

## Recombinant human R-spondin 1 protein (Qk006)



**Type:** Stem cells

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

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### Product Information

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R-spondin 1 protein (RSPO1) is the prototypic member of the [R-spondin family](#) and is used to potentiate Wnt signaling in many [organoid culture](#) systems including intestinal and tumor (cancer) organoid culture. R-spondin 1 is also required for [hematopoietic stem cell](#) specification and cancer cell migration and survival.

Recombinant human R-spondin 1 protein (RSPO1) protein is the bioactive domain of human R-spondin 1 comprising the two cysteine-rich furin-like domains of R-spondin 1. Those are necessary and sufficient for Wnt signaling potentiation and are the essential domains for activity in stem cell and organoid culture.

This protein has a molecular weight of 13 kDa and is [animal origin-free](#) (AOF), carrier protein-free, and tag-free to ensure its purity with exceptional lot-to-lot consistency. Qk006 is suitable to replace R-spondin conditioned media for improved reproducibility in chemically defined organoid culture media.

**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, Qk6, Qk06

### Molecular weight

13 kDa

### Protein Uniprot number

High purity recombinant human R-spondin 1 protein (Uniprot: Q2MKA7)

### Species reactivity

- human
- species similarity:
- mouse - 96%
- rat - 96%
- bovine - 94%
- porcine - 98%

### 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

- Pancreatic tumor [organoid culture](#)
- Maintenance of urine-derived stem cells

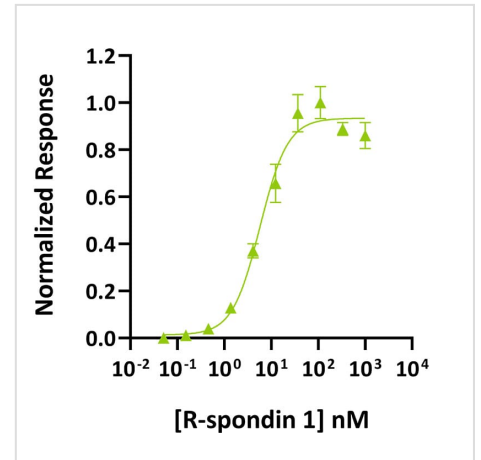
### Further quality assays

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

## Scientific Information

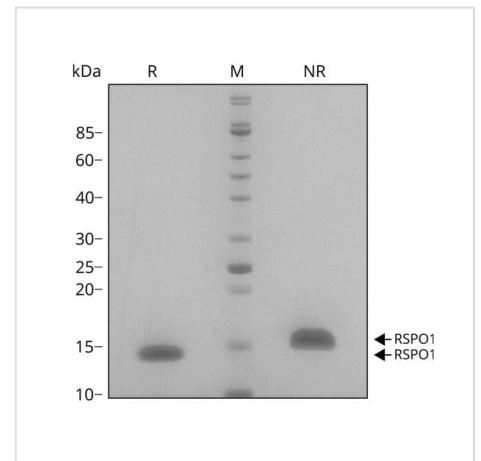
### Bioactivity

R-spondin 1 (Qk006) activity was determined using the Wnt-responsive firefly luciferase reporter assay as it enhances Wnt- $\beta$  catenin signaling in HEK239T cells. HEK293T cells transfected with reporter TOP-FLASH are treated in triplicate with increasing concentration of R-spondin 1 (diluted in DMEM with 0.5 % of FCS), in the presence of Wnt-conditioned media (1:8 dilution). Cells are grown overnight, and luciferase activity is measured and normalized. EC50 = 5.8 nM (75.1 ng/mL). Data from Qk006 lot #104277.



### Purity

R-spondin 1 migrates as a single band at 16 kDa in non-reducing (NR) and 13 kDa in reducing (R) conditions. Purified recombinant protein (7  $\mu$ g) was resolved using 15% w/v SDS-PAGE in reduced (+ $\beta$ -mercaptoethanol, R) and non-reduced conditions (NR) and stained with Coomassie Brilliant Blue R250. Data from Qk006 lot #010.



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

**PDF generated:** 12 May 2026

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