Human R-Spondin 1 / RSPO1 Protein (His Tag)

Catalog Number: 11083-H08H

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

CRISTIN3; R-Spondin 1; RSPO

Protein Construction:

A DNA sequence encoding the human RSPO1 (NP_001033722.1) (Met 1-Ala 263) was expressed fused with a polyhistidine tag at the C-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: ≥ 95 % as determined by SDS-PAGE, ≥ 95 % as determined by SEC-HPLC, ≥ 95% as determined by SEC-MALS(Routinely tested).

Bio Activity:

1. Measured by its binding ability in a functional ELISA. Immobilized human RSPO1 at 20 μg/ml (100 μl/well) can bind human LIMPII with a linear range of 32-800 ng/ml.
2. Measured by its binding ability in a functional ELISA. Immobilized human RSPO1 at 20 μg/ml (100 μl/well) can bind mouse CD36 with a linear range of 6.4-800 ng/ml.
3. Measured by its ability to induce activation of ßcatenin response in a Topflash Luciferase assay using HEK293T human embryonic kidney cells. The ED50 for this effect is typically 20-200 ng/mL in the presence of 2 ng/mL recombinant mouse Wnt3a.
4. Loaded Recombinant Human LRP-6 Protein, His & AVI Tag, Avi-tag Biotinylated (Cat. No. 11968-H49H-B) on SA Biosensor, can bind Recombinant Human R-Spondin 1 / RSPO1 Protein, His Tag (Cat. No. 11083-H08H) with an affinity constant of 4.25 nM as determined in BLI assay (Sartorius Octet RED384) (QC tested).

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Predicted N terminal: Ser 21

Molecular Mass:

The secreted recombinant human RSPO1 comprises 254 amino acids with a predicted molecular mass of 28.2 kDa. As a result of glycosylation, rhRSPO1 migrates as an approximately 42 kDa band in SDS-PAGE under reducing conditions.The molecular weight of this protein is around 40.1kDa verified by SEC-MALS (Routinely tested).

Formulation:

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

Stability & Storage:
Samples are stable for twelve months from date of receipt at -20℃ to -80℃.

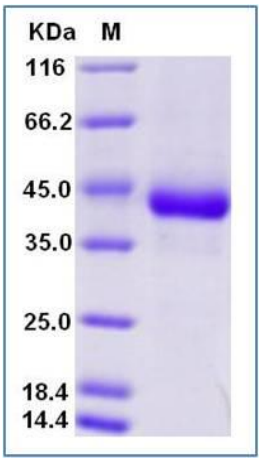
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

RSPO1 gene is a member of the R-spondin family. It encodes RSPO1 which is known as a secreted activator protein with two cystein-rich, furin-like domains and one thrombospondin type 1 domain. In mice, RSPO1 induces the rapid onset of crypt cell proliferation and increases intestinal epithelial healing, providing a protective effect against chemotherapy-induced adverse effects. This protein is an activator of the beta-catenin signaling cascade, leading to TCF-dependent gene activation. RSPO1 acts both in the canonical Wnt/beta-catenin-dependent pathway and in non-canonical Wnt signaling pathway, probably by acting as an inhibitor of ZNRF3, an important regulator of the Wnt signaling pathway. It also acts as a ligand for frizzled FZD8 and LRP6.

References

1.Kamata T, et al. (2004) R-spondin, a novel gene with thrombospondin type 1 domain, was expressed in the dorsal neural tube and affected in Wnts mutants. Biochim Biophys Acta. 1676(1):51-62.
2.Ota T, et al. (2004) Complete sequencing and characterization of 21,243 full-length human cDNAs. Nat Genet. 36(1):40-5.
3.Strausberg RL, et al. (2003) Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences. Proc Natl Acad Sci. 99(26):16899-903.