

**DESCRIPTION**

**Source** Chinese Hamster Ovary cell line, CHO-derived  
Arg31-Ala263  
Accession # Q2MKA7

**N-terminal Sequence Analysis** Arg31

**Structure / Form** Biotinylated protein via sugars

**Predicted Molecular Mass** 26 kDa (unlabeled)

**SPECIFICATIONS**

**Activity** Measured by its ability to induce Topflash reporter activity in HEK293T human embryonic kidney cells. The ED<sub>50</sub> for this effect is typically 5-30 ng/mL in the presence of 5 ng/mL recombinant mouse Wnt-3a.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**Formulation** Lyophilized from a 0.2 µm filtered solution in PBS and NaCl. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

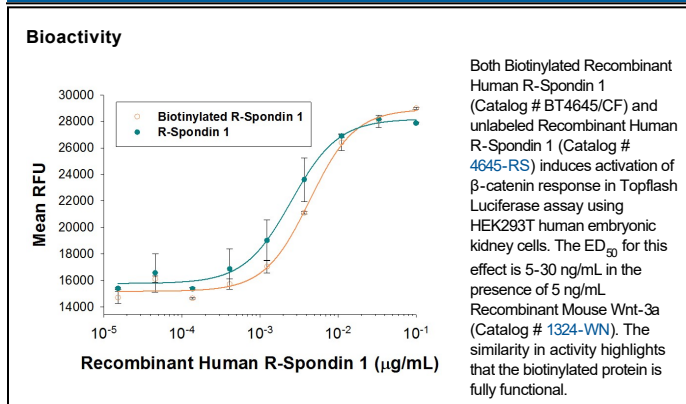
**Reconstitution** Reconstitute at 100 µg/mL in PBS.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**DATA**



**BACKGROUND**

R-Spondin 1 (RSPO1), also known as Cristin 3, is a 27 kDa secreted protein in the R-Spondin family of Wnt/ $\beta$ -catenin signaling regulators (1). These proteins contain two adjacent cysteine-rich furin-like domains followed by a thrombospondin (TSP-1) motif and a region rich in basic residues. Mature human R-Spondin 1 shares 87% amino acid sequence identity with mouse and rat R-Spondin 1 (2). Alternative splicing generates additional isoforms that have a substituted N-terminus or lack the TSP-1 domain. R-Spondin 1 enhances canonical Wnt/ $\beta$ -catenin signaling by competing with the Wnt antagonist Dkk-1, binding to Frizzled-8, Kremen, LRP-6, Lgr4, Lgr5, and Lgr6, and enhancing cell surface availability of Wnt receptors (3-11). R-Spondin 1 functions in dorsal neural tube development (12) as well as male and female germ cell development (7, 10, 13). It also induces bone formation (6), intestinal crypt cell proliferation (14), angiogenesis (7, 15), and insulin secretion from pancreatic beta cells (11).

**References:**

1. Jin, Y.R. and J.K. Yoon (2012) *Int. J. Biochem. Cell Biol.* **44**:2278.
2. Chen, J.-Z. *et al.* (2002) *Mol. Biol. Rep.* **29**:287.
3. Binnerts, M.E. *et al.* (2007) *Proc. Natl. Acad. Sci. USA* **104**:14700.
4. Nam, J.-S. *et al.* (2006) *J. Biol. Chem.* **281**:13247.
5. Wei, Q. *et al.* (2007) *J. Biol. Chem.* **282**:15903.
6. Kronke, G. *et al.* (2010) *Arthritis Rheum.* **62**:2303.
7. Caruso, M. *et al.* (2015) *PLoS One* **10**:e0124213.
8. Hao, H.-X. *et al.* (2012) *Nature* **485**:195.
9. de Lau, W. *et al.* (2011) *Nature* **476**:293.
10. Chassot, A.-A. *et al.* (2011) *PLoS One* **6**:e25641.
11. Wong, V.S.C *et al.* (2010) *J. Biol. Chem.* **285**:21292.
12. Kamata, T. *et al.* (2004) *Biochim. Biophys. Acta* **1676**:51.
13. Chassost, A.-A. *et al.* (2012) *Development* **139**:4461.
14. Kim, K.-A. *et al.* (2005) *Science* **309**:1256.
15. Gore, A.V. *et al.* (2011) *Development* **138**:4875.