



# Recombinant Human R-Spondin-3

20161025BB



**FOR RESEARCH ONLY! NOT FOR HUMAN USE!**

<b>Cat.-no.:</b>	<b>100-427</b>
<b>Size:</b>	20 µg
<b>Lot. No.:</b>	According to product label

## Scientific Background

<b>Gene-ID (NCBI):</b>	84870
<b>Synonyms:</b>	PWTSR, THSD2, Roof plate-specific Spondin-3, RSPO3

The R-Spondin (Rspo) proteins belong to the Rspo family of Wnt modulators. Currently, the family consists of four structurally related secreted ligands (Rspo 1-4), all containing furin-like and thrombospondin structural domains. The Rspo proteins can interact with the Frizzled/LRP6 receptor complex in a manner that causes the stabilization and resulting accumulation of the intracellular signaling protein,  $\beta$ -catenin. This activity effectively activates and increases the subsequent nuclear signaling of  $\beta$ -catenin. R-Spondin can also bind to the previously discovered G-protein coupled receptors, LGR-4 and LGR-5. Rspo/ $\beta$ -catenin signaling can act as an inducer of the transformed phenotype, and can also regulate the proliferation and differentiation of certain stem cell populations. Recombinant human R-Spondin-3 is a 26.9 kDa protein consisting of 240 amino acid residues. Due to glycosylation, R-Spondin-3 migrates at an apparent molecular weight of approximately 37.0 kDa by SDS PAGE analysis under reducing conditions.

### Sequence

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MHPNVSQGCQ GGCATCSQDYN GCLSCPKRLF FALERIGMKQ
IGVCLSSCPS GYYGTRYPDI NKCTKCKADC DTCFNKNFCT
KCKSGFYHLH GKCLDNCPEG LEANNHTMEC VSIVHCEVSE
WNPWSPCTKK GKTCGFKRGT ETRVREIIQH PSAKGNLCPP
TNETRKCTVQ RKKCQKGERG KKGRRERKRRK PKNGESKEAI
PDSKSLESSK EIPEQRENKQ QQKRRKVQDK QKSVSVSTVH
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### Database References

<b>Protein RefSeq:</b>	NP_116173.2
<b>Uniprot ID:</b>	Q9BXY4
<b>mRNA RefSeq:</b>	NM_032784.4

## Product Specifications

<b>Expressed in</b>	CHO cells
<b>Purity</b>	> 95% by SDS-PAGE & HPLC analyses
<b>Endotoxin level</b>	< 0.1 ng /µg of protein (<1EU/µg).
<b>Formulation</b>	lyophilized
<b>Length (aa):</b>	240
<b>MW:</b>	26.9 kDa

**Stability:** The lyophilized protein is stable at room temperature for 1 month and at 4°C for 6 months. Reconstituted working aliquots are stable for 1 week at 2°C to 8°C and for 3 months at -20°C to -80°C.

**Reconstitution:** Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. *Do not vortex.* This solution can be stored at 2-8°C for up to 1 week. For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% BSA) and store in working aliquots at -20°C to -80°C.



**AVOID REPEATED FREEZE AND THAW CYCLES!**

**Biological Activity:** R-Spondin-3 enhances BMP-2 mediated differentiation of MC3T3-E1 cells. The expected ED<sub>50</sub> for this effect is 0.8-2.0 µg/ml.