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Produktinformation



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PRODUCT INFORMATION



FLT3/CD135 Intracellular Domain (human, recombinant)

Item No. 33736

Overview and Properties

Synonyms: Fetal Liver Kinase-2, FL Cytokine Receptor, FLK2, FMS-like Tyrosine Kinase 3, Receptor-type Tyrosine-protein Kinase, Stem Cell Tyrosine Kinase 1, STK1
Source: Active recombinant human N-terminal His-tagged FLT3/CD135 expressed in insect cells
Amino Acids: 564-993
Uniprot No.: P36888
Molecular Weight: 55 kDa
Storage: -80°C (as supplied)
Stability: ≥6 months
Purity: ≥80% estimated by SDS-PAGE
Supplied in: 25 mM Tris-HCl, pH 8.0, with 69 mM sodium chloride, 1.35 mM potassium chloride, 0.025% Tween 20, 125 mM imidazole, 50% glycerol, and 3 mM DTT

Protein

Concentration: *batch specific* mg/ml

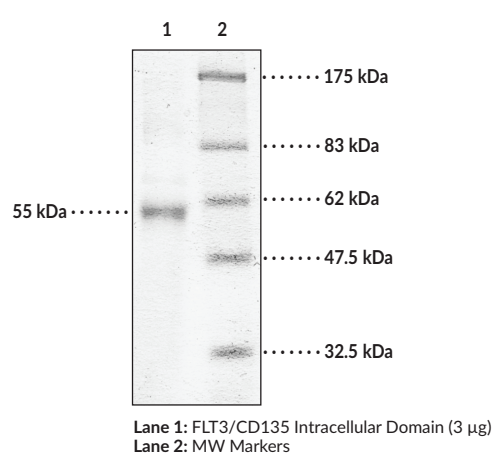
Activity: *batch specific* U/ml

Specific Activity: *batch specific* U/mg

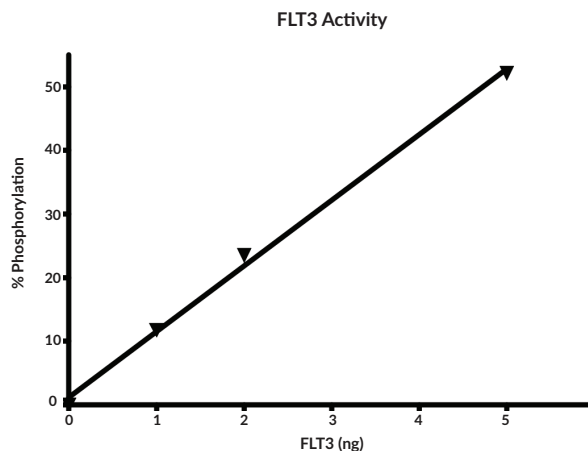
Unit Definition: One unit is defined as the amount of enzyme required to produce 1 pmol of phosphorylated substrate in 50 mM HEPES, pH 7.5, 10 mM magnesium chloride, 1 mM EDTA, 0.01% BRIJ-35, 200 μM of ATP and 2 μM Z'-LYTE tyrosine 2 peptide.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



SDS-PAGE Analysis of FLT3/CD135 Intracellular Domain.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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PRODUCT INFORMATION



Description

FMS-like tyrosine kinase 3 (FLT3), also known as CD135, is a transmembrane cytokine receptor and member of the class III receptor tyrosine kinase family.¹ It is composed of five extracellular immunoglobulin-like (Ig-like) domains, a transmembrane domain, an intracellular juxtamembrane domain, and two intracellular kinase domains. FLT3 is expressed in immature myeloid, lymphoid, and dendritic progenitor cells. Upon binding of FLT3 ligand, FLT3 forms a homodimer and the kinase domains are *trans*-phosphorylated, leading to activation of the RAS/MEK/ERK, PI3K, and STAT5A signaling pathways in a cell type-dependent manner.^{1,2} It is involved in the growth, survival, and differentiation of hematopoietic cells. FLT3 is considered a protooncogene, and activating mutations in it are associated with shorter disease-free survival in patients with hematologic malignancies.^{1,3} A mutation in FLT3 that results in an internal tandem duplication (ITD) of the juxtamembrane domain in FLT3 is found in approximately 20% of patients with acute myeloid leukemia (AML) and is associated with leukocytosis and poor prognosis.^{3,4} Formulations containing inhibitors of FLT3 have been used in the treatment of AML but are associated with chemoresistance.² Cayman's FLT3/CD135 Intracellular Domain (human, recombinant) protein can be used for enzyme activity assays.

References

1. Tzapogas, P., Mooney, C.J., Brown, G., *et al.* The cytokine Flt3-ligand in normal and malignant hematopoiesis. *Int. J. Mol. Sci.* **18(6)**, 1115 (2017).
2. Wang, Z., Cai, J., Cheng, J., *et al.* FLT3 inhibitors in acute myeloid leukemia: Challenges and recent developments in overcoming resistance. *J. Med. Chem.* **64(6)**, 2878-2900 (2021).
3. Yamamoto, Y., Kiyoi, H., Nakano, Y., *et al.* Activating mutation of D835 within the activation loop of FLT3 in human hematologic malignancies. *Blood* **97(8)**, 2434-2439 (2001).
4. Yokota, S., Kiyoi, H., Nakao, M., *et al.* Internal tandem duplication of the FLT3 gene is preferentially seen in acute myeloid leukemia and myelodysplastic syndrome among various hematological malignancies. A study on a large series of patients and cell lines. *Leukemia* **11(10)**, 1605-1609 (1997).

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