

EPHA1,	Active
--------	--------

Recombinant human protein expressed in Sf9 cells

Catalog # E13-18BG Lot # P1626-6

Product Description

Recombinant human EPHA1 (613-892) was expressed by baculovirus in Sf9 insect cells using an N-terminal GST tag. The gene accession number is <u>NM 005232</u>.

Gene Aliases

EPH; EPHT; EPHT1

Formulation

Recombinant protein stored in 50mM Tris-HCl, pH 7.5, 150mM NaCl, 10mM glutathione, 0.1mM EDTA, 0.25mM DTT, 0.1mM PMSF, 25% glycerol.

Storage and Stability

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.

Scientific Background

EPHA1 is a member of the Eph family of receptor tyrosine kinases that have been implicated in mediating developmental events, particularly in the nervous system (1). Receptors in the Eph subfamily typically have a single kinase domain and an extracellular region containing a Cys-rich domain and 2 fibronectin type III repeats. EPHA1 seems to be a marker of the differentiated normal epidermis an its downregulation in nonmelanoma skin cancer may contribute to carcinogenesis of these very frequent human tumors. EPHA1 represents a new potential prognostic marker and therapeutic target in nonmelanoma skin cancer (2).

References

- 1. Kullander, K. et al: Mechanisms and functions of Eph and ephrin signalling. Nat Rev Mol Cell Biol. 2002 Jul;3(7):475-86.
- Hafner, C. et al: Expression profile of Eph receptors and ephrin ligands in human skin and downregulation of EphA1 in nonmelanoma skin cancer. Mod Pathol. 2006 Oct;19(10):1369-77.

Specific Activity



The specific activity of EPHA1 was determined to be 20 nmol/min/mg as per activity assay protocol.

Purity



The purity of EPHA1 was determined to be >95% by densitometry, approx. MW 55kDa.

EPHA1, Active

Recombinant protein expressed in Sf9 cells

Catalog # Specific Activity Specific Lot # Purity Concentration Stability Storage & Shipping

E13-18BG 20 nmol/min/mg P1626-6 >95% 0.1 µg/µl 1yr at -70°C from date of shipment 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.

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601 or by email: <u>orders@signalchem.com</u> <u>www.signalchem.com</u>



Activity Assay Protocol

Reaction Components

Active Kinase (Catalog #: E13-18BG)

Active EPHA1 $(0.1\mu g/\mu l)$ diluted with Kinase Dilution Buffer IV (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 EPHA1 for optimal results).

Kinase Dilution Buffer IV (Catalog #: K24-09)

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

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

Buffer components: 25mM MOPS, pH 7. 2, 12.5mM β -glycerol-phosphate, 20mM MgC1₂, 12.5mM MnC1₂, 5mM EGTA, 2mM EDTA. Add 0.25mM DTT to Kinase Assay Buffer prior to use.

[³³P]-ATP Assay Cocktail

Prepare 250µM [³³P]-ATP Assay Cocktail in a designated radioactive working area by adding the following components: 150µl of 10mM ATP Stock Solution (Catalog #: A50-09), 100µl [³³P]-ATP (1mCi/100µl), 5.75ml of Kinase Assay Buffer II (Catalog #: K02-09). Store 1ml aliquots at -20°C.

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

Prepare ATP stock solution by dissolving 55mg of ATP in 10ml of Kinase Assay Buffer II (Catalog #: K02-09). Store 200 μ l aliquots at -20°C.

Substrate (Catalog #: P61-58)

Poly (4:1 Glu, Tyr) synthetic peptide substrate diluted in distilled H_2O to a final concentration of 1 mg/ml.

Assay Protocol

- Step 1. Thaw [³³P]-ATP Assay Cocktail in shielded container in a designated radioactive working area.
- Step 2. Thaw the Active EPHA1, Kinase Assay Buffer, Substrate and Kinase 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 EPHA1 (Catalog #E13-18BG)

- **Component 2.** 5µl of 1mg/ml stock solution of substrate (Catalog #P61-58)
- Component 3. 5µl of distilled H₂O
- 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 5 μl [³³P]-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 20 μl 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 [P³³]-ATP Specific Activity (SA) (cpm/pmol)

Specific activity (SA) = cpm for 5 µl [³³P]-ATP / pmoles of ATP (in 5 µl of a 250 µM ATP stock solution, i.e., 1250 pmoles)

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

Corrected cpm from reaction / [(SA of ³³P-ATP in cpm/pmol)*(Reaction time in min)*(Enzyme amount in µg or mg)]*[(Reaction Volume) / (Spot Volume)]

To place your order, please contact us by phone 1-(604)-232-4600, fax 1-604-232-4601 or by email: <u>orders@signalchem.com</u> <u>www.signalchem.com</u>

FOR IN VITRO RESEARCH PURPOSES ONLY. NOT INTENDED FOR USE IN HUMAN OR ANIMALS.