

Anti-Human CD28 monoclonal antibody

Product Name

Anti-Human CD28 monoclonal antibody

Size/Catalog Number

500µg / GMP-TL102-0500

Product Information

Expression system: Hybridoma

Purity: > 95% as determined by SDS-PAGE and HPLC

Endotoxin: < 0.01 EU per 1 µg of protein (LAL method)

Activity: Binding rate with Jurkat cells is >90%

Purification: Protein A sepharose affinity

Form: Liquid

Storage Buffer: 20mM Phosphate Buffer, pH 7.4 (containing 150 mM NaCl), Preservative:
Human Serum Albumin

Background

The recombinant humanized anti-CD28 monoclonal antibody is a functional IgG2b-type antibody produced via hybridoma cell line, engineered to bind with high affinity to the extracellular IgV-like domain of CD28 on T cells. By mimicking the natural CD28-B7 interaction, it activates the PI3K-Akt-mTOR and NF-κB signaling pathways, synergizing with CD3 antibody-mediated TCR priming to achieve complete T-cell activation. In ex vivo T-cell expansion systems, this antibody significantly enhances clonal expansion efficiency, promotes central memory T-cell (T_{cm}) differentiation, and suppresses activation-induced cell death (AICD). For NK cell culture applications, it potentiates ADCC efficacy and IFN-γ secretion in CD28⁺ NK subsets through cross-activation, while synergizing with IL-15 to optimize metabolic reprogramming. Manufactured using animal component-free media and chromatographic purification, the product ensures compliance with release specifications through stringent controls on host DNA residuals, host protein residuals, and ultra-low endotoxin levels. It is applicable for the development of CAR-T, TIL, and bispecific antibody-engaged NK cell therapies.

Stability & Storage

Stable for up to 24 months when stored at 2-8°C under sterile condition.

References

1. Daniel Teschner, Gregor Wenzel, Eva Distler, Elke Schnürer, Matthias Theobald, AxIA. Neurauter, Karoline Schjetne and Wolfgang Herr. In vitro stimulation and expansion of human tumor-reactive CD8⁺cytotoxic T-lymphocytes by anti-CD3/CD28/CD137 magnetic beads. *Scandinavian Journal of Immunology* 2011, 74(2):155–164.
2. D Sangiolo, G Mesiano, F Carnevale-Schianca, W Piacibello, M Aglietta & A Cignetti. Cytokine induced killer cells as adoptive immunotherapy strategy to augment graft versus tumor after hematopoietic cell transplantation. *Expert Opin. Biol. Ther.* (2009) 9(7):831-840.
3. Siefken R, Kurrle R, Schwinzer R. CD28-mediated activation of resting human T cells without costimulation of the CD3/TCR complex. *Cell Immunol.* 1997 Feb 25;176(1):59-65.

Intended Us

For research and manufacturing purposes only.