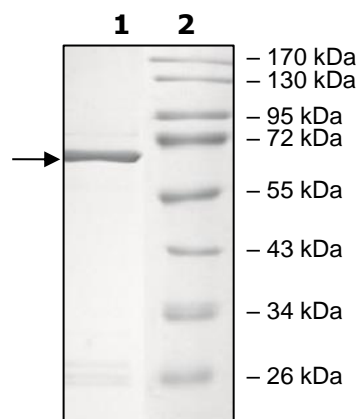


Product Information

Description:	Recombinant mouse ALK2 (R206H) (activin receptor-like kinase-2), encompassing amino acids 147-end with an R206H mutation. This construct contains an N-terminal GST-tag. The recombinant protein was affinity purified and is active.
Background:	ALK2 (activin receptor-like kinase 2), also known as ACVR1 or activin A receptor type 1, is a bone morphogenic protein receptor involved in BMP (bone morphogenic protein) signal transduction. ALK2 forms complexes with BMPs, which then recruit proteins from the SMAD family (Mothers against decapentaplegic homolog). It participates in the development and regulation of the skeletal system, heart, brain and reproductive system. ALK2 dysfunction can lead to fibrodysplasia ossificans progressive (FOP), where the BMP/SMAD pathway is hyper-activated and mesenchymal stem cells differentiate along the osteogenic pathway and transform into bone all over the body. Mutations in ALK2 were also found in cancer, such as diffuse intrinsic pontine glioma (DIPG) and child brain cancer. ALK2 inhibitors have been studied in pre-clinical models of FOP and DIPG and showed great promise. Further studies into ALK2 will deepen our understanding of its functions, find new inhibitors and new therapeutic avenues for patients with ALK-linked cancer.
Species:	Mouse
Construct:	ALK2 (R206H) (GST-147-end) (Mouse)
Mutation:	R206H
Concentration:	0.10 mg/ml
Expression System:	Sf9
Purity:	≥90% (Purity calculation does not include co-purifying Glutathione-binding proteins.)
Format:	Aqueous buffer solution.
Formulated In:	50 mM Tris-HCl, pH 7.5, 150 mM NaCl, 10 mM Glutathione, 0.1 mM EDTA, 0.25 mM DTT, 25% glycerol
MW:	67 kDa
Uniprot:	P37172-1
Stability:	At least 6 months at -80°C.
Storage:	-80°C
Instructions for Use:	Thaw on ice and gently mix prior to use. DO NOT VORTEX. Perform a quick spin before opening. Aliquot into small volumes and flash freeze for long term storage. Avoid multiple freeze/thaw cycles.
Specific Activity:	3.0 pmol/min/μg
Assay Conditions:	ALK2 (R206H) activity was measured by using the casein protein substrate diluted in distilled water to a working concentration of 1 mg/ml, in the ADP Glo™ Kinase Assay kit (Promega #V9101). Reaction was initiated by mixing increasing amounts of ALK2 (R206H) with 25 μM ATP in 40 mM Tris-HCl, pH 7.4, 20 mM MgCl ₂ , 0.1 mg/ml BSA prepared with 50 μM DTT and substrate at a final concentration of 200 μg/ml. After a 40-minute incubation at room temperature, the reaction was terminated by addition of ADP-Glo™ Reagent, followed by a subsequent 40-minute incubation at room temperature. Kinase Detection Reagent was added, and the reaction was incubated for another 30 minutes at ambient temperature. Detection of luminescence was measured using the Luminescence Module Protocol on GloMax®-Multi Microplate Multimode Reader. The Specific Activity was calculated as follows: (Corrected activity, RLU) / [(Specific activity from ADP in RLU/pmol) * (Reaction time in min) * (Enzyme amount in μg or mg)]. Corrected RLU was calculated by subtracting the blank value from all the values. The blank was determined from a “no enzyme” sample by replacing the enzyme solution with an equal volume of Dilution Buffer IX (1x).
Applications:	Useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.

Quality Control Data

4-20% SDS-PAGE Coomassie Staining



Specific Activity

