CERTIFICATE OF ORIGIN

Revision Date 17 Feb. 2026

ISOkine

PREMIUM GRADE GROWTH FACTORS AND CYTOKINES

Animal-Free | Endotoxin-Free | Carrier-Free

TNF-alpha, human, recombinant

DESCRIPTION

PRODUCT NAME	ISOkine® TNF-alpha
SOURCE	Barley (*Hordeum vulgare*)
CATALOG NO.	IK2600

MANUFACTURER INFORMATION

COMPANY NAME	ORF Genetics
ADDRESS	Víkurhvarf 7, 203 Kópavogur, Iceland
TYPE OF MANUFACTURER	Growth factor producer
COUNTRY OF ORIGIN	Iceland (IS 203)

DECLARATION

ORF Genetics ISOkine® human TNF-alpha is a plant based recombinant protein that contains 157 amino acids and 16 amino acid histidine-based tag for a total length of 173 amino acids and has a predicted molecular mass of 18.2 kDa. Human TNF-alpha is produced in the endosperm tissue of barley grain (*Hordeum vulgare*) and is animal-free and serum-free. The preparation does not contain any animal derived additives, such as albumin. The recombinant protein is for *in vitro* use only. ORF Genetics facilities handles no exotic viruses affecting livestock and avian species. Human TNF-alpha is a recombinant protein that contains no genes and expresses no products of exotic livestock or poultry disease agents.

ORF Genetics growth factors are manufactured under controlled conditions compliant with ISO 9001:2015 quality standards.

APPROVED BY

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Environmental & Quality Manager

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ORF GENETICS