Recombinant Human IL-2 Heat Stable Agonist AI Modified Protein

Catalog Number: BT-002HS

DESCRIPTION

Source	*E. coli*-derived human IL-2 protein Proprietary Accession # Engineered based on P60568.1

SPECIFICATIONS

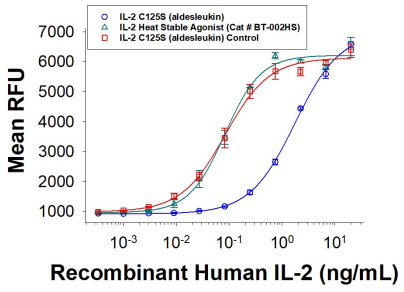
SDS-PAGE	7 kDa, under reducing conditions.
Activity	Measured in a cell proliferation assay using NK-92 human natural killer lymphoma cells. The ED_{50} for this effect is 0.0150-0.150 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE with quantitative 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 the 10 µg size at 100 µg/mL in PBS. Reconstitute all other sizes at 500 µg/mL in PBS.
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.

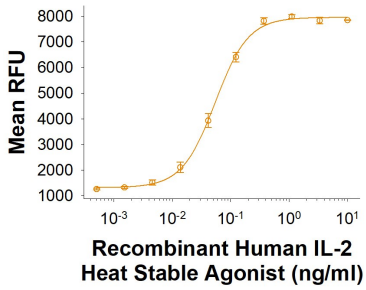
DATA

Bioactivity



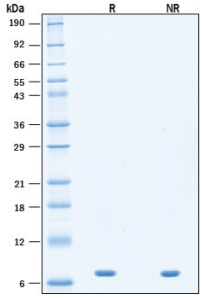
Proliferation bioassay in NK92 cells after 10 min at 95 °C After 10 min at 95°C (Control IL-2 C145S was kept at 4°C), only the heat stable IL-2 (Cat # BT-002HS) maintained bioactivity similar to the control IL-2, whereas the IL-2 Aldesleukin protein lost >14-fold activity.

Bioactivity



Recombinant Human IL-2 Heat Stable Agonist Protein Bioactivity. Recombinant Human IL 2 Heat Stable Agonist (Catalog # BT-002HS) stimulates proliferation of NK-92 human natural killer lymphoma cells. The ED_{50} for this effect is 0.0150-0.150 ng/mL.

SDS-PAGE



Recombinant Human IL-2 Heat Stable Agonist Protein SDS-PAGE. 2 µg/lane of Recombinant Human IL-2 Heat Stable Agonist Protein (Catalog # BT-002HS) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 7 kDa.

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BACKGROUND

Predictive analytics are increasingly effective in solving challenges associated with developing protein reagents for cell culture applications, including thermal and pH instability. We have improved the stability of IL-2 by generating a synthetic structural core while maintaining efficiency in engagement and activation of IL-2 R β/γ_c receptors. The enhanced IL-2 displays improved heat stability enabling it to retain bioactivity while withstanding elevated temperatures and extended culture durations. Recombinant IL-2 is a bioactive protein for use in cell culture applications, often used for the expansion of T cells. IL-2 is expressed by CD4+ and CD8+ T cells, gamma delta T cells, B cells, dendritic cells, and eosinophils (1-3). rhIL-2 is also used for the expansion of NK cells, early differentiated T cells and effector memory Treg cells for adoptive cell transfer cancer immunotherapy (4,5). rhIL-2 Heat Stable agonist is verified for activity using an NK92 proliferation assay as well as T Cell culture applications comparing to the commonly used mutant aldesleukin IL-2 version.

References:

1. Ma, A. *et al.* (2006) Annu. Rev. Immunol. **24**:657.
2. Gaffen, S.L. and K.D. Liu (2004) Cytokine **28**:109.
3. Taniguchi, T. *et al.* (1983) Nature **302**:305.
4. Koehl, U. *et al.* (2015) Oncoimmunology. **5**:e1115178.
5. Chamucero-Millares, J.A. *et al.* (2021) Cellular Immunol. **360**:104257.

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