

## Alloferon 1

## Chemical Properties

CAS No. :	347884-61-1
Formula:	C52H76N22O16
Molecular Weight:	1265.3
Storage:	Keep away from moisture, Keep away from direct sunlight, Powder: -20°C for 3 years   In solvent: -80°C for 1 year <small>Actual storage temperature shall be subject to the COA.</small>

## Biological Description

Description	Alloferon 1 is a peptide with both antiviral and antitumor activities. It is capable of stimulating natural cytotoxicity of human peripheral blood lymphocytes, inducing the synthesis of interferon (IFN), and enhancing host resistance against viruses and tumors in mouse models. Additionally, Alloferon 1 exhibits anti-inflammatory effects in a $\lambda$ -carrageenan-induced paw edema model. Alloferon 1 can be isolated from the blood of the dipteran blowfly <i>Calliphora vicina</i> .
Targets(IC50)	Immunology/Inflammation related
In vitro	<p>Method: Human peripheral blood lymphocytes were incubated with various concentrations of synthetic Alloferon 1 (0.05-0.5 ng/ml). NK cell activity was assessed using a [<sup>3</sup>H]uridine-labeled cytotoxicity assay with K562 tumor cells as targets.</p> <p>Result: Alloferon 1 significantly stimulated natural killer (NK) activity of human peripheral blood lymphocytes at concentrations ranging from 0.05 to 0.5 ng/ml, with an effect comparable to that of recombinant IFN-<math>\alpha</math>2b [1].</p> <p>Method: Whole blood cells from healthy humans were incubated with Alloferon 1 (0.4 <math>\mu</math>g/ml) at 37°C for 2-28 h. After centrifugation, the supernatant was added to human lung cancer cell line L-41. The cells were then infected with vesicular stomatitis virus (VSV), and IFN activity was determined by crystal violet staining.</p> <p>Result: Alloferon 1 induced IFN production in human leukocytes, showing an inducing capacity similar to that of staphylococcal enterotoxin A (SEA) and superior to that of the approved inducer cycloferon [1].</p>
In vivo	<p>Method: NMR1 mice were intranasally administered Alloferon 1 (25 <math>\mu</math>g, approximately 1.25 mg/kg). Blood samples were collected at various time points (0-48 h), and IFN activity in plasma was measured using a cytopathic effect inhibition assay (L-929 cells + VSV).</p> <p>Result: Following intranasal administration, Alloferon 1 induced two peaks of IFN concentration in mouse plasma, occurring at 6 h and 24 h post-administration, suggesting its ability to induce IFN synthesis in vivo [1].</p> <p>Method: NMR1 mice were intranasally inoculated with influenza virus A (Aichi/2/68) or B (Lee/1/40). Alloferon 1 (25 <math>\mu</math>g) was administered intranasally or subcutaneously one day before viral infection and on days 1, 2, 4, 6, and 8 post-infection. Mortality was observed over a 10-day period.</p>

In vivo	<p>Result: Alloferon 1 significantly reduced the mortality rate of mice infected with influenza virus A and B. Its antiviral effect was comparable to that of ribavirin (200 µg) and slightly inferior to that of Remantadin (1 mg), although the latter was used at a dose approximately 40 times higher than that of Alloferon 1 [1].</p> <p>Method: Male BALB/c mice were intraperitoneally injected with Alloferon-1 (22 mg/kg) 6 h prior to λ-carrageenan-induced paw edema. After induction, paw thickness, vascular permeability (Evans blue extravasation), histopathological changes, peripheral blood leukocyte counts, and serum expression of inflammatory factors (Luminex array, Western blot) were measured.</p> <p>Result: Alloferon-1 significantly reduced λ-carrageenan-induced paw swelling in mice (23.03% inhibition rate), decreased neutrophil infiltration, reduced total leukocyte and neutrophil counts, inhibited vascular permeability (19.63% inhibition rate), and downregulated the serum expression of inflammatory factors such as IL-1β, IL-2, IL-4, IL-5, IL-12(P40), MIP-1α, MIP-1β, MCP-1, GM-CSF, and TNF-α [2].</p>
---------	---

### Solubility Information

Solubility	<p>DMSO: 3.64 mg/mL (2.88 mM), Sonication is recommended.</p> <p>H2O: 80 mg/mL (63.23 mM)</p> <p>(&lt; 1 mg/ml refers to the product slightly soluble or insoluble)</p>
------------	---

### Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	0.7903 mL	3.9516 mL	7.9033 mL
5 mM	0.1581 mL	0.7903 mL	1.5807 mL
10 mM	0.079 mL	0.3952 mL	0.7903 mL
50 mM	0.0158 mL	0.079 mL	0.1581 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

### Reference

- Chernysh S, et al. Antiviral and antitumor peptides from insects. Proc Natl Acad Sci U S A. 2002;99(20):12628-12632.
- Zhang X, et al. Alloferon-1 ameliorates acute inflammatory responses in λ-carrageenan-induced paw edema in mice. Sci Rep. 2022;12(1):16689. Published 2022 Oct 6.

**Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins**

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

Tel:781-999-4286 E\_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481