RSPO3/R-spondin-3 Protein, Human (HEK293, Fc-His)

Cat. No.:	HY-P70557
Synonyms:	R-spondin-3; RSPO3; Protein with TSP type-1 repeat; Roof plate-specific spondin-3; Thrombospondin type-1 domain-containing protein 2; PWTSR; THSD2; CRISTIN1
Species:	Human
Source:	HEK293
Accession:	Q9BXY4 (Q22-V201)
Gene ID:	84870
Molecular Weight:	Approximately 61.0 kDa

PROPERTIES

AA Sequence	Q N A S R G R R Q R R M H P N V S Q G C Q G G C A T C S D Y N G C L S C K P R L F F A L E R I G M K Q I G V C L S S C P S G Y Y G T R Y P D I N K C T K C K A D C D T C F N K N F C T K C K S G F Y L H L G K C L D N C P E G L E A N N H T M E C V S I V H C E V S E W N P W S P C T K K G K T C G F K R G T E T R V R E I I Q H P S A K G N L C P P T N E T R K C T V
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. 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	R-Spondin 3 (RSPO3) serves as a potent activator of the canonical Wnt signaling pathway, acting as a ligand for LGR4-6 receptors and playing a pivotal role in angiogenesis regulation. 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. RSPO3 also acts as a multifaceted regulator by inhibiting ZNRF3, a crucial component of the Wnt signaling pathway, and serving as a ligand for frizzled FZD8 and LRP6. It may additionally exert negative regulation on the TGF-beta pathway. In the context of angiogenesis, RSPO3 emerges as a key player, controlling vascular stability and pruning by activating the non-canonical Wnt

signaling pathway in endothelial cells. Remarkably, RSPO3 exhibits the capability to amplify the Wnt signaling pathway independently of LGR4-6 receptors, possibly through direct antagonistic interactions with RNF43 and ZNRF3. Interactions with the extracellular domain of FZD8 and LRP6, along with binding to WNT1 and LGR4, LGR5, and LGR6, underscore the intricate regulatory mechanisms orchestrated by RSPO3 in Wnt signaling modulation.

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