abcam

Product datasheet

Recombinant human NEK2 protein ab42599

Description

Product name	Recombinant human NEK2 protein
Biological activity	100 U/mg. One unit is defined as the amount of enzyme that will phosphorylate 1 nmol of myelin basic protein (MBP) substrate per minute at pH 7.4 and 30C. Assay buffer: 50 mM HEPES, pH 7.4, 3 mM MgCl2, 3 mM MnCl2, 1 mM DTT, 3 uM Naorthovanadate, 0.5 mM ATP, 0.3 mg/ml MBPsubstrate, and 0.2 ug/ml NEK2.
Purity	> 70 % SDS-PAGE. Affinity purified.
Expression system	Baculovirus infected Sf9 cells
Protein length	Full length protein
Animal free	No
Nature	Recombinant
Species	Human

Specifications

Our **Abpromise guarantee** covers the use of **ab42599** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	Inhibition Assay
Form	Liquid
Additional notes	Expressed in a Baculovirus infected Sf9 cell expression system.

Preparation and Storage

Stability and Storage	Shipped on Dry Ice. Upon delivery aliquot. Store at -80°C. Avoid freeze / thaw cycle. pH: 8.00 Constituents: 0.0462% (R*,R*)-1,4-Dimercaptobutan-2,3-diol, 0.395% Tris HCl, 0.05% Tween, 40% Glycerol (glycerin, glycerine), 0.87% Sodium chloride This product is an active protein and may elicit a biological response in vivo, handle with caution.

General Info

Function	Protein kinase that is involved in mitotic regulation. Integral component of the mitotic spindle-assembly checkpoint which is necessary for proper chromosome segregation during metaphase-anaphase transition. Required for association of MAD2L1 to kinetochore. Phosphorylates SGOL1. May have a role at the G2-M transition. May also play a role in meiosis. Isoform 1 but not isoform 2 appears to play a role in centrosome splitting. Isoform 1 phosphorylates and activates NEK11 in G1/S-arrested cells. Isoform 2, which is not present in the nucleolus, does not.
Tissue specificity	Isoform 1 and isoform 2 are expressed in peripheral blood T-cells and a wide variety of transformed cell types.
Sequence similarities	Belongs to the protein kinase superfamily. NEK Ser/Thr protein kinase family. NIMA subfamily. Contains 1 protein kinase domain.
Developmental stage	Accumulates throughout S phase and shows maximal levels in late G2. This expression pattern is highly reminiscent of that of A and B cyclins. Isoform 1 and isoform 2 expression is low in the G1 phase and increases in the S/G2 phases. Isoform 1 is absent from cells arrested in the G2/M prometaphase. Isoform 2 remains present in cells arrested in the G2/M prometaphase.
Post-translational modifications	It is unsure whether Thr-170 or Ser-171 is phosphorylated.
Cellular localization	Cytoplasm. Predominantly cytoplasmic; Nucleus > nucleolus. Has a nucleolar targeting/ retention activity via a coiled-coil domain at the C-terminal end and Nucleus. Chromosome > centromere. Chromosome > centromere > kinetochore. Co-localizes with SGOL1 and MAD1L1 at the kinetochore. Not associated with kinetochore in the interphase but becomes associated with it upon the breakdown of the nuclear envelope.