



Certificate of Origin

Catalog Number	Product Name	Lot Number	Animal-Free (No animal or human-origin components)
100-208	Human R-Spondin-1	1117-100-208	No

Documentation Date: January 15, 2019

Harmonizing Code: 3504001000

Country of Origin: USA

Manufacture:

Shenandoah Biotechnology
101 Camars Drive
Warwick , PA 18974
USA

This recombinant protein was manufactured at Shenandoah Biotechnology in Warwick, Pennsylvania, USA. It was expressed in CHO cells, grown in standard media, and purified.

This product is supplied carrier free. Materials of animal and/or human origin may have been used in the manufacture of this recombinant protein and no viral testing was done.

Type of Manufacture (ie. chemical synthesis, fermentation, biological extraction/purification):

This product is a recombinant protein produced by fermentation in standard media and purification protocols.

Sub-Type (If chemical, organic or inorganic? If fermentation, microbial or plant?): Microbial expression

Always non-animal source: No

Is there any comingling with other animal materials in manufacturing process: Yes

Viral Testing: No

Carrier Protein: No

Genetically Modified Organism: This product is derived from a genetically modified organism, in which human, mouse, or rat genes have been added to CHO cells, with the purpose of producing genetically engineered research products.

Expiration Date:

12 months from date of receipt when stored at -20°C to -80°C as supplied.

1 month when stored at 4°C after reconstituting as directed.

3 months when stored at -20°C to -80°C after reconstituting as directed.

X *Olivia Schneider, PhD 2019-01-15*

Olivia Schneider, PhD (YYYY-MM-DD)
Chief Scientific Officer