

## DESCRIPTION

**Source** Chinese Hamster Ovary cell line, CHO-derived human IL-2 protein  
Ala21-Thr153  
Accession # P60568.1

**N-terminal Sequence Analysis** Ala21

**Structure / Form** Monomer

**Predicted Molecular Mass** 15 kDa

## SPECIFICATIONS

**SDS-PAGE** 14-18 kDa, under reducing conditions

**Activity** Measured in a cell proliferation assay using CTLL-2 mouse cytotoxic T cells. Gearing, A.J.H. and C.B. Bird (1987) in *Lymphokines and Interferons, A Practical Approach*. Clemens, M.J. *et al.* (eds): IRL Press. 295.  
The ED<sub>50</sub> for this effect is 0.05-0.3 ng/mL.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**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 100-500 µg/mL in sterile 100 mM Acetic Acid

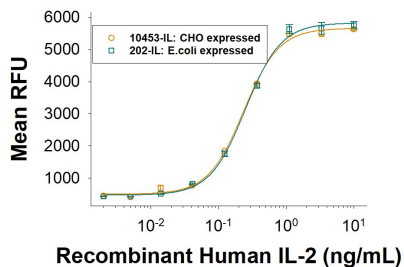
**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**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.

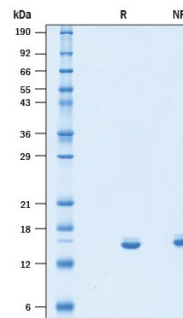
## DATA

### Bioactivity



Recombinant Human IL-2 (Mammalian-expressed) Protein (Catalog # 10453-IL) stimulates cell proliferation of the CTLL-2 mouse cytotoxic T cell line. The ED<sub>50</sub> for this effect is 0.05-0.3 ng/mL. Mammalian-expressed Recombinant Human IL-2 has similar activity to *E.coli*-derived Recombinant Human IL-2 (Catalog # 202-IL).

### SDS-PAGE



2 µg/lane of Recombinant Human IL-2 (Mammalian-expressed) Protein (Catalog # 10453-IL) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 14-18 kDa.

## BACKGROUND

Interleukin-2 (IL-2) is a 15.5 kDa cytokine which is part of the common  $\gamma$  chain family which includes IL-4, IL-7, IL-9, IL-15 and IL-21 (1). IL-2 contains a four alpha-helix bundle, an O-linked glycosylation site (Thr 23) and one disulfide bond (Cys 78  $\leftrightarrow$  Cys 125). It is expressed by CD4+ and CD8+ T cells, gamma  $\delta$  T cells, B cells, dendritic cells, and eosinophils (2-3). Mature human IL-2 shares 56% and 66% amino acid sequence identity with mouse and rat IL-2, respectively. The receptor for IL-2 consists of three subunits(alpha, beta, gamma) that are present on the cell surface in varying preformed complexes. The 55 kDa IL-2 R alpha (CD25) is specific for IL-2 and binds with low affinity. The 75 kDa IL-2 R beta(CD122), which is also a component of the IL-15 receptor, binds IL-2 with intermediate affinity. The 64 kDa common gamma chain gamma c/IL-2 R gamma(CD132), which is shared with the receptors for IL-4, -7, -9, -15, and -21, is recruited after IL-2 binds to IL-2R alpha and IL-2R beta (4). Upon ligand binding, signal transduction is performed by both IL-2 R beta and gamma c. IL-2 is best known for its autocrine and paracrine activity on T cells. It drives resting T cells to proliferate and induces IL-2 and IL-2 R alpha synthesis (2). It contributes to T cell homeostasis by promoting the Fas-induced death of naïve CD4+ T cells but not activated CD4+ memory lymphocytes (5). IL-2 plays a central role in the expansion and maintenance of regulatory T cells, although it inhibits the development of Th17 polarized cells (6-8). Thus, IL-2 may be a key cytokine in the natural suppression of autoimmunity (9, 10).

## References:

1. Lin, J.X. Leonard, W.J. (2018) Cold Spring Harb Perspect Biol. **10**:9.
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3. Taniguchi, T. *et al.* (1983) Nature **302**:305.
4. Liao W, Lin J.X. Leonard W.J. (2011) Curr Opin Immunol. **23**:598.
5. Jaleco, S. *et al.* (2003) J. Immunol. **171**:61.
6. Malek, T.R. (2003) J. Leukoc. Biol. **74**:961.
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8. Kryczek, I. *et al.* (2007) J. Immunol. **178**:6730.
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