

## Recombinant human R-spondin 3 protein (Qk032)



**Type:** Stem cells

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

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### Product Information

Human R-spondin 3 protein potentiates Wnt signaling in and has been shown to function in crypt regeneration in the intestine and control stem cell and progenitor cell behavior during kidney development. R-spondin 3 is used alongside R-spondin 1 in intestinal [organoid](#) culture systems.

Qk032 is a 17 kDa highly pure, bioactive domain of human R-spondin 3 comprising the two cysteine-rich furin-like domains, which are necessary and sufficient for Wnt signalling potentiation and are the essential domains for activity in stem cell and organoid culture, [animal origin-free](#) and carrier-protein free.

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

### Alternative protein names

R-spondin-3, RSPO3, RSPO-3, Protein with TSP type-1 repeat, PWTSR, Roof plate-specific spondin-3, Thrombospondin type-1 domain-containing protein 2, THSD2, , R spondin 3, Qk32

### Molecular weight

17 kDa

### Protein Uniprot number

High purity bioactive domain of human R-spondin 3 protein (Uniprot: Q9BXY4)

### Species reactivity

- human
- species similarity:
- mouse - 97%
- rat - 97%
- bovine - 98%
- 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**

- Chemically defined media for organoid culture
- Intestinal organoid culture
- Tumor organoid culture

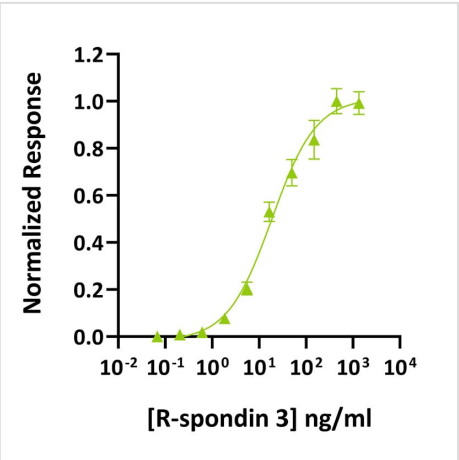
### **Further quality assays**

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

# Scientific Information

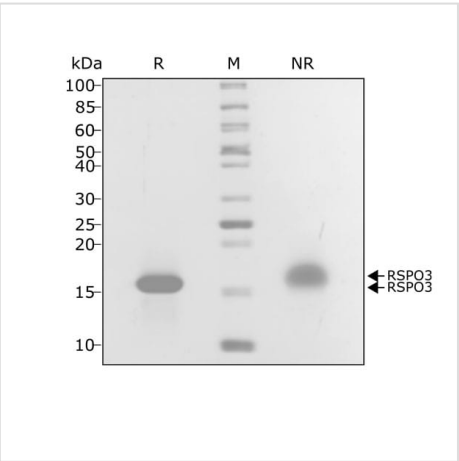
## Bioactivity

R-spondin 3 activity was determined using the Wnt-responsive firefly luciferase reporter assay. HEK293T cells transfected with reporter TOP-FLASH were treated in triplicate with increasing concentrations of R-spondin 3 in the presence of Wnt-conditioned media (1:8 dilution). RSP1 enhances Wnt- $\beta$  catenin signaling in HEK293T cells. Cells were grown overnight, and luciferase activity is measured and normalized. EC50 = 0.3 nM (5 ng/ml). Data from Qk032 #010.



## Purity

R-spondin 3 bioactive domain migrates at 17 kDa in non-reducing (- $\beta$ ME) conditions and upon reduction (+ $\beta$ ME). 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 Qk032 lot #010.



Original product page: <https://qkine.com/product/recombinant-human-rspondin-3-protein/>

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