

Human IL-12 (CHO) premium grade

Contents

1. Description

1.1 Background information

1.2 Applications

2. References

1. Description

Products	Human IL-12 (CHO), premium grade. Recombinant human interleukin 12.										
	<table border="1"> <thead> <tr> <th>Content in µg</th><th>Order no.</th></tr> </thead> <tbody> <tr> <td>10</td><td>130-129-721</td></tr> <tr> <td>25</td><td>130-129-720</td></tr> <tr> <td>100</td><td>130-129-719</td></tr> <tr> <td>1000</td><td>130-129-718</td></tr> </tbody> </table>	Content in µg	Order no.	10	130-129-721	25	130-129-720	100	130-129-719	1000	130-129-718
Content in µg	Order no.										
10	130-129-721										
25	130-129-720										
100	130-129-719										
1000	130-129-718										
Biological activity	<p>The ED₅₀ is ≤0.33 ng/mL corresponding to an activity of ≥3×10⁶ U/mg. Lot-specific activities are stated in the Certificate of Analysis (www.miltenyibiotec.com/certificates).</p> <p>▲ Note: The ED₅₀ is determined by induction of IFN-γ secretion by PHA-activated T cells.¹ The proliferation assay was calibrated with the reference reagent for human IL-12 (NIBSC code 95/544) provided by the WHO/National Institute for Biological Standards and Control.</p>										
Primary structure	Glycosylated single-chain polypeptide, p40 and p35 fused by a flexible linker region (524 amino acid residues).										
Molecular mass	58.9 kDa (calculated) 80 kDa (SDS-PAGE under reducing conditions)										
Source	Produced in CHO cells.										
Product format	Lyophilized from a filtered (0.2 µm) buffer solution.										
Stabilizer	Mannitol and trehalose.										
Purity	>97% as determined by SDS-PAGE analysis.										
Endotoxin level	Low endotoxin (<0.1 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.										
Storage	Lyophilized Human IL-12 (CHO), premium grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.										

Reconstitution It is recommended to reconstitute lyophilized Human IL-12 (CHO), premium grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

1.1 Background information

Interleukin 12 (IL-12) is a heterodimeric proinflammatory cytokine and a modulator of cell-mediated immunity, which is mainly produced by macrophages, dendritic cells, and B cells. IL-12 stimulates the production and secretion of several cytokines, in particular IFN-γ, by NK cells and T cells, induces proliferation, and enhances the cytotoxic activity within these cell populations. Another important activity of IL-12, acting together with IFN-γ and IL-2, is to drive T helper cell responses toward the T_H1 rather than the T_H2 phenotype. Moreover, IL-12 is also important in resistance to viral disease and has significant antitumor activity. It has been shown that single chain fusion proteins of naturally occurring heterodimeric cytokines such as IL-12 or IL-23 are bioactive *in vitro* and *in vivo*.

1.2 Applications

Human IL-12 (CHO) can be used for a variety of applications, including:

- *In vitro* differentiation of naive CD4⁺ T cells towards T_H1 cells.
- *In vitro* proliferation and stimulation of cytotoxic activity of NK cells and T cells.

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. Wulff, H. *et al.* (2007) Cloning and characterization of an adenoviral vector for highly efficient and doxycycline-suppressible expression of bioactive human single-chain interleukin 12 in colon cancer. *BMC Biotechnol.* 7: 35.

Refer to www.miltenyibiotec.com for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com for local Miltenyi Biotec Technical Support contact information.

Legal notices

Limited product warranty

Miltenyi Biotec B.V. & Co. KG and/or its affiliate(s) warrant this product to be free from material defects in workmanship and materials and to conform substantially with Miltenyi Biotec's published specifications for the product at the time of order, under normal use and conditions in accordance with its applicable documentation,

for a period beginning on the date of delivery of the product by Miltenyi Biotec or its authorized distributor and ending on the expiration date of the product's applicable shelf life stated on the product label, packaging or documentation (as applicable) or, in the absence thereof, ONE (1) YEAR from date of delivery ("Product Warranty"). Miltenyi Biotec's Product Warranty is provided subject to the warranty terms as set forth in Miltenyi Biotec's General Terms and Conditions for the Sale of Products and Services available on Miltenyi Biotec's website at www.miltenyibiotec.com, as in effect at the time of order ("Product Warranty"). Additional terms may apply. BY USE OF THIS PRODUCT, THE CUSTOMER AGREES TO BE BOUND BY THESE TERMS.

THE CUSTOMER IS SOLELY RESPONSIBLE FOR DETERMINING IF A PRODUCT IS SUITABLE FOR CUSTOMER'S PARTICULAR PURPOSE AND APPLICATION METHODS.

Technical information

The technical information, data, protocols, and other statements provided by Miltenyi Biotec in this document are based on information, tests, or experience which Miltenyi Biotec believes to be reliable, but the accuracy or completeness of such information is not guaranteed. Such technical information and data are intended for persons with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. Miltenyi Biotec shall not be liable for any technical or editorial errors or omissions contained herein.

All information and specifications are subject to change without prior notice. Please contact Miltenyi Biotec Technical Support or visit www.miltenyibiotec.com for the most up-to-date information on Miltenyi Biotec products.

Licenses

This product and/or its use may be covered by one or more pending or issued patents and/or may have certain limitations. Certain uses may be excluded by separate terms and conditions. Please contact your local Miltenyi Biotec representative or visit Miltenyi Biotec's website at www.miltenyibiotec.com for more information.

The purchase of this product conveys to the customer the non-transferable right to use the purchased amount of the product in research conducted by the customer (whether the customer is an academic or for-profit entity). This product may not be further sold. Additional terms and conditions (including the terms of a Limited Use Label License) may apply.

CUSTOMER'S USE OF THIS PRODUCT MAY REQUIRE ADDITIONAL LICENSES DEPENDING ON THE SPECIFIC APPLICATION. THE CUSTOMER IS SOLELY RESPONSIBLE FOR DETERMINING FOR ITSELF WHETHER IT HAS ALL APPROPRIATE LICENSES IN PLACE. Miltenyi Biotec provides no warranty that customer's use of this product does not and will not infringe intellectual property rights owned by a third party. BY USE OF THIS PRODUCT, THE CUSTOMER AGREES TO BE BOUND BY THESE TERMS.

Trademarks

The Miltenyi Biotec logo is a registered trademark or trademark of Miltenyi Biotec and/or its affiliates in various countries worldwide.

Copyright © 2021 Miltenyi Biotec and/or its affiliates. All rights reserved.