CVCL_0159
BT-474	Invasive ductal carcinoma	Breast	Human	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H</sup>	CVCL_0179
BxPC-3	Pancreatic ductal adenocarcinoma	Pancreas	Human	Subcutaneous <sup>H,F</sup> ; Orthotopic <sup>F</sup>	CVCL_0186
C1498	Acute myeloid leukemia, lymphoblast	Blood	Mouse	Subcutaneous <sup>H</sup> ; Metastatic (IV) <sup>H</sup>	CVCL_3494
C26	Colon adenocarcinoma	Colon	Mouse	Subcutaneous <sup>H</sup>	CVCL_0240
C32	Melanoma	Skin	Human	Subcutaneous <sup>H</sup>	CVCL_1097
C8161	Melanoma	Skin (Abdominal wall Met)	Human	Subcutaneous <sup>F</sup> ; Orthotopic <sup>H</sup>	CVCL_6813
C8161.9	Melanoma	Skin (Abdominal wall Met)	Human	Orthotopic <sup>H</sup>	CVCL_0196
CAL-27	Squamous cell carcinoma	Oral	Human	Subcutaneous <sup>F</sup>	CVCL_1107
Calu-3	Non-small-cell lung carcinoma	Lung (pleural effusion)	Human	Subcutaneous <sup>H,F</sup>	CVCL_0609
Calu-6	Lung adenocarcinoma	Lung (pleural effusion)	Human	Subcutaneous <sup>F</sup>	CVCL_0236
Clone M-3/ Cloudman S91	Melanoma	Skin	Mouse	Subcutaneous <sup>F*</sup> ; SubQperior (IM) <sup>F</sup>	CVCL_4512
COLO 201	Colorectal carcinoma	Colon	Human	Subcutaneous <sup>H</sup>	CVCL_1987
COLO 205	Colon adenocarcinoma	Colon (Ascites)	Human	Subcutaneous <sup>F</sup>	CVCL_0218
COLO 320DM	Colon adenocarcinoma	Colon	Human	Subcutaneous <sup>F</sup>	CVCL_0219
CT26.WT	Colon adenocarcinoma	Colon	Mouse	Subcutaneous <sup>H,F</sup> ; SubQperior (IM) <sup>F</sup> ; Orthotopic <sup>F</sup>	CVCL_7256

Cell Line	Disease	Tissue	Species	In Vivo Models	CVCL Accession Nr.
Detroit 562	Pharyngeal squamous cell carcinoma	Pharynx (pleural effusion)	Human	Subcutaneous <sup>H</sup>	CVCL_1171
DLD-1	Colon adenocarcinoma	Colon	Human	Subcutaneous <sup>H</sup>	CVCL_0248
E.G7-OVA	T lymphoblast	Blood (derivative of EL4)	Mouse	Subcutaneous <sup>H</sup> ; SubQperior <sup>F</sup>	CVCL_3505
EBC-1	Lung squamous cell carcinoma	Lung (Skin Met)	Human	Subcutaneous <sup>F</sup>	CVCL_2891
EFO-27	Ovarian mucinous papillary adenocarcinoma, metastatic site: Omentum	Ovary (Omentum Met)	Human	Subcutaneous <sup>H</sup>	CVCL_1192
EL4	T lymphoblast	Blood	Mouse	Subcutaneous <sup>H</sup>	CVCL_0255
EMT6	Breast carcinoma	Breast	Mouse	Subcutaneous <sup>H,F*</sup> ; SubQperior (Orthotopic) <sup>F</sup> ; Orthotopic <sup>H</sup> ; Metastatic <sup>F</sup>	CVCL_1923
EO771	Breast carcinoma	Breast	Mouse	Orthotopic <sup>H</sup>	CVCL_GR23
G361	Malignant melanoma	Skin	Human	Subcutaneous <sup>H</sup>	CVCL_1220
GL261	Glioblastoma	Brain	Mouse	Orthotopic <sup>H,F</sup> ; SubQperior <sup>F</sup>	CVCL_Y003
GP2d	Colon carcinoma	Colon	Human	Subcutaneous <sup>H</sup>	CVCL_2450
HC11-NeuT	Breast epithelial cell line transformed with NeuT (rat ErbB2 homolog)	Breast	Mouse	Orthotopic <sup>H</sup>	N/A
HCC1187	Breast ductal carcinoma	Breast	Human	Subcutaneous <sup>F</sup>	CVCL_1247
HCC1569	Ductal breast carcinoma	Breast	Human	Orthotopic <sup>F</sup>	CVCL_1255
HCT 116	Colorectal carcinoma	Colon	Human	Subcutaneous <sup>H,F</sup> ; Orthotopic <sup>F</sup> ; Metastatic <sup>H</sup>	CVCL_0291
Hela	Human papillomavirus-related endocervical adenocarcinoma	Uterus, Cervix	Human	Subcutaneous <sup>F</sup>	CVCL_0030
Hep 3B2.1-7	Childhood hepatocellular carcinoma	Liver	Human	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H</sup>	CVCL_0326
Hepa 1-6	Hepatocellular carcinoma	Liver	Mouse	Subcutaneous <sup>H</sup> ; SubQperior (IM) <sup>F</sup> ; Orthotopic <sup>H,F</sup>	CVCL_0327
HepG2	Childhood hepatoblastoma	Liver	Human	Orthotopic <sup>H</sup>	CVCL_0027
Hey	High grade ovarian serous adenocarcinoma	Ovary	Human	Subcutaneous <sup>H</sup>	CVCL_0297
HG-3	Chronic lymphocytic leukemia	Blood	Human	Subcutaneous <sup>F</sup>	CVCL_Y547
HL-60	Adult acute myeloid leukemia	Blood	Human	Subcutaneous <sup>F</sup>	CVCL_0002

Cell Line	Disease	Tissue	Species	In Vivo Models	CVCL Accession Nr.
Hs 746.T	Gastric adenocarcinoma	Stomach (Leg Muscle Met)	Human	Subcutaneous <sup>F</sup>	CVCL_0333
HT-1080	Fibrosarcoma	Connective Tissue	Human	SubQerior (IM) <sup>F</sup>	CVCL_0317
HT-144	Melanoma	Skin	Human	Subcutaneous <sup>F</sup>	CVCL_0318
HT-29	Colon adenocarcinoma	Colon	Human	Subcutaneous <sup>H,F</sup>	CVCL_0320
Huh-7	Adult hepatocellular carcinoma	Liver	Human	Subcutaneous <sup>H</sup> ; Metastatic (IV) <sup>H</sup> ; Metastatic (IC) <sup>H</sup>	CVCL_0336
HuP-T4	Pancreatic adenocarcinoma	Pancreas (Ascites)	Human	Subcutaneous <sup>H</sup>	CVCL_1300
HuTu 80	Duodenal adenocarcinoma	Duodenum/ Small Intestine	Human	Subcutaneous <sup>F</sup>	CVCL_1301
JIMT-1	Ductal breast carcinoma	Breast (pleural effusion)	Human	Orthotopic <sup>F</sup> ; Metastatic (IC) <sup>F</sup>	CVCL_2077
Karpas-299	Anaplastic large cell lymphoma	Blood	Human	Subcutaneous <sup>F</sup>	CVCL_1324
KPC-2838	Pancreatic cancer	Pancreas (Epithelial)	Mouse	Subcutaneous <sup>H</sup>	
KPC-6419	Pancreatic cancer	Pancreas (Epithelial)	Mouse	Subcutaneous <sup>H</sup>	
IK-2	Squamous cell lung carcinoma	Lung	Human	Subcutaneous <sup>H</sup>	CVCL_1377
LL/2 (LLC1)	Lewis lung carcinoma	Lung	Mouse	Subcutaneous <sup>H,F*</sup> ; SubQerior (IM) <sup>F</sup> ; Orthotopic <sup>F</sup> ; Metastatic <sup>F</sup>	CVCL_4358
LN-229	Glioblastoma	Brain	Human	Subcutaneous <sup>F</sup> ; Orthotopic <sup>H,F</sup>	CVCL_0393
LoVo	Colon adenocarcinoma	Colon	Human	Metastatic <sup>H</sup>	CVCL_0395
LP-1	Plasma cell myeloma	Blood	Human	Orthotopic <sup>H</sup>	CVCL_0012
LS174T	Colon adenocarcinoma	Colon	Human	Subcutaneous <sup>F</sup>	CVCL_1384
M109	Spontaneous murine lung carcinoma	Lung	Mouse	Subcutaneous <sup>H</sup>	CVCL_H602
MB-49	Urinary Bladder carcinoma	Bladder	Mouse	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H</sup> ; Metastatic (IV) <sup>H</sup> ; Metastatic (IC) <sup>H</sup>	CVCL_7076
MBT-2	Urinary Bladder carcinoma	Bladder	Mouse	Subcutaneous <sup>H</sup>	CVCL_4660
MC-38	Colon adenocarcinoma	Colon	Mouse	Subcutaneous <sup>H</sup>	CVCL_B288
MC38-CEA	Colon adenocarcinoma	Colon	Mouse	Subcutaneous <sup>F*</sup> ; SubQerior (IM) <sup>F</sup> ; Orthotopic <sup>F</sup>	CVCL_B288
MCF-7	Invasive ductal carcinoma	Breast (pleural effusion)	Human	Subcutaneous <sup>F</sup> ; Orthotopic <sup>H</sup>	CVCL_0031

Cell Line	Disease	Tissue	Species	In Vivo Models	CVCL Accession Nr.
MDA-MB-231	Breast adenocarcinoma	Breast (pleural effusion)	Human	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H,F</sup> ; Metastatic (IV) <sup>H,F</sup> ; Metastatic (IC) <sup>F</sup>	CVCL_0062
MDA-MB-468	Breast adenocarcinoma	Breast (pleural effusion)	Human	Orthotopic <sup>H</sup>	CVCL_0419
MIA PaCa-2	Pancreatic ductal adenocarcinoma	Pancreas	Human	Subcutaneous <sup>H,F</sup> ; Orthotopic <sup>H,F</sup>	CVCL_0428
MKN1	Gastric adenosquamous carcinoma	Stomach (Lymph Node met)	Human	Subcutaneous <sup>F</sup>	CVCL_1415
MKN45	Gastric adenocarcinoma	Stomach (Liver met)	Human	Subcutaneous <sup>F</sup>	CVCL_0434
MOLM-13	Adult Acute Myeloid Leukemia	Blood	Human	Subcutaneous <sup>F</sup> ; Metastatic (IV) <sup>F</sup>	CVCL_2119
MOLT-4	Adult T acute lymphoblastic leukemia	Blood	Human	Subcutaneous <sup>F</sup>	CVCL_0013
MV4-11	Childhood acute monocytic leukemia	Blood	Human	Subcutaneous <sup>F</sup> ; Metastatic (IV) <sup>F</sup>	CVCL_0064
NCIH1373	Lung adenocarcinoma	Lung	Human	Subcutaneous <sup>H</sup>	CVCL_1465
NCIH1437	Non-small cell lung cancer	Lung (pleural effusion)	Human	Subcutaneous <sup>F</sup>	CVCL_1472
NCIH292	Lung mucoepidermoid carcinoma	Lung (Lymph Node Met)	Human	Subcutaneous <sup>F</sup>	CVCL_0455
NCIH441	Lung papillary adenocarcinoma	Lung (pericardial effusion)	Human	Subcutaneous/SubQperior <sup>F</sup>	CVCL_1561
NCIH460	Lung large cell carcinoma	Lung (pleural effusion)	Human	Subcutaneous <sup>H,F</sup> ; Metastatic (IC) <sup>H</sup>	CVCL_0459
NCIH929	Plasma cell myeloma	Bone Marrow (pleural effusion)	Human	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H</sup>	CVCL_1600
OVCAR-3	Ovarian serous adenocarcinoma	Ovary (Ascites)	Human	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H</sup>	CVCL_0465
Pan02	Pancreatic ductal adenocarcinoma	Pancreas	Mouse	Subcutaneous <sup>H</sup> ; SubQperior (IM) <sup>F</sup> ; Orthotopic <sup>H,F</sup>	CVCL_D627
PANC-1	Pancreatic ductal adenocarcinoma	Pancreas	Human	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H,F</sup>	CVCL_0480
PC-3	Prostate carcinoma	Prostate (Bone Met)	Human	Subcutaneous <sup>H,F</sup> ; Orthotopic <sup>H,F</sup>	CVCL_0035
PC-9	Lung adenocarcinoma	Lung (Lymph Node Met)	Human	Subcutaneous <sup>F</sup>	CVCL_B260
PC3-M	Prostate carcinoma	Prostate	Human	Subcutaneous <sup>H</sup>	CVCL_9555
PLC/PRF/5	Adult hepatocellular carcinoma	Liver	Human	Subcutaneous <sup>H</sup> ; Orthotopic <sup>H</sup>	CVCL_0485
Raji	EBV-related Burkitt lymphoma	Bone Marrow	Human	Subcutaneous <sup>H</sup> ; Metastatic (IV) <sup>H</sup>	CVCL_0511

Cell Line	Disease	Tissue	Species	In Vivo Models	CVCL Accession Nr.
Ramos	Burkitt lymphoma	Ascites	Human	Metastatic (IV) <sup>H</sup>	CVCL_0597
RENCA	Kidney carcinoma	Kidney	Mouse	Subcutaneous <sup>H,F*</sup> ; SubQperior (IM) <sup>F</sup> ; Orthotopic <sup>F</sup>	CVCL_2174
RKO	Colorectal adenocarcinoma	Colon	Human	Subcutaneous <sup>H</sup>	CVCL_0504
RPMI-8226	Plasma cell myeloma	Blood	Human	Orthotopic <sup>H</sup>	CVCL_0014
SJSA-1	Osteosarcoma	Bone	Human	Subcutaneous <sup>F</sup>	CVCL_1697
SK-IMS-1	Leiomyosarcoma	Vulva	Human	Subcutaneous <sup>H</sup>	CVCL_0628
SK-OV-3	Ovarian serous cystadenocarcinoma	Ovary (Ascites)	Human	Subcutaneous <sup>H,F*</sup> ; Orthotopic <sup>H</sup> ; Orthotopic (Ascites) <sup>H</sup>	CVCL_0532
SNU-182	Adult hepatocellular carcinoma	Liver	Human	Subcutaneous <sup>H</sup>	CVCL_0090
Stew	Invasive moderately differentiated adenocarcinoma	Pancreas (Lymph Node Met)	Human	Subcutaneous <sup>H</sup>	
SU-DHL-6	Diffuse large B-cell lymphoma	Blood	Human	Subcutaneous <sup>F</sup>	CVCL_2206
SW480	Colon adenocarcinoma	Colon	Human	Subcutaneous <sup>H</sup>	CVCL_0546
SW620	Colon adenocarcinoma	Colon (Lymph Node Met)	Human	Subcutaneous/SubQperior <sup>F</sup> ; Orthotopic <sup>F</sup>	CVCL_0547
TC-1	Primary lung epithelial cells	Lung	Mouse	Subcutaneous <sup>H</sup>	CVCL_4699
THP-1	Childhood acute monocytic leukemia	Blood	Human	Subcutaneous <sup>F</sup>	CVCL_0006
U-118MG	Glioblastoma (Astrocytoma)	Brain	Human	Subcutaneous <sup>F</sup>	CVCL_0633
U-87MG	Glioblastoma	Brain	Human	Subcutaneous <sup>H,F*</sup> ; Orthotopic <sup>H,F</sup>	CVCL_0022
UACC-257	Melanoma	Skin	Human	Subcutaneous <sup>H</sup>	CVCL_1779
UM-UC-3	Bladder carcinoma	Bladder	Human	Orthotopic <sup>H</sup>	CVCL_1783
WiDr	Colorectal carcinoma	Colon	Human	Subcutaneous <sup>H</sup>	CVCL_2760

Metastatic (IC) = Metastasizing (intracardiac), Metastatic (IV) = Metastasizing (intravenous)

\* Other conditions may apply.

# Custom Services



In addition to our assays, cell lines and proteins, we also provide custom services which include custom protein synthesis, custom peptides, assay development, and cell-line development. We provide consistent end-to-end solutions and welcome projects of any size.

## Assay Development

Our scientists have created more than 2200 assays. Our outstanding assay development teams enable drug testing in custom-tailored biochemical, cellular, biophysical, and electrophysiological assay formats.

- Assay development and optimization/validation
- Enzyme testing, substrate testing, and activator/inhibitor testing

Detection Method	Custom Assays
Radiometric	<ul style="list-style-type: none"><li>• <math>^3\text{H}</math></li><li>• <math>^{33}\text{P}</math></li><li>• <math>^{32}\text{P}</math></li></ul>
Fluorescence-based	<ul style="list-style-type: none"><li>• AlphaLISA</li><li>• AlphaScreen</li><li>• Fluorescence intensity</li><li>• Fluorescence polarization</li><li>• FRET</li><li>• TR-FRET</li></ul>
Luminescence-based	<ul style="list-style-type: none"><li>• Bioluminescence, such as ADP-Glo and ATP bioluminescence-based assays</li><li>• Chemiluminescence, such as horseradish peroxidase (HRP) and alkaline phosphatase (AP) based assays</li></ul>
Biophysical	<ul style="list-style-type: none"><li>• Surface Plasmon Resonance</li><li>• Microscale Thermophoresis</li><li>• Isothermal Titration Calorimetry</li><li>• Thermal shift assay</li></ul>
Cell-based	<ul style="list-style-type: none"><li>• NanoBRET technology</li><li>• Calcium mobilization</li><li>• Second messenger detection</li><li>• Enzymatic activity via substrate detection by ELISA, Western blotting, or Glo-based assays</li><li>• TR-FRET-based competitive immunoassay</li><li>• Electrophysiologic readouts via patch clamp technique</li><li>• Gene expression quantification via luciferase reporter assays</li><li>• Flow cytometry</li></ul>

## Custom Protein Synthesis

Reaction Biology can assist you with producing proteins and assays for various target classes such as kinases, PARPs, DUBs, HSPs, RAS, proteases, phosphatases, and many more. Our expertise comprises expressing proteins and multimeric protein complexes in *E. coli*, insect, and mammalian cells. We offer small- or large-scale custom-tailored protein production to fit your research requirements.

Protein Production	Assay Name	
Expression Systems	<ul style="list-style-type: none"> <li>Bacterial: <i>E. coli</i></li> <li>Insect: SF9, SFX, and SF21</li> <li>Mammalian: CHO, HEK293</li> </ul>	
Tags	<ul style="list-style-type: none"> <li>GST</li> <li>HIS</li> <li>GST-HIS</li> <li>HALO-HIS</li> <li>SUMO-HIS</li> </ul>	<ul style="list-style-type: none"> <li>TXN-HIS</li> <li>Strep</li> <li>Nus</li> <li>Flag</li> <li>Additional tags are available</li> </ul>
Purification	<ul style="list-style-type: none"> <li>Affinity chromatography</li> <li>Ion exchange</li> <li>Hydrophobic</li> <li>Size exclusion</li> </ul>	
Modification	<ul style="list-style-type: none"> <li>Activation by autophosphorylation</li> <li>Activation by an upstream kinase</li> <li>Removal of tag</li> <li>Co-expression with co-factors</li> </ul>	<ul style="list-style-type: none"> <li>Mutations</li> <li>Biotinylation</li> <li>Fluorescent labeling</li> </ul>
QC Options	<ul style="list-style-type: none"> <li>SDS-PAGE</li> <li>Bradford quantification</li> <li>Mass Spectrometry</li> <li>Enzymatic activity assay</li> </ul>	

## Custom Peptides

Our state-of-the-art laboratories are equipped with synthesis systems for parallel peptide synthesis and microwave-assisted peptide synthesis. We employ specially developed continuous-flow synthesizers to rapidly and reliably determine the optimal synthetic route.

Tell us your peptide sequence and choose the quantity you require. We will deliver within two to three weeks. In urgent cases, we deliver within one week for an additional charge.

- Synthesis from 2 to 100 amino acids and beyond in length, quantities between 1 mg and 10 g
- HPLC & PEC purification with purities up to >98%
- Analysis by means of (U)HPLC and MALDI-MS or (LC-) ESI-MS

Modifications we can perform as part of peptide synthesis*	
Acetylation	Glycosylation
Azide-alkyne cycloaddition	Lipidation
Biotinylation	Methylation
Branched peptides	Non-proteinogenic amino acids and D-amino acids
Chelators	PEGylation
Conjugates	Phosphorylation
Cyclic modification	Stable isotopes
Fluorescent labeling	

\* Contact us to discuss additional custom modifications

## Stable Cell Line Development

We create custom cell lines stably expressing foreign proteins that serve many purposes including labeling cells to visualize their location and insertion of a gene of interest.

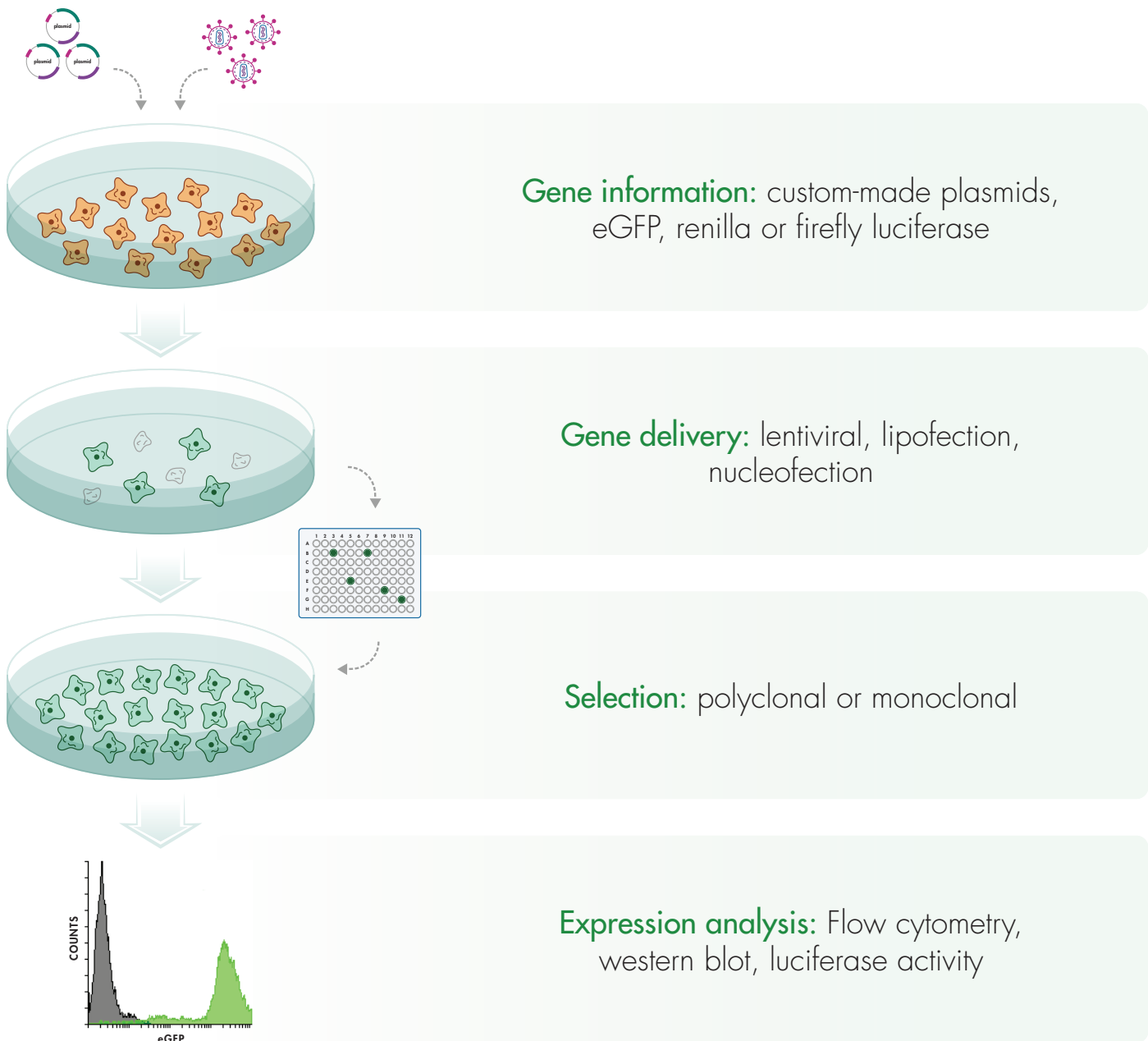
We offer two approaches for genetic modifications of cell lines:

- Standard transfection methods such as lipofection/nucleofection or  $\text{Ca}_2\text{PO}_4$ -transfection
- Lentiviral transduction allows for highly efficient genetic manipulation, not only of cell lines but also of primary cells and non-dividing cells

## Deliverables

- 2 million cells of newly generated cell lines (depending on licensing)
- Data sheet including protein expression analysis

## Procedure



# Services Overview

## Recombinant Proteins

- Kinase proteins
- Epigenetic proteins
- Substrates
- Custom-tailored protein production



## Biochemical Assays

- Kinases, Epigenetic Enzymes
- Protein: Protein Interaction assays
- Metabolic & Pathway
- Receptors & Channels



## Cell-Based Assays

- 2D and 3D proliferation assays
- Drug combination screening
- Migration assays
- Angiogenesis assay



## Biophysical Assays

- Surface Plasmon Resonance
- Thermal Shift Assay
- Isothermal Titration Calorimetry
- Microscale Thermophoresis



## In Vivo Pharmacology

- In Vivo Hollow Fiber Model
- Xenograft models
- Orthotopic models
- Metastasis models



## Safety & Toxicology

- In Vitro Safety Panel
- Cardiac Safety Panel
- Cytochrome P450
- Maximum-Tolerated Dose
- GLP Regulatory Toxicology



## Integrated Solutions

- Antibody-Drug Conjugates
- RAS Drug Discovery Services
- Targeted Protein Degradation Assays



## Biomarker Discovery

- Genetic biomarkers
- Protein biomarkers
- Immunophenotyping



## Immuno-Oncology

- In Vitro Killing Assays
- Syngeneic Mouse Models
- Proprietary Tumor Models
- Immunophenotyping



Let's Discover Together



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