

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse R-Spondin 1 in direct ELISAs and Western blots. In direct ELISAs, approximately 60% cross-reactivity with recombinant human R-Spondin 1 is observed and less than 5% cross-reactivity with recombinant mouse (rm) R-Spondin 3 and rmR-S
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant mouse R-Spondin 1 (R&D Systems, Catalog # 3474-RS) Ser21-Gly209 Accession # Q9Z132
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

Western Blot	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

R-Spondin 1 (RSPO1, Roof plate-specific Spondin 1), also known as cysteine-rich and single thrombospondin domain containing protein 3 (Cristin 3), is a 27 kDa secreted protein that belongs to the R-Spondin family (1, 2). R-Spondins share around 40% aa identity. All regulate Wnt/β-catenin signaling, but have distinct expression patterns (1 - 3). Like other R-spondins, R-Spondin 1 contains two adjacent cysteine-rich furin-like domains (amino acids (aa) 34 - 135) followed by a thrombospondin (TSP-1) motif (aa 147 - 207) and a region rich in basic residues (aa 211 - 263). Only the furin-like domains are needed for β-catenin stabilization (2, 4). A putative nuclear localization signal at the C-terminus may allow some expression in the nucleus (5). R-Spondin 1 contains one potential N-glycosylation site. Over aa 21 - 209, mouse R-Spondin 1 shares 98%, 94%, 94%, 93%, 92% and 88% aa identity with rat, human, horse, cow, goat and dog RSPO-1, respectively. R-Spondin 1 is expressed in early development at the roof plate boundary and is thought to contribute to dorsal neural tube development (3, 5). In humans, rare disruptions of the R-Spondin 1 gene are associated with tendencies for XX sex reversal (phenotypic male) or hermaphroditism, indicating a role for R-Spondin 1 in gender-specific differentiation (6, 7). Disruption is also associated with palmoplantar keratosis (6, 7). Postnatally, R-Spondin 1 is expressed by neuroendocrine cells in the intestine, adrenal gland and pancreas, and by epithelia in kidney and prostate (8). Injection of recombinant R-Spondin 1 in mice causes activation of β-catenin and proliferation of intestinal crypt epithelial cells, and ameliorates experimental colitis (8, 9). R-Spondin 1 appears to regulate Wnt/β-catenin by competing with the Wnt antagonist DKK-1 for binding to the Wnt co-receptor, Kremen (10). This competition reduces internalization of DKK-1/LRP-6/Kremen complexes (10). Reports differ on whether R-Spondin 1 binds LRP-6 directly (10 - 12).

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