



### Synonym

RSPO1,CRISTIN3,FLJ40906,RP11-566C13.1,R-spondin-1

### Source

Human R-Spondin 1 (21-146), His Tag, premium grade(RS6-H4220) is expressed from human 293 cells (HEK293). It contains AA Ser 21 - Ala 146 (Accession # [AAI14967](#)).

Predicted N-terminus: Ser 21

*It is produced under our rigorous quality control system that incorporates a comprehensive set of tests including sterility and endotoxin tests. Product performance is carefully validated and tested for compatibility for cell culture use or any other applications in the early preclinical stage. When ready to transition into later clinical phases, we also offer a custom GMP protein service that tailors to your needs. We will work with you to customize and develop a GMP-grade product in accordance with your requests that also meets the requirements for raw and ancillary materials use in cell manufacturing of cell-based therapies.*

### Molecular Characterization

R-Spondin 1(Ser 21 - Ala 146)  
AAI14967 Poly-his

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 14.6 kDa. The protein migrates as 20-22 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

### Endotoxin

Less than 0.1 EU per µg by the LAL method.

### Sterility

Negative

### Mycoplasma

Negative.

### Purity

>90% as determined by SDS-PAGE.

### Formulation

Lyophilized from 0.22 µm filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

### Reconstitution

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

### Storage

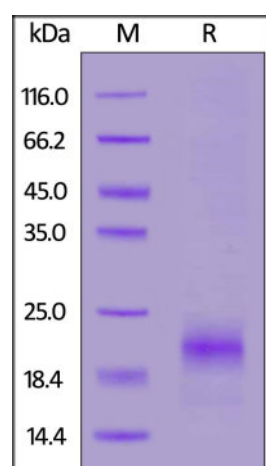
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

### SDS-PAGE



Human R-Spondin 1 (21-146), His Tag, premium grade on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

### Bioactivity-Organoid Culture

R-Spondin 1 ORGANOID CULTURE

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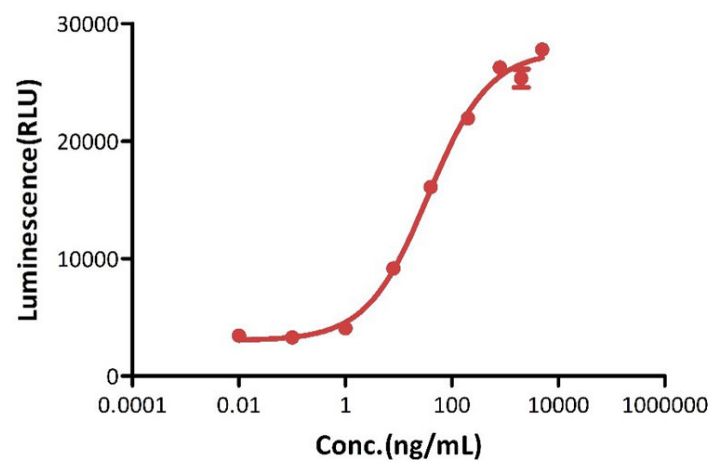
R-spondin-1 (Cat. No. RS6-H4220) maintains intestinal organoid growth well during multiple passages and long-term culture processes, comparable to other companies. The organoids showed good budding morphology.

**R-Spondin 1 ORGANOID CULTURE**

Human EGF (Cat. No. EGF-H52H3), Noggin (Cat. No. NON-H5257), R-spondin1 (Cat. No. RS6-H4220), FGF7 (Cat. No. FG7-H52H5), FGF10 (Cat. No. FG0-H5145), HGF (Cat. No. HGF-H52H3) actively support liver ductal organoid growth.

**Bioactivity-Bioactivity CELL BASE**

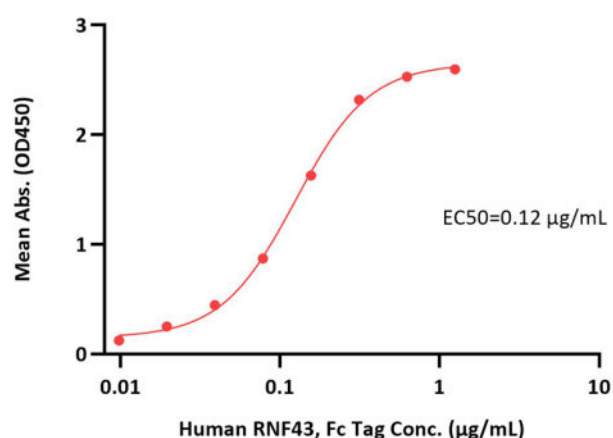
**Human R-Spondin 1 (21-146), His Tag, premium grade stimulates proliferation of TCF/LEF (Luc) HEK293 Reporter Cell**



Human R-Spondin 1 (21-146), His Tag, premium grade (Cat. No. RS6-H4220) stimulates proliferation of TCF/LEF (Luc) HEK293 Reporter Cell. The specific activity of Human R-Spondin 1 (21-146), His Tag, premium grade is  $>1.00 \times 10^4$  U/mg (QC tested).

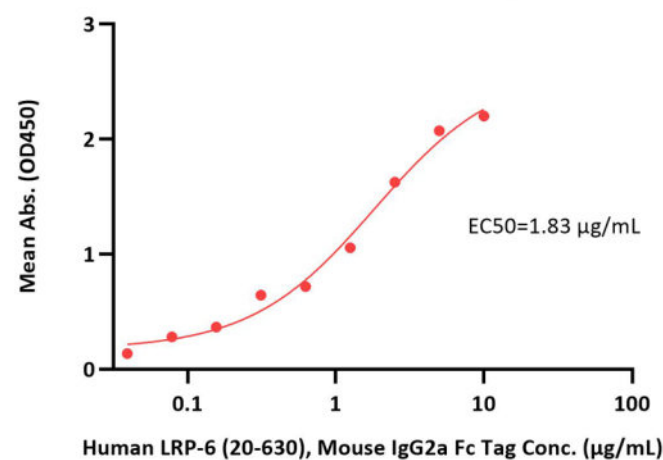
**Bioactivity-ELISA**

Human R-Spondin 1 (21-146) Protein, His Tag, premium grade ELISA  
0.5 µg of Human R-Spondin 1 (21-146) Protein, His Tag, premium grade per well



Immobilized Human R-Spondin 1 (21-146), His Tag, premium grade (Cat. No. RS6-H4220) at 5 µg/mL (100 µL/well) can bind Human RNF43, Fc Tag (Cat. No. RN3-H5256) with a linear range of 0.01-0.156 µg/mL (QC tested).

Human R-Spondin 1 (21-146) Protein, His Tag, premium grade ELISA  
0.5 µg of Human R-Spondin 1 (21-146) Protein, His Tag, premium grade per well



Immobilized Human R-Spondin 1 (21-146), His Tag, premium grade (Cat. No. RS6-H4220) at 5 µg/mL (100 µL/well) can bind Human LRP-6 (20-630), Mouse IgG2a Fc Tag (Cat. No. LR6-H5253) with a linear range of 0.039-2.5 µg/mL (Routinely tested).

**Background**

R-spondin-1 is also known as Roof plate-specific Spondin 1 (RSPO1) and cysteine-rich and single thrombospondin domain containing protein 3 (Cristin 3), which is a secreted protein which belongs to the R-Spondin family and encodes a secreted activator protein with two cysteine-rich, furin-like domains and one thrombospondin type 1 domain. All R-spondins regulate Wnt/β-catenin signaling, but have distinct expression patterns. Like other R-Spondins, R-Spondin-1 contains two adjacent

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## Human R-Spondin 1 / RSP01 (21-146) Protein, His Tag, premium grade

Catalog # RS6-H4220



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cysteine-rich furin-like domains (aa 34-135) with one potential N-glycosylation site, followed by a thrombospondin (TSP1) motif (aa 147-207) and a region rich in basic residues (aa 211-263). Only the furin-like domains are needed for  $\beta$ -catenin stabilization. A putative nuclear localization signal at the C-terminus may allow some expression in the nucleus.

### Clinical and Translational Updates

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