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# Human Recombinant R-spondin-3, ACF

R-spondin-3

**Catalog** #100-2065 100 µg

## Product Description

R-Spondin-3 is a member of thrombospondin type 1 repeat (TSR-1) superfamily that is involved in the canonical Wnt/β-catenin signaling pathway (de Lau et al.). R-spondin proteins are characterized by two furin-like repeats at the amino terminus and thrombospondin domain located near the carboxyl terminus (de Lau et al.). R-spondin-3 expression is associated with ovarian cancer (Gu et al.), prostate cancer (Mesci et al.), and differentiation of intestinal epithelial cells in diabetes mellitus (Shan et al.). In a transgenic mouse model, the expression of R-Spondin-3 induces the expansion of Lgr5+ stem cells, Paneth cells, and Lgr4+ cells, promoting the intestinal stem cell compartment (Hilkens et al.). This product is animal component-free (ACF).

## Product Information

**Alternative Names**: Cristin 1, hRspo3, PWTSR, R-Spondin 3, Roof plate-specific spondin-3, RSPO3, RSpondin 3, Thrombospondin type-1 domain-containing protein 2, THSD2

**Accession Number**: Q9BXY4

**Predicted Molecular Mass**: 17 kDa

**Species**: Human

**Product Formulation**: Lyophilized from a solution containing acetonitrile and trifluoroacetic acid.

**Source**: E. coli

**Purity**: ≥ 98% by SDS-PAGE

## Specifications

**Activity**: The EC50 is approximately 5 ng/mL (~0.3 nM), as determined by the WNT-responsive luciferase reporter assay in HEK239T cells.

**Endotoxin Level**: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.1 EU/µg protein.

## Preparation and Storage

**Stability and Storage**: Store at -20 to -80°C. Stable as supplied for 12 months from date of receipt.

**Preparation**: Centrifuge vial before opening. Reconstitute the product in 10 mM hydrochloric acid to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1 - 1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at -20 to -80°C for more than 12 months. Avoid repeated freeze-thaw cycles.

## Data

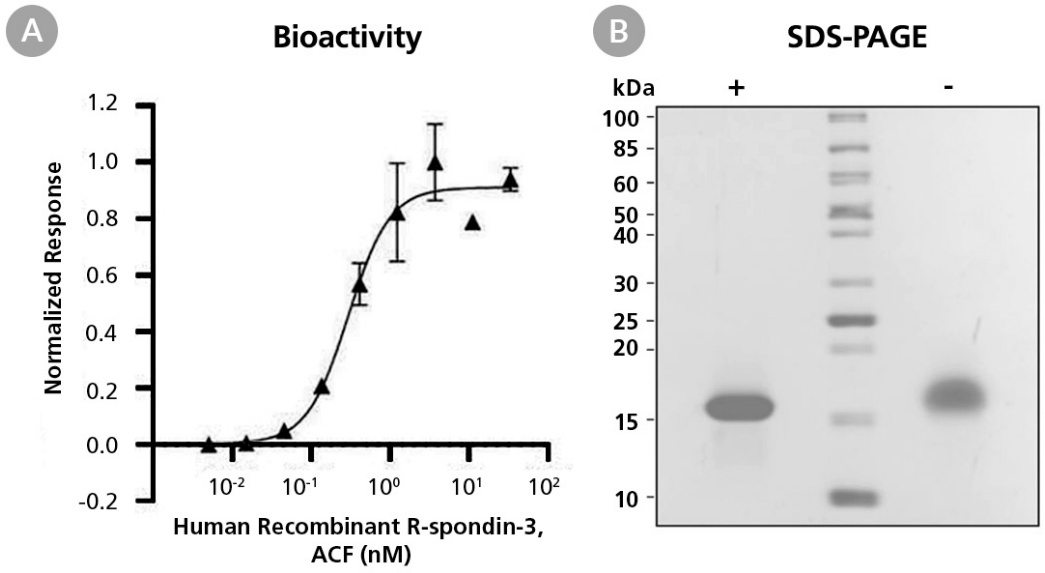


**Figure 1. Biological Activity and Molecular Mass of Human Recombinant R-spondin-3, ACF**

(A) The biological activity of Human Recombinant R-Spondin-3, ACF was tested by its ability to induce Wnt-ß catenin signaling in HEK239T cells using a luciferase reporter assay. Firefly luciferase activity was normalized to control Renilla luciferase activity. The EC50 is defined as the effective concentration of the growth factor at which Wnt-ß catenin response is at 50% of maximum. The EC50 in the above example is 0.3 nM (5 ng/mL). (B) 7 µg of Human Recombinant R-spondin-3, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant R-spondin-3, ACF has a predicted molecular mass of 17 kDa.

## Related Products

For a complete list of cytokines or peptide pools, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

## References

Gu H et al. (2020) RSPO3 is a marker candidate for predicting tumor aggressiveness in ovarian cancer. Ann Transl Med 8(21): 1351.

Hilkens J et al. (2017) RSPO3 expands intestinal stem cell and niche compartments and drives tumorigenesis. Gut 66(6): 1095–105.

de Lau WBM et al. (2012) The R-spondin protein family. Genome Biol 13(242).

Mesci A et al. (2019) RSPO3 is a prognostic biomarker and mediator of invasiveness in prostate cancer. J Transl Med 17(1): 1–11.

Shan TD et al. (2021) RSPO3 regulates the abnormal differentiation of small intestinal epithelial cells in diabetic state. Stem Cell Res Ther 12(1): 1–11.