

Fyn A, Active

Full-length recombinant protein expressed in Sf9 cells

Catalog # F15-10G

Lot # E036-2

Product Description

Full-length recombinant human Fyn isoform A was expressed by baculovirus in Sf9 insect cells using an N-terminal GST tag. The gene accession number is [NM_002037](#).

Gene Aliases

SLK, SYN, MGC45350

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

Fyn A (Fyn isoform A) is a member of the SRC tyrosine kinase oncogene family showing high homology to YES1, FGR and SRC. Fyn has been shown to phosphorylate Dab1, an intracellular adaptor protein that interacts with amyloid precursor protein (APP) and apoE receptor 2 (apoEr2) (1). The interaction of Fyn and Dab1 regulates the phosphorylation, trafficking, and processing of APP and apoEr2. Fyn expression has been shown to be significantly increased in Chronic Myelogenous Leukemia (CML) (2). Knockdown of Fyn with shRNA slows leukemia cell growth, inhibits clonogenicity, and leads to increased sensitivity to imatinib.

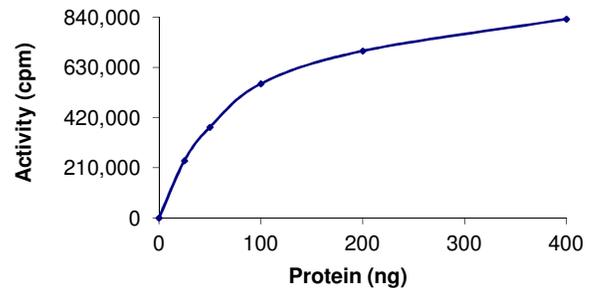
References

- Hoe, H.S. et al: Fyn modulation of Dab1 effects on amyloid precursor protein and ApoE receptor 2 processing. *J. Biol. Chem.* 2008 Mar 7;283(10):6288-99.
- Ban, K. et al: BCR-ABL1 mediates up-regulation of Fyn in chronic myelogenous leukemia. *Blood*, 2008 Mar 1;111(5):2904-8.

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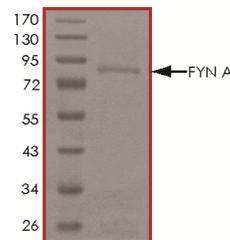
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Specific Activity



The specific activity of Fyn A was determined to be **195 nmol /min/mg** as per activity assay protocol.

Purity



The purity of Fyn A was determined to be **>95%** by densitometry. Approx. MW **85kDa**.

Fyn A, Active

Full-length recombinant human protein expressed in Sf9 cells

| | |
|--------------------|---|
| Catalog # | F15-10G |
| Specific Activity | 195 nmol/min/mg |
| Lot # | E036-2 |
| Purity | >95% |
| 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. |

Activity Assay Protocol

Reaction Components

Active Kinase (Catalog #: F15-10G)

Active Fyn A (0.1µg/µl) 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 Fyn A 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 50 ng/µl BSA solution.

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

Buffer components: 25mM MOPS, pH 7.2, 12.5mM β-glycerol-phosphate, 20mM MgCl₂, 25mM MnCl₂, 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 200µl aliquots at -20°C.

Substrate (Catalog #: P61-58)

Poly (4:1 Glu, Tyr) synthetic peptide substrate diluted in distilled H₂O to a final concentration of 1mg/ml.

Assay Protocol

- Step 1.** Thaw [³³P]-ATP Assay Cocktail in shielded container in a designated radioactive working area.
- Step 2.** Thaw the Active Fyn A, 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 Fyn A (Catalog #F15-10G)
 - Component 2.** 5µl of 1mg/ml stock solution of substrate (Catalog #P61-58)
 - Component 3.** 5µl distilled H₂O (4°C)
- 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 [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 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 [³³P]-ATP Specific Activity (SA) (cpm/pmol)

Specific activity (SA) = cpm for 5µl [³³P]-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 ³³P-ATP in cpm/pmol)*(Reaction time in min)*(Enzyme amount in µg or mg)]*[(Reaction Volume) / (Spot Volume)]

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