

# Recombinant Human R-Spondin1

Catalog Number: 861-RS1



**OrganRegen, INC.**

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## DESCRIPTION

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### Background:

R-Spondin1 (Rspo-1) belongs to the (Rspo) family of Wnt modulators. Currently, the family consists of four structurally related secreted ligands (Rspo 1-4), all containing the furin-like and thrombospondin structural domains. Postnatally, R-Spondin1 is expressed by neuroendocrine cells in the intestine, adrenal gland and pancreas, and by epithelia in kidney and prostate. R-Spondin1 regulates Wnt/ $\beta$ -catenin by competing with the Wnt antagonist DKK-1 for binding to the Wnt co-receptors, Kremen and LRP-6, reducing their DKK-1-mediated internalization. Recombinant Human R-Spondin1 is a 27.3 kDa protein consisting of 233 amino acid residues. Due to glycosylation, R-Spondin1 migrates at an apparent molecular weight of approximately 41.0 kDa by SDS-PAGE analysis under reducing conditions.

### Source:

*Chinese Hamster Ovary cell line*

### Protein Construction:

A DNA sequence encoding the amino acids (Ala31-Ser263) of human Rspo-1 (Accession Number: Q2MKA7) was expressed.

### Synonyms:

Roof plate-specific spondin-1, RSPO1

## SPECIFICATIONS

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### Purity:

$\geq 95\%$ , by SDS-PAGE visualized with quantitative densitometry by Coomassie<sup>®</sup> Blue Staining.

### Biological Activity:

Measured by its ability to induce activation of  $\beta$ -catenin response in a Top-flash Luciferase assay using HEK293T human embryonic kidney cells. The ED50 for this effect is typically 0.1-0.5  $\mu\text{g}/\text{ml}$  in the presence of 5 ng/ml recombinant mouse Wnt3a.

### Endotoxin Level:

$<0.10$  EU per 1  $\mu\text{g}$  of the protein by the LAL method

### Calculated Molecular Weight:

27.3 kDa

### SDS-PAGE:

41.0 kDa, reducing conditions

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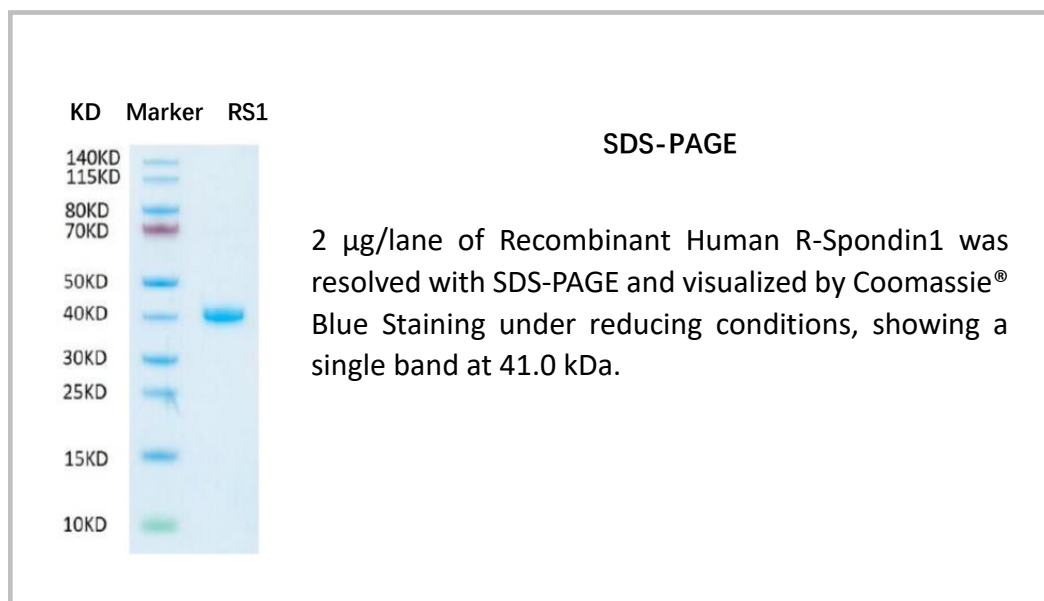


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## DATA

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## FORMULATION AND STORAGE

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### Formulation:

The product is Lyophilized from a 0.22 $\mu$ m filtered solution in PBS.

### Shipping:

The product is shipped on ice. Upon receipt, store it immediately as methods recommended below.

### Reconstitution:

Reconstitute in sterile PBS buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL.

### Stability & Storage:

24 months, -20 to -70 °C, under powder state;

12 months, -20 to -70 °C, under sterile conditions after reconstitution;

2 month, 2 to 8 °C under sterile conditions after reconstitution;

avoid repeated freeze-thaw cycles.

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### References:

1. Kim, K.A., et al., R-Spondin proteins: a novel link to beta-catenin activation. *Cell Cycle*, 2006. 5(1)
2. Kamata, T., et al., 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*, 2004. 1676(1)
3. Hao, H.X., et al., ZNRF3 promotes Wnt receptor turnover in an R-spondin-sensitive manner. *Nature*, 2012. 485(7397)