

DESCRIPTION

Source *E. coli*-derived
Leu25-Ala176, with an N-terminal Met
Accession # Q8CJ70

N-terminal Sequence Analysis Met

Predicted Molecular Mass 17.7 kDa

SPECIFICATIONS

Activity Measured in a cell proliferation assay using BaF3 mouse pro-B cells transfected with human IL-20 R α and human IL-20 R β . The ED₅₀ for this effect is typically 0.2-0.8 ng/mL.

Endotoxin Level <0.01 EU per 1 μ g of the protein by the LAL method.

Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 μ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 10 μ g/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

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.**

- 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.

BACKGROUND

Interleukin 19 (IL-19) is a member of the IL-10 family of cytokines (1). The IL-10 family is a class II α -helical collection of cytokines that contains two groups, a viral homolog and a cellular homolog group. Within the cellular homolog group, there are two additional groupings, one which uses IL-10 R2 as a signal transducing receptor (IL-10, IL-22 and IL-26), and one which uses IL-20 R2 as a signal transducing receptor (IL-19, IL-20 and IL-24) (2 - 4). Mouse IL-19 is synthesized as a 176 amino acid (aa) precursor that contains a 24 aa signal sequence and a 152 aa mature region (5). Based on human studies, it is expected to be secreted as a glycosylated monomer, 35 - 45 kDa in size (2, 6, 7). IL-19 is unusual in that it contains seven amphipathic helices (2, 4, 8). Mature mouse IL-19 shares 69% aa sequence identity with the mature human IL-19, and 85% and 68% aa identity to unpublished Genbank sequences for rat and canine IL-19, respectively. Although mouse IL-19 is active on human cells, human IL-19 is not active on mouse cells (5). IL-19 expression is limited to activated keratinocytes and monocytes, with a possible contribution from B cells (6, 9, 10). IL-19 binds a receptor complex consisting of the IL-20 receptor alpha (also known as IL-20 R1) and the IL-20 receptor beta (IL-20 R2) (3, 4, 11, 12). This receptor complex is also shared by IL-20 and IL-24. Notably, IL-19 is reported to actually bind to IL-20 R2, which is generally considered to be only the signal transducing receptor subunit (7, 13). Functionally, it has been reported that IL-19 both will and will not induce IL-6 and TNF production by monocytes (5, 14). It does, however, seem to drive T-helper cell differentiation towards a Th2 response, inducing both IL-10 and production of itself (5, 14, 15).

References:

1. Fickenscher, H. *et al.* (2002) Trends Immunol. **23**:89.
2. Pestka, S. *et al.* (2004) Annu. Rev. Immunol. **22**:929.
3. Zdanov (2004) Curr. Pharm. Des. **10**:3873.
4. Gallagher, G. *et al.* (2004) Int. Immunopathol. **4**:615.
5. Laio, Y.-C. *et al.* (2002) J. Immunol. **169**:4288.
6. Gallagher, G. *et al.* (2000) Genes Immun. **1**:442.
7. Pletnev, S. *et al.* (2003) Biochemistry **42**:12617.
8. Chang, C. *et al.* (2003) J. Biol. Chem. **278**:3308.
9. Romer, J. *et al.* (2003) J. Invest. Dermatol. **121**:1306.
10. Wolk, K. *et al.* (2002) J. Immunol. **168**:5397.
11. Dumoutier, L. *et al.* (2001) J. Immunol. **167**:3545.
12. Parrish-Novak, J. *et al.* (2002) J. Biol. Chem. **277**:47517.
13. Preimel, D. and H. Sticht (2004) J. Mol. Model. **10**:290.
14. Jordan, W.J. *et al.* (2005) Eur. J. Immunol. **35**:1576.
15. Laio, S.-C. *et al.* (2004) J. Immunol. **173**:6712.