Data Sheet (Cat.No.TMPY-06418)

TargetMol

R-Spondin 2/RSPO2 Protein, Human, Recombinant (hFc)

General Information

Synonyms:	R-spondin 2;CRISTIN2
Protein Construction:	A DNA sequence encoding the Human RSPO2 (Q6UXX9-1, with mutations L186P) (Met1-Gly205) was expressed with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Gln 22
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q6UXX9-1
Molecular Weight:	48.01 kDa (predicted); 56.15 kDa (reducing conditions)

QC Testing

Biological Activity:	Measured by its ability to induce activation of ßcatenin response in a Topflash Luciferase assay using HEK293T human embryonic kidney cells. The ED50 for this effect is typically 2-12 ng/mL in the presence of 5 ng/mL recombinant mouse Wnt3a.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing Histidine, Arginine, 120 mM NaCl, 0.02% Tween 80, 5% sucrose, pH 6. 0.Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

R-spondin-2, also known as RSPO2, synergizes with Wnt to activate beta-catenin. RSPO2 is secreted proteins that regulate beta-catenin signaling. Activator of the beta-catenin signaling cascade leads to TCF-dependent gene

activation. Action both in the canonical Wnt / beta- catenin-dependent pathway, possibly via a direct interaction with Wnt proteins, and in a Wnt-independent beta catenin pathway through a receptor signaling pathway that may not use frizzled / LRP receptors. Probably also acts as a ligand for frizzled and LRP receptors. The encoding gene Rspo2 was identified as a novel common integration site for the mouse mammary tumor virus in viral induced mouse mammary tumors. Rspo2 and Rspo2 / Wnt1 tumors contained many spindle cells, consistent with an epithelial-mesenchymal transformation phenotype. When Rspo2 and Rspo2 / Wnt1 tumor cells were transferred into naive mice, they exhibited greater metastatic activity than cells derived from Wnt1 tumors.

Reference

Cadieu E, et al. (2009) Coat Variation in the Domestic Dog Is Governed by Variants in Three Genes. Science. 326: 150-153.

Kazanskaya O, et al. (2004) R-Spondin2 is a secreted activator of Wnt / beta-catenin signaling and is required for Xenopus myogenesis. Dev Cell. 7(4): 525-34.

Parker HG, et al. (2010) An insertion in the RSPO2 gene correlates with improper coat in the Portuguese water dog. J Hered. 101(5):612-7.