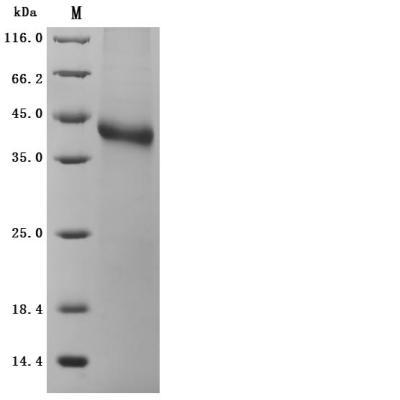
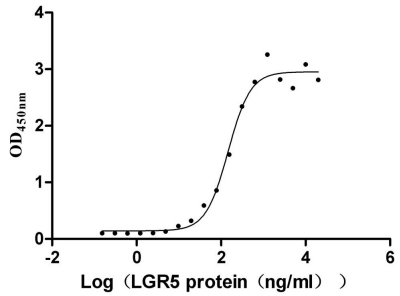
Recombinant Human R-spondin-1 (RSPO1), partial (Active)

Product Code	CSB-MP644834HU1
Abbreviation	Recombinant Human RSPO1 protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q2MKA7
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, 6% Trehalose, pH 7.4
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Human RSPO1 at 2 μg/mL can bind Human LGR5(CSB-MP012906HU1), the EC_{50} is 124.0-174.1 ng/mL.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	RISAEGSQACAKGCELCSEVNGCLKCSPKLFILLERNDIRQVGVCLPSCPPGYF DARNPDMNKCIKCKIEHCEACFSHNFCTKCKEGLYLHKGRCYPACPEGSSAA NGTMECSSPAQCEMSEWSPWGPCSKKQQLCGFRRGSEERTRRVLHAPVGD HAACSDTKETRRCTVRRVPCPEGQKRRKGGQGRRENANRNLARKESKEAGA GSRRRKGQQQQQQQGTVGPLTSAGPA
Source	Mammalian cell
Target Names	RSPO1
Expression Region	31-263aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 10xHis-Avi-tagged
Mol. Weight	30.2 kDa
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.



Activity
Measured by its binding ability in a functional ELISA. Immobilized Human RSPO1 at 2 μg/ml can bind Human LGR5(CSB-MP012906HU1), the EC_{50} is 124.0-174.1 ng/mL.

Description

The recombinant human RSPO1 protein is expressed in mammalian cells. Its expression region corresponds to the 31-263aa of the human RSPO1. It is fused with a 10xHis-Avi-tag at the C-terminus. The resulting recombinant RSPO1 protein is extracted after cell lysis and purified with affinity chromatography. SDS-PAGE confirms its purity above 95%, and the LAL method ensures its endotoxin levels are below 1.0 EU/μg. It is validated to be an active protein. Functional ELISA validates its binding to the human LGR5 (CSB-MP012906HU1), with an EC_{50} of 124.0-174.1 ng/mL.

Human RSPO1 is a member of the R-spondin family of secreted proteins, which play critical roles in enhancing Wnt signaling pathways, particularly the Wnt/β-catenin pathway. RSPO1 is known for its ability to stabilize β-catenin, a key effector in Wnt signaling, thereby promoting various biological processes including cell proliferation, differentiation, and tissue homeostasis [1][2]. RSPO1 is characterized by two furin-like repeats and a thrombospondin type 1 repeat, which are essential for its signaling activity [3][4].

RSPO1 is expressed in various tissues, including the intestine and gonads, and has been implicated in developmental processes such as ovarian development and nephron progenitor maintenance [5][6][7]. Its expression is particularly significant during early ovarian development, where it augments β-catenin signaling, suggesting a role in sexual differentiation [5][7]. Furthermore, mutations in the RSPO1 gene have been associated with disorders of sex development, including cases of male-to-female sex reversal [8][9].

RSPO1 has been shown to influence keratinocyte proliferation and differentiation, making it relevant in the context of skin cancers such as squamous cell carcinoma [10][11]. Moreover, RSPO1's interaction with other

proteins, such as LGR4 and LGR5, facilitates its signaling capabilities, linking it to various cellular responses and potentially to tumorigenesis [11][12].

Recent studies have also explored the role of RSPO1 in metabolic processes, particularly its association with obesity and insulin resistance [13][14]. Additionally, RSPO1 has been identified as a protective factor against radiation-induced gastrointestinal damage, further emphasizing its significance in tissue repair and regeneration [15][16].

References:

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Endotoxin	Less than 1.0 EU/ug as determined by LAL method.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.