

Product: BRK, Active

Catalog #: 02-2007

Amount: 5 µg

Product Description

Recombinant full-length human BRK was expressed by baculovirus in Sf9 insect cells using an N-terminal GST tag. The gene accession number is [NM_005975](#).

Gene Aliases

PTK6

Formulation

Recombinant protein stored in 50mM Tris-HCl, pH 7.5, 150mM NaCl, 0.25mM DTT, 0.1mM EGTA, 0.1mM EDTA, 0.1mM PMSF, 25% glycerol.

Storage and Stability

Store product at -20°C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles.

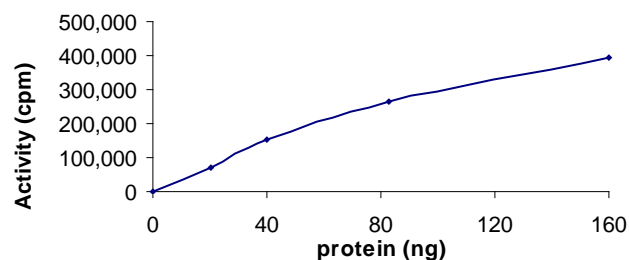
Scientific Background

BRK is a member of the non-receptor tyrosine kinases (PTKs) that contains an amino terminal SH3 and SH2 domain as well as the catalytic domain (1). BRK expression is low or undetectable in normal mammary tissue and benign lesions. However, approximately two-thirds of breast tumors express appreciable levels, and 27% of tumors over express BRK by fivefold or more (2).

References

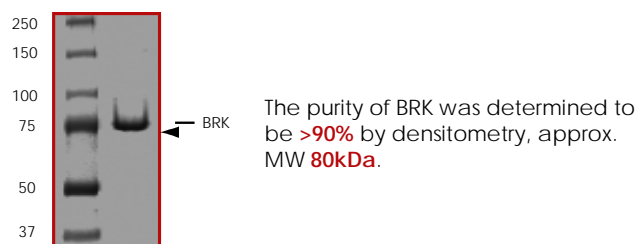
1. Mitchell, P.J. et al: Cloning and characterisation of cDNAs encoding a novel non-receptor tyrosine kinase, brk, expressed in human breast tumours. *Oncogene*. 1994 Aug;9(8):2383-90.
2. Mitchell, P.J. et al: Characterisation and chromosome mapping of the human non receptor tyrosine kinase gene, brk. *Oncogene*. 1997 Sep 18;15(12):1497-502. Erratum in: *Oncogene* 1998 Jul 9;17(1):129.

Specific Activity



The specific activity of BRK was determined to be **133 nmol /min/mg** as per activity assay protocol.

Purity



BRK, Active

Full-length recombinant protein expressed in Sf9 cells

Catalog Number 02-2007
Quantity 5µg
Specific Activity 133 nmol/min/mg
Specific Lot Number A360-1

Purity >90%
Format 5µg in 50µl
Concentration 0.1µg/µl
Stability 1yr At -70°C from date of shipment
Storage & Shipping Store product at -70°C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, avoid repeated handling and multiple freeze/thaw cycles. Product shipped on dry ice.

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Activity Assay Protocol

Reaction Components

Active Kinase (Catalog #: 02-2007)

Active BRK (0.1µg/µl) diluted with Kinase Dilution Buffer (Catalog #: K24-09) and assayed as outlined in sample activity plot. (Note: these are suggested working dilutions and it is recommended that the researcher perform a serial dilution of Active BRK for optimal results).

Kinase Dilution Buffer, pH 7.2 (Catalog #: K24-09)

Kinase Assay Buffer II (Catalog #: K02-09) diluted at a 1:4 ratio (5X dilution) with 50 ng/µl BSA solution.

Kinase Assay Buffer II, pH 7.2 (Catalog #: K02-09)

Buffer components: 25mM MOPS, 12.5mM β-glycerol-phosphate, 20mM , 25mM , 5mM EGTA, 2mM EDTA. Add 0.25mM DTT to Kinase Assay Buffer prior to use.

[³²P]-ATP Assay Cocktail

Prepare 250µM [³²P]-ATP Assay Cocktail in a designated radioactive working area by adding the following components: 150µl of 10mM ATP Stock Solution (Catalog #: A50-09), 100µl [³²P]-ATP (1mCi/100µl), 5.75ml of Kinase Assay Buffer (Catalog #: K02-09). Store 1ml aliquots at –.

10mM ATP Stock Solution (Catalog #: A50-09)

Prepare ATP stock solution by dissolving 55mg of ATP in 10ml of Kinase Assay Buffer (Catalog #: K02-09). Store 200µl aliquots at –.

Substrate

Poly (Glu:Tyr, 4:1) synthetic peptide substrate diluted in distilled to a final concentration of 1mg/ml.

Assay Protocol

- Step 1. Thaw [³²P]-ATP Assay Cocktail in shielded container in a designated radioactive working area.
- Step 2. Thaw the Active BRK, Kinase Assay Buffer, Substrate and Enzyme Dilution Buffer on ice.
- Step 3. In a pre-cooled microfuge tube, add the following reaction components bringing the initial reaction volume up to 20µl:
 - Component 1. 10µl of diluted Active BRK (Catalog #02-2007).
 - Component 2. 10µl of 1mg/ml stock solution of substrate
- Step 4. Set up the blank control as outlined in step 3, excluding the addition of the substrate. Replace the substrate with an equal volume of distilled H₂O.
- Step 5. Initiate the reaction by the addition of 5µl [³²P]-ATP Assay Cocktail bringing the final volume up to 25µl and incubate the mixture in a water bath at 30°C for 15 minutes.
- Step 6. After the 15 minute incubation period, terminate the reaction by spotting 20µl of the reaction mixture onto individual pre-cut strips of phosphocellulose P81 paper.
- Step 7. Air dry the pre-cut P81 strip and sequentially wash in a 1% phosphoric acid solution (dilute 10ml of phosphoric acid and make a 1L solution with distilled H₂O) with constant gentle stirring. It is recommended that the strips be washed a total of 3 intervals for approximately 10 minutes each.
- Step 8. Count the radioactivity on the P81 paper in the presence of scintillation fluid in a scintillation counter.
- Step 9. Determine the corrected cpm by removing the blank control value (see Step 4) for each sample and calculate the kinase specific activity as outlined below.

Calculation of [³²P]-ATP Specific Activity (SA) (cpm/pmol)

Specific activity (SA) = cpm for 5µl [³²P]-ATP / pmoles of ATP (in 5µl of a 250µM ATP stock solution, i.e., 1250 pmoles)

Kinase Specific Activity (SA) (pmol/min/µg or nmol/min/mg)

Corrected cpm from reaction / [(SA of ³²P-ATP in cpm/pmol)*(Reaction time in min)*(Enzyme amount in µg or mg)]*(Reaction Volume) / (Spot Volume)]

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