



Certificate of Origin

Catalog Number	Product Name	Lot Number	Animal-Free (No animal or human-origin components)
100-91	Human IL-22	0608-100-91	No

Documentation Date: May 23, 2017

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 *E.coli*, 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 *E.coli*, 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 7-6-17*

Olivia Schneider, PhD
Chief Scientific Officer