

### Contents

#### 1. Description

##### 1.1 Background information

##### 1.2 Applications

#### 1. Description

| <b>Products</b>            | Human IFN- $\beta$ 1a, research grade.<br>Recombinant human interferon $\beta$ 1a.  |                    |           |   |             |    |             |
|----------------------------|---|--------------------|-----------|---|-------------|----|-------------|
|                            | <table> <tr> <th>Content in <math>\mu</math>g</th><th>Order no.</th></tr> <tr> <td>5</td><td>130-107-889</td></tr> <tr> <td>20</td><td>130-107-888</td></tr> </table>   | Content in $\mu$ g | Order no. | 5 | 130-107-889 | 20 | 130-107-888 |
| Content in $\mu$ g         | Order no.   |                    |           |   |             |    |             |
| 5                          | 130-107-889   |                    |           |   |             |    |             |
| 20                         | 130-107-888   |                    |           |   |             |    |             |
| <b>Biological activity</b> | The ED <sub>50</sub> is $\leq 0.1$ ng/mL corresponding to an activity of $\geq 1 \times 10^7$ U/mg.<br><b>Note:</b> The ED <sub>50</sub> is determined by cytotoxicity assay using TF-1 cells.  |                    |           |   |             |    |             |
| <b>Primary structure</b>   | Single, glycosylated polypeptide chain including N-terminal methionine (166 amino acid residues).   |                    |           |   |             |    |             |
| <b>Molecular mass</b>      | 20 kDa.   |                    |           |   |             |    |             |
| <b>Source</b>              | Produced in CHO cells.  |                    |           |   |             |    |             |
| <b>Product format</b>      | Lyophilized from a filtered (0.2 $\mu$ m) buffer solution.  |                    |           |   |             |    |             |
| <b>Stabilizer</b>          | None.   |                    |           |   |             |    |             |
| <b>Purity</b>              | >95% as determined by SDS-PAGE analysis.  |                    |           |   |             |    |             |
| <b>Endotoxin level</b>     | Low endotoxin (<1.0 EU/ $\mu$ g cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.  |                    |           |   |             |    |             |
| <b>Storage</b>             | Lyophilized Human IFN- $\beta$ 1a, research 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.  |                    |           |   |             |    |             |
| <b>Reconstitution</b>      | It is recommended to reconstitute lyophilized Human IFN- $\beta$ 1a, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 50 $\mu$ L. 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

Interferon beta (IFN- $\beta$ ) is a monomeric protein and belongs together with IFN- $\alpha$  to the type I interferon family. It shares with IFN- $\alpha$  the same dimeric receptor (IFN- $\alpha$  R1/R2). IFN- $\beta$  is produced by virally infected cells and fibroblasts, and bears a strong non-specific anti-viral activity, including activation of cytotoxic cells. However, IFN- $\beta$  can also modulate immune cell proliferation and MHC class I-mediated antigen presentation, and is therefore under investigation as treatment against autoimmune diseases, such as multiple sclerosis. A role for IFN- $\beta$  has been identified also in control of solid tumor development, and local tumor treatments with IFN- $\beta$  are under investigation for several cancer conditions. IFN- $\beta$  is usually produced as recombinant protein in two variants: IFN- $\beta$ 1a and IFN- $\beta$ 1b. IFN- $\beta$ 1a is manufactured in mammalian cells (CHO cells), its sequence is identical to the natural form, and carries glycosylations. IFN- $\beta$ 1b is a mutated form with one amino acid exchange, expressed in *E. coli*. IFN- $\beta$  is active only in species-specific way.

#### 1.2 Applications

Human IFN- $\beta$ 1a can be used for a variety of applications, including:

- Culture of myeloid and lymphoid cells in studies of anti-viral immune response.
- Investigation of tumor cell growth and modulation of autoimmunity.
- Study of intracellular signal transduction via activation of IFN type I receptor.

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

Refer to [www.miltenyibiotec.com](http://www.miltenyibiotec.com) for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit [www.miltenyibiotec.com/local](http://www.miltenyibiotec.com/local) to find your nearest Miltenyi Biotec contact.

### 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](http://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](http://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](http://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.