

RP00071

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# Recombinant Human R-spondin-1/RSP01 Protein

Catalog No.: RP00071

Recombinant

## Sequence Information

Species	Gene ID	Swiss Prot
HEK293 cells	284654	Q2MKA7

### Tags

C-His

### Synonyms

RSP01;CRISTIN3;RSP0

## Product Information

### Source

### Purification

≥ 95 % as determined by SDS-PAGE; ≥ 90 % as determined by HPLC.

### Endotoxin

< 0.1 EU/μg of the protein by LAL method.

### Formulation

Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4. Contact us for customized product form or formulation.

### Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

## Background

This protein is a secreted activator protein with two cysteine-rich, furin-like domains and one thrombospondin type 1 domain. The encoded protein is a ligand for leucine-rich repeat-containing G-protein coupled receptors (LGR proteins) and positively regulates the Wnt signaling pathway. In mice, the protein induces the rapid onset of crypt cell proliferation and increases intestinal epithelial healing, providing a protective effect against chemotherapy-induced adverse effects.

## Basic Information

### Description

Recombinant Human R-spondin-1/RSP01 Protein is produced by HEK293 expression system. The target protein is expressed with sequence (Arg31-Ala263) of human R-Spondin1 (Accession #NP\_001033722.1) fused with a 6×His tag at the C-terminus.

### Bio-Activity

1. Measured by its ability to enhance Cyclin D1 expression in HCT116 human colon adenocarcinoma cells. 0.1-10 ng/mL of Recombinant Human RSP01 can effectively enhance Cyclin D1 expression. 2. The intestinal crypts of mice were cultured in organoid culture medium containing factor combinations (100 ng/mL Noggin, Cat. RP01237 + 500 ng/mL R-spondin-1, Cat. RP00071) derived from ABclonal for 144 hours, intestinal organoids were formed. (Customer Feedback Data) 3. Recombinant Human R-Spondin 1 protein stimulated Wnt signal pathway with Wnt-3a protein in HEK293T cells. After 6 hours, the stimulation when adding 300 ng/mL of R-Spondin-1 reached highest effect. Compared with only Wnt-3a stimulation, the Wnt signaling pathway was enhanced 3.1-fold after adding 300 ng/mL R-Spondin 1.

### Storage

Store at -20°C. Store the lyophilized protein at -20°C to -80 °C up to 1 year from the date of receipt. After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week. Avoid repeated freeze/thaw cycles.

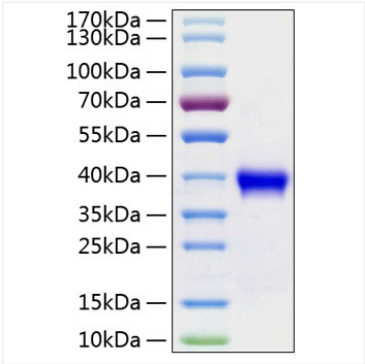
## Contact



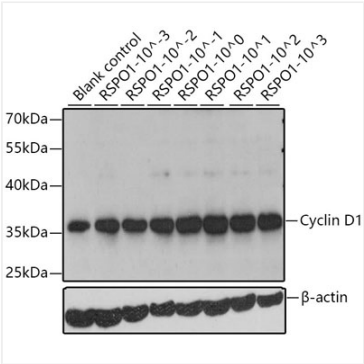
[www.abclonal.com](http://www.abclonal.com)

\* For your safety and health, please wear a lab coat and disposable gloves when handling.

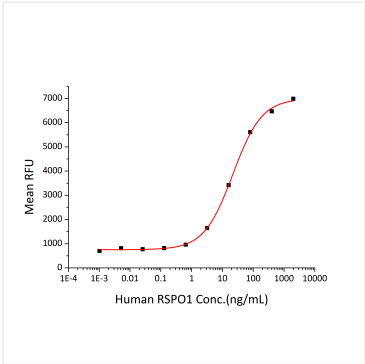
Validation Data



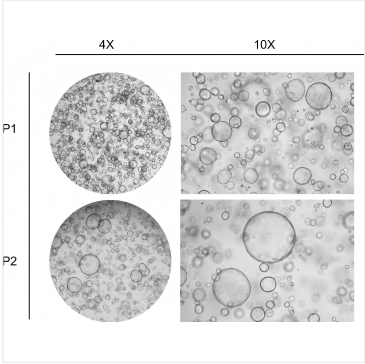
Recombinant Human R-spondin-1/RSPO1 Protein was determined by SDS-PAGE under reducing conditions with Coomassie Blue.



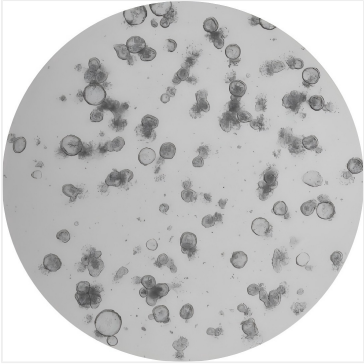
Recombinant Human R-Spondin1 enhances Cyclin D1 expression in HCT116 human colon adenocarcinoma cells. 0.1-10ng/mL of Recombinant Human RSPO1 can effectively enhance Cyclin D1 expression.



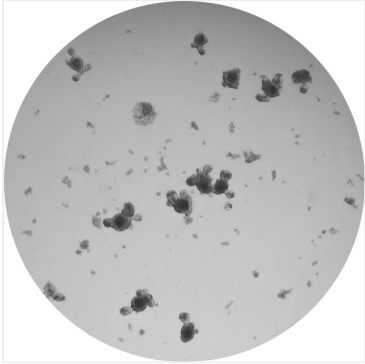
Recombinant Human R-spondin-1/RSPO1 Protein induce Topflash reporter activity in HEK293T human embryonic kidney cells. The ED50 for this effect is 6.61~26.44 ng/mL in the presence of 5 ng/mL Wnt Surrogate Protein, corresponding to a specific activity of  $3.78 \times 10^4 \sim 1.51 \times 10^5$  units/mg.



Human stomach organoids organoids were cultured with EGF(Cat. RP03287), FGF10(Cat. RP01140), NOG(Cat. RP01237), RSPO1(Cat. RP00071), WNT-3a(Cat. RP01618SLQ).



Mouse large intestinal organoids were cultured with EGF(Cat. RP03287), NOG(Cat. RP01237), RSPO1(Cat. RP00071), WNT-3a(Cat. RP01618SLQ)



Mouse small intestinal organoids were cultured with EGF(Cat. RP03287), NOG(Cat. RP01237), RSPO1(Cat. RP00071).