Recombinant Human IL-17E/IL-25 GMP

Catalog Number: 1258-GMP

DESCRIPTION

Source	*E. coli*-derived Tyr33-Gly177, with an N-terminal Met Accession # Q9H293 Manufactured and tested under cGMP guidelines.
N-terminal Sequence Analysis	Met-Tyr-Ser-His-Trp-Pro-Ser-(Cys)-(Cys)-Pro
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	17 kDa (monomer)

SPECIFICATIONS

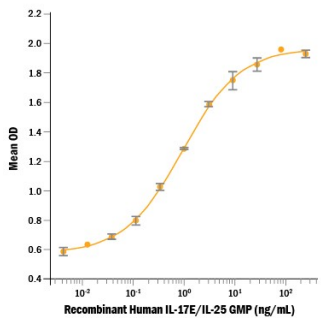
Activity	Measured by its ability to induce CXCL1/GROα secretion in HT-29 human colon adenocarcinoma cells. The ED_{50} for this effect is 0.25-1.5 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE with silver staining, under reducing conditions.
Host Cell Protein	<0.5 ng per µg of protein when tested by ELISA.
Mycoplasma	Negative when tested in a ribosomal RNA hybridization assay.
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 4 mM HCl.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● A minimum of 6 months when stored at ≤ -20 °C as supplied. Refer to lot specific COA for the Use by Date. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, ≤ -20 °C under sterile conditions after reconstitution.

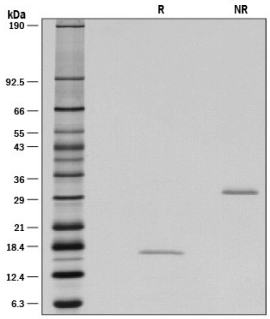
DATA

Bioactivity



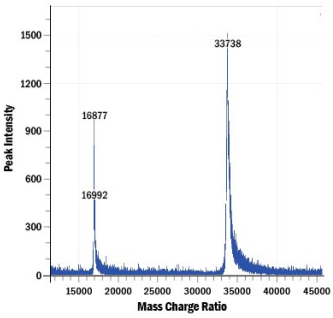
GMP-grade Recombinant Human IL-17E/IL-25 (Catalog # 1258-GMP) induces CXCL1/GROα secretion in the HT-29 human colon adenocarcinoma cell line. The ED_{50} for this effect is 0.25-1.5 ng/mL.

SDS-PAGE



1 µg/lane of GMP-grade Recombinant Human IL-17E/IL-25 (Catalog # 1258-GMP) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 17 kDa and 31 kDa, respectively.

Mass Spectrometry



MALDI-TOF analysis of GMP-grade Recombinant Human IL-17E (Catalog # 1258-GMP). The major peak at 33738 corresponds to the measured molecular weight of the intact dimeric protein. The calculated mass for a monomer is 16873 Da.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

Recombinant Human IL-17E/IL-25 GMP

Catalog Number: 1258-GMP

BACKGROUND

The Interleukin-17 (IL-17) family of proteins are immunoregulatory cytokines that share a conserved cysteine-rich region. IL-17E, which is also known as IL-25, promotes Th2-biased immune responses. This is in contrast to other IL-17 family members which promote Th1- and Th17-biased inflammation. IL-25 is an important mediator of allergic reactions and protection against intestinal parasites (1, 2). Mature human IL-25 shares 80% amino acid sequence identity with mouse and rat IL-25 (3, 4). During helminth infections and allergic reactions, IL-25 is locally up-regulated in intestinal and airway epithelial cells, atopic dermatitis skin lesions, and local Th2 cells, eosinophils, and basophils (4-9). It binds to IL-17 RB but also requires IL-17 RA to exert its activity (3, 8, 10). IL-25 acts on a variety of cell types which respond with increased production of Th2 cytokines (*e.g.* IL-4, IL-5, IL-13) and reduced production of Th1 and Th17 cytokines (*e.g.* IFN-γ, IL-12, IL-23, IL-17A, IL-17F) (4-6, 8, 9, 11-15). Airway IL-25 can be activated by MMP-7, a protease that is up-regulated in airway epithelium in response to allergen exposure (16). Cleaved IL-25 shows enhanced binding to IL-17 RB and stronger induction of Th2 cytokines (16). The Th2 cytokines, in turn, trigger expansion of Th2 memory cells and anti-inflammatory M2 macrophages, increased eosinophil mobilization and activation, and dendritic cell migration (4, 6, 9, 13). These actions promote protective anti-helminth immune responses (4, 5) as well as allergic inflammation and airway hyperreactivity (11). The IL-25 induced suppression of Th1 and Th17 cytokines limits Th17 cell expansion and disease pathology in autoimmunity and colitis (12, 15). IL-25 also promotes vascular endothelial cell proliferation and assembly into tubular structures (7). It supports the integrity of the blood-brain barrier and limits $CD4^+$ T cell infiltration into the brain (17).

References:

1. Saadoun, D. *et al.* (2011) Curr. Pharm. Des. **17**:3781.
2. Iwakura, Y. *et al.* (2011) Immunity **34**:149.
3. Lee, J. *et al.* (2001) J. Biol. Chem. **276**:1660.
4. Fort, M.M. *et al.* (2001) Immunity **15**:985.
5. Zhao, A. *et al.* (2010) J. Immunol. **185**:6921.
6. Suzukawa, M. *et al.* (2012) J. Immunol. **189**:3641.
7. Corrigan, C.J. *et al.* (2011) Proc. Natl. Acad. Sci. USA **108**:1579.
8. Petersen, B.C. *et al.* (2012) Nat. Med. **18**:751.
9. Wang, Y.-H. *et al.* (2007) J. Exp. Med. **204**:1837.
10. Rickel, E.A. *et al.* (2008) J. Immunol. **181**:4299.
11. Hurst, S.D. *et al.* (2002) J. Immunol. **169**:443.
12. Kleinschek, M.A. *et al.* (2007) J. Exp. Med. **204**:161.
13. Cao, Q. *et al.* (2011) J. Am. Soc. Nephrol. **22**:1229.
14. Stock, P. *et al.* (2009) J. Immunol. **182**:5116.
15. Caruso, R. *et al.* (2009) Gastroenterology **136**:2270.
16. Goswami, S. *et al.* (2009) Nat. Immunol. **10**:496.
17. Sonobe, Y. *et al.* (2009) J. Biol. Chem. **284**:31834.

MANUFACTURING SPECIFICATIONS

GMP Proteins

R&D Systems, a Bio-Techne Brand's GMP proteins are produced according to relevant sections of the following documents: WHO TRS, No. 822, 1992 Annex 1, Good Manufacturing Practices for Biological Products; USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and USP Chapter 92, Growth Factors and Cytokines Used in Cell Therapy Manufacturing.

R&D Systems' quality focus includes:

- Manufactured and tested under an ISO 9001:2015 and ISO 13485:2016 certified quality system
- Documented processes and QA control of documentation and process changes
- Personnel training programs
- Raw material testing and vendor qualification/monitoring
- Fully validated equipment, processes and test methods
- Equipment calibration schedules using a computerized calibration program
- Facility maintenance, safety programs and pest control
- Material review process for variances
- Monitoring of stability over product shelf-life

R&D Systems strives to provide our customers with the analytical characteristics of each product so that customers may determine whether our products are appropriate for their research. The Certificate of Analysis provided contains the following lot specific information:

- N-terminal amino acid analysis, SDS-PAGE analysis, and endotoxin level (as determined by LAL assay) performed on each bulk QC lot, not on individual bottlings of each QC lot
- Post-bottling lot-specific bioassay results (compliance with an established range) and results of microbial bioburden testing (using broth culture, Sabourand's dextrose and blood agar plates with results reported at 3 days and at 7 days)
- Host Cell Protein testing performed by ELISA
- Mycoplasma testing by ribosomal RNA hybridization assay

Additional testing and documentation requested by the customer can be arranged at an additional cost. Testing may include, but is not limited to, USP <61> bioburden testing, positive identity testing, testing for adventitious agents and testing for residual host cell content.

Production records and facilities are available for examination by appropriate personnel on-site at R&D Systems in Minneapolis, Minnesota USA.

R&D Systems sells its GMP grade recombinant protein products for research use or further manufacturing use in *ex vivo* cell therapy applications. They are not for *in vivo* use or for use as therapeutic or other drugs, biologic products or devices. Please read the following End User Terms prior to using this product.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

PRODUCT SPECIFIC NOTICES

END USER TERMS OF USE OF PRODUCT

The following terms are offered to you upon your acceptance of these End User Terms of Use of Product. By using this product, you indicate your acknowledgment and agreement to these End User Terms of Use of Product. If you do not agree to be bound by and comply with all of the provisions of these End User Terms of Use of Product, you should contact your supplier of the product and make arrangements to return the product.

We suggest you print and retain a copy of these End User Terms of Use of Product for your records.

The End User is aware that R&D Systems, Inc. sells its GMP products for research use only or further manufacturing and not for *in vivo* use, the production of therapeutics or other drugs or for biologic products or devices. The End User further agrees, as a condition of the sale of R&D Systems' GMP products that: a) the End User will not use this GMP Product in any procedure wherein the product may be directly or indirectly administered to humans, unless the End User has obtained, or prior to their use will have obtained, an Investigational New Drug (IND) exemption from the FDA and will use the product only in accordance with the protocols of such IND and of the Institutional Review Board overseeing the proposed research, or b) the End User will use the products outside of the United States in accordance with the protocols of research approved by the Institutional Review Board or authorized ethics committee and regulatory agencies to which the End User is subject to in their territory.

R&D Systems, Inc. has the right, at its sole discretion, to modify, add or remove any terms or conditions of these End User Terms of Use without notice or liability to you. Any changes to these End User Terms of Use are effective immediately following the printing of such changes on this product insert. The most recent version of these End User Terms of Use of Product may be found at: RnDSystems.com/Legal.

You agree to review these End User Terms of Use of Product to ensure any subsequent use by you of R&D Systems' GMP Products following changes to these End User Terms of Use of Product constitutes your acceptance of all such changes.

TERMS AND CONDITIONS

The following limitation applies to R&D Systems' warranty and liability for damages: All products are warranted to meet R&D Systems' published specifications when used under normal laboratory conditions.

R&D SYSTEMS DOES NOT MAKE ANY OTHER WARRANTY OR REPRESENTATION WHATSOEVER, WHETHER EXPRESS OR IMPLIED, WITH RESPECT TO ITS PRODUCTS. IN PARTICULAR, R&D SYSTEMS DOES NOT MAKE ANY WARRANTY OF SUITABILITY, NONINFRINGEMENT, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

NOTWITHSTANDING ANY OTHER PROVISIONS OF THESE TERMS AND/OR ANY OTHER AGREEMENT BETWEEN R&D SYSTEMS AND PURCHASER FOR THE PURCHASE OF THE PRODUCTS, R&D SYSTEMS' TOTAL LIABILITY TO PURCHASER ARISING FROM OR IN RELATION TO THESE TERMS, AN AGREEMENT BETWEEN THE PARTIES OR THE PRODUCTS, WHETHER ARISING IN CONTRACT, TORT OR OTHERWISE SHALL BE LIMITED TO THE TOTAL AMOUNT PAID BY PURCHASER TO R&D SYSTEMS FOR THE APPLICABLE PRODUCTS. IN NO EVENT WILL R&D SYSTEMS BE LIABLE FOR THE COST OF PROCUREMENT OF SUBSTITUTE GOODS.

Full details of R&D Systems' Terms and Conditions of Sale can be found online at: RnDSystems.com/Legal.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449