

## Recombinant human R-spondin 1 LR5 protein (Qk031)



**Type:** Stem cells

**Available for purchase:** Unit Size (µg): 25, 50, 100, 500, 1000

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### Product Information

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Recombinant human R-spondin 1 LR5 protein is engineered to act as a high affinity ligand for the LGR5 receptor. In epithelial tissues LGR5 marks the stem cell population. This engineered protein, R-spondin 1 LR5, activates Wnt signaling only in the LGR5+ stem cell population.

R-spondin 1 LR5 has been tested in intestinal [organoid](#) culture and supports organoid survival and growth. As LGR5 specifically marks stem cells and is not found on transit amplifying cells, the lower crypt multiplicity seen in organoid cultures with R-spondin 1 LR5 (in comparison to wild-type R-spondin 1, [Qk006](#)) supports the notion that this engineered form is acting specifically on stem cells. This specialized form of R-spondin 1 was developed in [Marc de la Roche's lab \(University of Cambridge\)](#).

**This protein is also available as GMP compliant [Cell Therapy Grade](#), to enquire email [ryan.weber@matriq.com](mailto:ryan.weber@matriq.com).**

#### Alternative protein names

Roof plate-specific spondin 1, Rspo1, R-spondin 1, Cristin 3, R spondin 1, Qk31

#### Molecular weight

13 kDa

#### Protein Uniprot number

High purity recombinant human R-spondin 1 LR5 protein. Binds with high affinity to LGR5 receptor.

#### Species reactivity

- human

## **Product Information**

- >98%, by SDS-PAGE quantitative densitometry
- Expressed in *E. coli*
- Animal origin-free (AOF) and carrier protein-free
- Manufactured in our Cambridge, UK laboratories
- Lyophilized from acetonitrile, TFA

## **Reconstitution instructions**

- Resuspend in 10 mM HCl (Reconstitution solution A) at >50 µg/ml

## **Featured applications**

- Intestinal organoid culture
- Tumor organoid culture

## **Further quality assays**

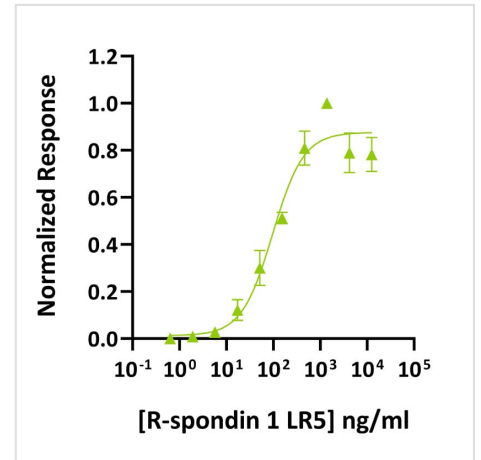
- Mass spectrometry: single species with expected mass
- Recovery from stock vial: >95%
- Endotoxin: <0.05 EU/µg protein

## Scientific Information

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### Bioactivity

R-spondin 1 enhances Wnt signalling in TOP-Flash reporter assay. HEK293T cells transfected with Wnt-responsive firefly luciferase reporter TOP-FLASH were treated with increasing concentrations of Qk031 R-spondin 1 LR5 (diluted in DMEM with 0.5 % of FCS), in the presence of Wnt-conditioned media (1:8 dilution), in triplicate. Cells were grown overnight and luciferase activity measured by luminescence. Data from Qk031 lot #204574. EC50 = 97 ng/ml (7.7 nM).



### Purity

R-spondin 1 LR5 migrates as a single band at 16 kDa in non-reducing (NR) and 13 kDa in reducing (R) conditions. Purified recombinant protein (1 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptoethanol, R) and non-reduced conditions (NR) and stained with Coomassie Brilliant Blue R250. Data from Qk031 lot #104286.



**Original product page:** <https://ryan.calliope-alpha.ts.net/product/recombinant-human-r-spondin-1-lr5-protein-qk031/>

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