BRD4-2 (GST) (Bromodomain containing protein 4, bromodomain 2)

**CATALOG NO.:** RD-11-158  **LOT NO.:**

**DESCRIPTION:** Human recombinant BRD4, bromodomain-2 (residues 349-460; Genbank Accession # NM_058243; MW = 40.1 kDa) expressed as an N-terminal GST-fusion protein in *E. coli*. BRD4, like other human members of the BET family of chromatin-binding proteins (BRD2, BRD3, BRDT), comprises two bromodomains (see reviews\(^1\),\(^2\)), protein modules that bind ε-N-acetyllsine residues\(^3\),\(^4\). The ubiquitously expressed BRD4 functions as a transcriptional regulator\(^2\) with roles in cell cycle progression\(^5\),\(^6\) and has recently been shown to be an atypical kinase that can phosphorylate RNA Pol II\(^7\). Recent structural studies have shown that BRD4-1\(^8\), like the bromodomain-1 of fellow BET family protein BRDT\(^9\), can bind simultaneously to two acetyllysine residues with appropriate spacing and sequence context, for example a histone H4 peptide acetylated at lysines 5 and 8 (H4K5AcK8Ac)\(^8\). Chromosomal translocations that produce BRD4-NUT fusion proteins are implicated in causation of a rare and aggressive cancer, NUT midline carcinoma\(^10\). Selective inhibitors of BRD4/BET family bromodomains\(^11\)-\(^13\) are showing promise as possible therapeutic agents for cancer\(^11\),\(^14\)-\(^16\) and inflammation\(^12\).

**PURITY:** >95% by SDS-PAGE

**SUPPLIED AS:** _µg/µL_ in 20 mM Tris/HCl, pH 7.5, 150 mM NaCl, 1.0 mM TCEP, 10% glycerol (v/v) as determined by OD\(_{280}\).

**STORAGE:** -70°C. Thaw quickly and store on ice before use. The remaining, unused, undiluted protein should be snap frozen, for example in a dry/ice ethanol bath or liquid nitrogen. Minimize freeze/thaws if possible, but very low volume aliquots (<5 µl) or storage of diluted enzyme is not recommended.

**REFERENCES:**


**Coomassie blue stained SDS-PAGE (4-12% acrylamide) of 3 µg of RBC BRD4-2 (GST).** MW markers (left lane) are, from top, 220, 160, 120, 100, 90, 80, 70, 60, 50, 40, 30, 25, 20, 15, 10 kDa.

**Differential Scanning Fluorimetry of RBC BRD4-2 (GST) in Presence or Absence of (+)-JQ1.** Thermal denaturation of BRD4-2 (GST) is detected (CFX384™ Touch thermal cycler, ‘FRET’ channel; Bio-Rad) by increased binding and fluorescence of the dye SYPRO® Orange (Life Technologies). Addition of the BET bromodomain inhibitor/ligand (+)-JQ1 (10 µM) stabilizes the protein folding and shifts the T\(_m\) (inflection point) from 48.5°C to 50°C. Duplicate runs, with and without JQ1, are displayed (4 curves).

This product is NOT intended for therapeutic or diagnostic use in animals or in humans.

Reaction Biology Corp., One Great Valley Parkway, Malvern PA 19355
Tel. 877-347-2368  Fax 610-722-0246  sales@reactionbiology.com
www.reactionbiology.com