Recombinant Human R-Spondin 2 Fc Chimera

Catalog Number: 11427-RS

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human R-Spondin 2 protein

Human R-Spondin 2 (Ala32-Gly205) Accession # Q6UXX9.2	IEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis	Ala32
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	47 kDa

SPECIFICATIONS

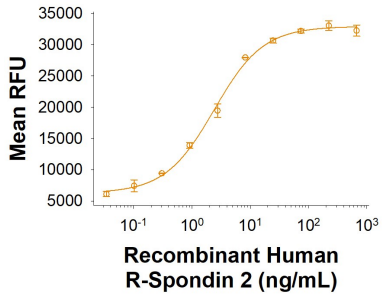
SDS-PAGE	53-60 kDa, under reducing conditions.
Activity	Measured by its ability to activate TCF reporter activity in HEK293 human embryonic kidney cells in the presence of Recombinant Human Wnt-3a (Catalog # 5036-WN). The ED_{50} for this effect is 0.400-4.80 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

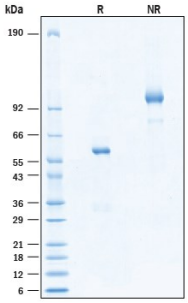
DATA

Bioactivity



Recombinant Human R-Spondin 2 Fc Chimera Protein Bioactivity. Recombinant Human R-Spondin 2 Fc Chimera Protein (Catalog # 11427-RS) activates TCF reporter activity in HEK293 human embryonic kidney cells in the presence of Recombinant Human Wnt-3a (Catalog # 5036-WN). The ED_{50} for this effect is 0.400-4.80 ng/mL.

SDS-PAGE



Recombinant Human R-Spondin 2 Fc Chimera Protein SDS-PAGE. 2 µg/lane of Recombinant Human R-Spondin 2 Fc Chimera Protein (Catalog # 11427-RS) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 53-60 kDa and 110-120 kDa, respectively. .

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BACKGROUND

Roof plate-specific Spondin 2 isoform 1 (R-Spondin 2, RSPO2), also known as cysteine-rich and single thrombospondin domain containing protein 2 (Cristin 2), is a 33 kDa secreted protein that belongs to the R-Spondin family (1-3). The four R-Spondins regulate Wnt/ beta -catenin signaling and overlap in expression and function (1-3). Like other R-Spondins, RSPO2 contains two adjacent cysteine-rich furin-like domains (aa 90-134) followed by a thrombospondin (TSP-1) motif (aa 144-204) and a C-terminal region rich in basic residues (aa 207-243). The basic region binds heparin and mediates cell surface retention and extracellular matrix attachment while the furin-like domains are required for Wnt/ beta -catenin signaling (1, 3, 4). RSPO2 contains one potential N-glycosylation site. Mature human RSPO2 shares 97-98% aa identity with mouse, rat, equine, canine and bovine RSPO2 and ~40% aa identity with RSPO1, RSPO3 and RSPO4. Of the three reported splice isoforms of human R-Spondin 2, isoform 2 lacks residues 1-67 of isoform 1, while isoform 3 has a glycine substitution for residues 32-95 of isoform 1 (5). Human RSPO2 is expressed in organs of endodermal origin in adults, including intestine and lung, and is down-regulated in tumors of these tissues (1). In the embryonic mouse, RSPO2 expression is concentrated in the apical epidermal ridge, hippocampus, and developing muscle, teeth and bones (1, 6). Deletion of RSPO2 results in down-regulation of Wnt activity in these areas, malformations of the facial skeleton and limbs, and respiratory failure at birth (7-9). RSPO2 is an extracellular potentiator of Wnt/ beta -catenin signaling (3, 4). It functions at least in part by binding LRP-6, stimulating its long-term phosphorylation and down-regulating its internalization (3, 4). RSPO proteins, especially RSPO2 and RSPO3, also antagonize DKK1 activity by interfering with DKK1-mediated LRP-6 and Kremen association (10).

References:

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