



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human EYA2 Protein
Catalog Number: hTF-1996
Manufacturer: LD Biopharma, Inc.

Introduction

Human eyes absent homolog 2 (EYA2) gene encodes a member of the eyes absent (EYA) family of proteins. EYA2 protein may be post-translationally modified and may play a role in eye development. EYA2 functions both as protein phosphatase and as transcriptional co-activator for SIX1, and probably also for SIX2, SIX4 and SIX5. Tyrosine phosphatase that dephosphorylates 'Tyr-142' of histone H2AX (H2AXY142ph) and promotes efficient DNA repair via the recruitment of DNA repair complexes containing MDC1. 'Tyr-142' phosphorylation of histone H2AX plays a central role in DNA repair and acts as a mark that distinguishes between apoptotic and repair responses to genotoxic stress. Its function as histone phosphatase may contribute to its function in transcription regulation during organogenesis. EYA2 plays an important role in hypaxial muscle development together with SIX1 and DACH2; in this it is functionally redundant with EYA.

Full-length human EYA2 cDNA (537aa) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. It was expressed in E.coli as inclusion bodies. The final product was refolded using our unique "temperature shift inclusion body refolding" technology and chromatographically purified.

Gene Symbol: EYA2 (EAB1)
Accession Number: NP_005235.3
Species: Human
Size: 10 µg / Vial
Composition: 0.1 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Blevins MA, et al., *The SIX1-EYA transcriptional complex as a therapeutic target in cancer*. Expert Opin. Ther. Targets 19 (2), 213-225 (2015)



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Vincent A, et al., *Epigenetic silencing of EYA2 in pancreatic adenocarcinomas promotes tumor growth*. *Oncotarget* 5 (9), 2575-2587 (2014)

Fu J, et al., miR-30a suppresses breast cancer cell proliferation and migration by targeting Eya2. *Biochem. Biophys. Res. Commun.* 445 (2), 314-319 (2014)

Applications

1. May be used for in vitro EYA2 mediated dephosphorylation of histone H2AX gene in gene transcription regulation/ DNA repair pathway study for cancer cells by intracellular delivery of this protein with protein delivery reagent such as ProFectin reagent kit.
2. May be used for mapping protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein for cancer prognosis, such as in Ewing sarcoma chemotherapy monitoring.
5. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFVELVISPSTLVNSDCLDKLKFNRADAAVWTLSDRQ
GITKSAPLRVSQ LFSRSCPRVLP RQPSTAMAAYGQTQYSAGIQQATPYTAYPPPAQAYGIPSYS
IKTEDSLNHSPGQSGFLSYGSSFSTSP TGGQSPYTYQM HGTTGFYQGGNGLGNAAGFGSVHQDYP
SYPGFPPQSQYPQYYGSSYNPPYVPASSICPSPLSTSTYVLQEASHNVPNQSSESLAGEYNTHNG
PSTPAKEGDTDRPHRASDGKLRGRSKRSDPSPAGDNEIERVFWDLDETI I I I FHSLLTGTFAS
RYGKDTTTSVRIGLMMEEMIFNLADTHLFFNDLEDCDQIHVDDVSSDDNGQDLSTYNFSADGFH
SSAPGANLCLGSGVHGGVDWMRKLAFRYRRVKEMYNTYKNNVGGGLIGTPKRETWLQLRAELEAL
TDLWLTHSLKALNLI NSRPNCVNVLVTTTQLIPALAKVLLYGLGSVFP I ENIYSATKTGKESCF
ERIMQRFGRKAVYVVI GDGVEEEQGAKKHNMFPWRISCHADLEALRHALELEYL