

Human BLVRB / biliverdin reductase B Protein (His Tag)

Catalog Number: 13151-H07E



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

BVRB; FLR; HEL-S-10; SDR43U1

Protein Construction:

A DNA sequence encoding the human BLVRB (P30043) (Ala 2-Gln 206) was expressed, with a polyhistidine tag at the N-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 97 % as determined by SDS-PAGE

Endotoxin:

Please contact us for more information.

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met

Molecular Mass:

The recombinant human BLVRB consisting of 216 amino acids and has a calculated molecular mass of 23.5 kDa. It migrates as a kDa band in SDS-PAGE under reducing conditions as predicted.

Formulation:

Lyophilized from sterile PBS, 0.02% Brij35, 10% glycerol, pH 7.5

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

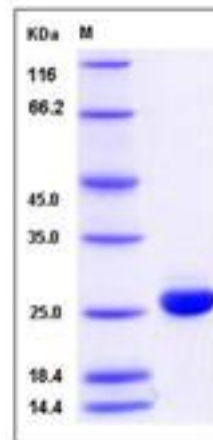
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Biliverdin reductase (hBVR) is a serine/threonine kinase that catalyzes reduction of the heme oxygenase (HO) activity product, biliverdin, to bilirubin. BVR consists of an N-terminal dinucleotide-binding domain (Rossmann-fold) and a C-terminal domain that contains a six-stranded β -sheet that is flanked on one face by several α -helices. The C-terminal and N-terminal domains interact extensively, forming the active site cleft at their interface. Biliverdin reductase (BVR) catalyzes the last step in heme degradation by reducing the γ -methene bridge of the open tetrapyrrole, biliverdin IX α , to bilirubin with the concomitant oxidation of a β -nicotinamide adenine dinucleotide (NADH) or β -nicotinamide adenine dinucleotide phosphate (NADPH) cofactor. It is now recognized that human BVR (hBVR) is a dual-specificity kinase (Ser / Thr and Tyr) upstream activator of the insulin/insulin growth factor-1 (IGF-1) and mitogen-activated protein kinase (MAPK) signaling pathways. Human BVR (hBVR) is essential for MAPK-extracellular signal-regulated kinase (ERK)1/2 (MEK)-eukaryotic-like protein kinase (Elk) signaling and has been identified as the cytoplasm-nuclear heme transporter of ERK1/2 and hematin, the key components of stress-responsive gene expression.

References

- 1.Kapitulnik J, *et al.* (2009) Pleiotropic functions of biliverdin reductase: cellular signaling and generation of cytoprotective and cytotoxic bilirubin. *Trends in Pharmacological Sciences.* 30(3): 129-37.
- 2.Ahmad Z, *et al.* (2002) Human Biliverdin Reductase Is a Leucine Zipper-like DNA-binding Protein and Functions in Transcriptional Activation of Heme Oxygenase-1 by Oxidative Stress. *The Journal of Biological Chemistry.* 277: 9226-32.
- 3.Whitby FG, *et al.* (2002) Crystal Structure of a Biliverdin IX Reductase Enzyme-Cofactor Complex. *Journal of Molecular Biology.* 319(5): 1199-210.

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Fax :+86-10-51029969 • Tel:+86-400-890-9989 • <http://www.sinobiological.com>