

DESCRIPTION

Source	<i>E. coli</i> -derived mouse IL-10 protein Ser19-Ser178 Accession # NP_034678
N-terminal Sequence Analysis	Ser19
Structure / Form	Noncovalently-linked homodimer
Predicted Molecular Mass	18 kDa

SPECIFICATIONS

SDS-PAGE	17 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using MC/9-2 mouse mast cells. Thompson-Snipes, L. <i>et al.</i> (1991) <i>J. Exp. Med.</i> 173 :507. The ED ₅₀ for this effect is 0.1-0.6 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

<p>Bioactivity</p> <p>Recombinant Mouse IL-10 Protein Bioactivity Recombinant Mouse IL-10 (Catalog # 417-ML/CF) stimulates cell proliferation of the MC/9-2 mouse mast cell line. The ED₅₀ for this effect is 0.1-0.6 ng/mL.</p>	<p>SDS-PAGE</p> <p>Recombinant Mouse IL-10 Protein SDS-PAGE 1 µg/lane of Recombinant Mouse IL-10 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 17 kDa.</p>
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BACKGROUND

Interleukin 10, also known as cytokine synthesis inhibitory factor (CSIF), is the charter member of the IL-10 family of α -helical cytokines that also includes IL-19, IL-20, IL-22, and IL-24 (1, 2). IL-10 is secreted by many activated hematopoietic cell types as well as hepatic stellate cells, keratinocytes, and placental cytotrophoblasts (2-5). Mature mouse IL-10 shares 85% amino acid sequence identity with rat and 70%-77% with bovine, canine, equine, feline, human, ovine, and porcine IL-10. Whereas human IL-10 is active on mouse cells, mouse IL-10 does not act on human cells (6, 7). IL-10 is a 178 amino acid molecule that contains two intrachain disulfide bridges and is expressed as a 36 kDa noncovalently associated homodimer (8-10). The IL-10 dimer binds to two IL-10 R α /IL-10 R1 chains, resulting in recruitment of two IL-10 R β /IL-10 R2 chains and activation of a signaling cascade involving JAK1, TYK2, and STAT3 (11). IL-10 R β does not bind IL-10 by itself but is required for signal transduction (1). IL-10 R β also associates with IL-20 R α , IL-22 R α , or IL-28 R α to form the receptor complexes for IL-22, IL-26, IL-28, and IL-29 (12-14). IL-10 is a critical molecule in the control of viral infections and allergic and autoimmune inflammation (15-17). It promotes phagocytic uptake and Th2 responses but suppresses antigen presentation and Th1 proinflammatory responses (2).

References:

1. Pestka, S. *et al.* (2004) *Annu. Rev. Immunol.* **22**:929.
2. O'Garra, A. and P. Vieira (2007) *Nat. Rev. Immunol.* **7**:425.
3. Mathurin, P. *et al.* (2002) *Am. J. Physiol. Gastrointest. Liver Physiol.* **282**:G981.
4. Grewe, M. *et al.* (1995) *J. Invest. Dermatol.* **104**:3.
5. Szony, B.J. *et al.* (1999) *Mol. Hum. Reprod.* **5**:1059.
6. Vieira, P. *et al.* (1991) *Proc. Natl. Acad. Sci.* **88**:1172.
7. Hsu, D.-H. *et al.* (1990) *Science* **250**:830.
8. Moore, K. *et al.* (1990) *Science* **248**:1230.
9. Windsor, W.T. *et al.* (1993) *Biochemistry* **32**:8807.
10. Syto, R. *et al.* (1998) *Biochemistry* **37**:16943.
11. Kotenko, S.V. *et al.* (1997) *EMBO J.* **16**:5894.
12. Kotenko, S.V. *et al.* (2000) *J. Biol. Chem.* **276**:2725.
13. Hor, S. *et al.* (2004) *J. Biol. Chem.* **279**:33343.
14. Sheppard, P. *et al.* (2003) *Nat. Immunol.* **4**:63.
15. Fitzgerald, D.C. *et al.* (2007) *Nat. Immunol.* **8**:1372.
16. Wu, K. *et al.* (2007) *Cell. Mol. Immunol.* **4**:269.
17. Blackburn, S.D. and E.J. Wherry (2007) *Trends Microbiol.* **15**:143.