Recombinant Human FLT3 Ligand Protein

Product Name

Recombinant Human FLT3 Ligand Protein

Size / Catalog Number

50μg / GMP-TL505-0050

Product Information

Synonyms: Fms-related tyrosine kinase 3 ligand. FLT3LG, FL, FLT3L, SL cytokine

Accession: UniProt P49771-1

Expressed Region: Thr27-Ala181

Tag: C-terminal 6×His-tag

Expression system: HEK293 cells

Predicted Molecular weight: 18.4 kDa

Purity: > 90% as determined by SDS-PAGE

Endotoxin: < 0.1 EU per 1 μg of protein (LAL method)

Activity: Measured in a cell proliferation assay using OCI-AML5 cells, corresponding to a specific activity of ≥ 5.0×10^5 IU/mg.

Form: Lyophilized from sterile PBS (pH7.4), typically supplemented with 6% mannitol as a protectant.

Background

The recombinant human Fms-Related Tyrosine Kinase 3 Ligand (FLT3L/Flt3 Ligand) is a high-purity, four-helical bundle cytokine produced in HEK-293 expression systems, typically existing as a noncovalently-linked dimer. As a pivotal cytokine in the hematopoietic system, FLT3L specifically binds to its receptor FLT3 (CD135/FLK-2/STK-1, a class III receptor tyrosine kinase), activating downstream signaling pathways including RAS-MAPK and PI3K-AKT-MTOR. This regulates the proliferation, differentiation, and survival of hematopoietic progenitor cells and dendritic cells (DCs), and induces the mobilization of hematopoietic progenitors and stem cells *in vivo*. FLT3L critically governs DC development, being particularly essential for plasmacytoid DCs (pDCs), CD8-positive classical DCs (cDCs), and their CD103-positive tissue-resident counterparts. By synergizing with various growth factors, FLT3L stimulates the expansion and differentiation of diverse blood cell progenitors and enhances anti-tumor immune responses by potentiating the function of DCs, which provide the key link between innate and adaptive immunity by recognizing pathogens and priming specific immune responses, making it highly valuable for applications in cancer immunotherapy and hematopoietic stem cell transplantation. Its native dimeric configuration preserves full bioactivity.

Stability & Storage

Lyophilized powder: Stable for 12 months at -80°C or 6 months at -20°C when stored in the original sealed container under desiccant.

Reconstitution: Dissolve in sterile water for injection, 0.9% NaCl, or PBS (pH7.4), maintaining a final concentration ≥ 100 μg/mL to prevent adsorption.

Handling: Aliquot to avoid repeated freeze-thaw cycles.

References

1. Thol F, Gabdoulline R, Liebich A, *et al*. Measurable residual disease monitoring by NGS before allogeneic hematopoietic cell transplantation in AML. Blood. 2018 Oct 18;132(16):1703-1713.
2. Ayatollahi H, Sadeghian M, Kooshyar M, *et al*. Absence of FLT3 mutations in Iranian adult T-cell leukemia/lymphoma patients. Med J Islam Repub Iran. 2018 Jun 9;32:47.
3. Li N, Mao J, Tang H, *et al*. FLT3 ligand regulates expansion of regulatory T-cells induced by regulatory dendritic cells isolated from gut-associated lymphoid tissues through the Notch pathway. Chin Med J (Engl). 2025 Jul 5;138(13):1595-1606.

Intended Us

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