

RSPO1/R-spondin-1 Protein, Human (125a.a, HEK293, His)

Cat. No.:	HY-P72784A
Synonyms:	R-spondin-1; Roof plate-specific spondin-1; RSPO1
Species:	Human
Source:	HEK293
Accession:	Q2MKA7-1 (S21-A146)
Gene ID:	284654
Molecular Weight:	17-25 kDa

PROPERTIES

AA Sequence	<p> S R G I K G K R Q R R I S A E G S Q A C A K G C E L C S E V N G C L K C S P K L F I L L E R N D I R Q V G V C L P S C P P G Y F D A R N P D M N K C I K C K I E H C E A C F S H N F C T K C K E G L Y L H K G R C Y P A C P E G S S A A N G T M E C S S P A </p>
Biological Activity	<p>1.R-Spondin-1 enhances BMP-2-mediated differentiation of MC3T3-E1 cells. The ED₅₀ for this effect is 1.584 µg/mL.</p> <p>2.Measured by its ability to induce Topflash reporter activity in HEK293T human embryonic kidney cells.The ED₅₀ for this effect is less than 50ng/mL in the presence of 5ng/mL Recombinant Human Wnt3a.</p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<0.1 EU/µg; determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years from date of receipt. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>RSPO1, also known as R-spondin-1, serves as an activator of the canonical Wnt signaling pathway by acting as a ligand for LGR4-6 receptors. Upon binding to LGR4-6 (LGR4, LGR5, or LGR6), the resulting complex associates with phosphorylated LRP6 and frizzled receptors, activated by extracellular Wnt receptors. This interaction triggers the canonical Wnt signaling pathway, leading to an upregulation of target gene expression. Additionally, RSPO1 plays a role in modulating the canonical Wnt/beta-catenin-dependent pathway and non-canonical Wnt signaling by inhibiting ZNRF3, a crucial regulator in the Wnt</p>
------------	---

pathway. Acting as a ligand for frizzled FZD8 and LRP6, RSPO1 also negatively regulates the TGF-beta pathway and has essential functions in ovary determination. Furthermore, RSPO1 regulates Wnt signaling by counteracting DKK1/KREM1-mediated internalization of LRP6 through an interaction with KREM1. The protein interacts with the extracellular domain of FZD8 and LRP6, forms a complex with RNF43, LGR5, and RSPO1, and binds heparin. RSPO1's interactions with ZNRF3 facilitate the membrane clearance of ZNRF3, contributing to its multifaceted role in Wnt pathway regulation.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite F, Monmouth Junction, NJ 08852, USA