PRODUCT INFORMATION

FLT3/CD135 Intracellular Domain (human, recombinant)

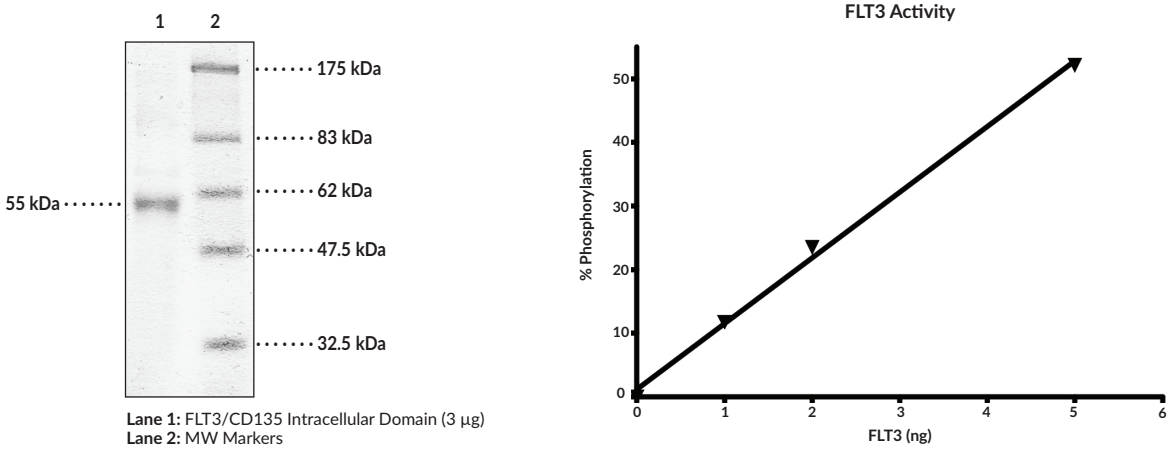
Item No. 33736

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



Lane 1: FLT3/CD135 Intracellular Domain (3 µg)
Lane 2: MW Markers

SDS-PAGE Analysis of FLT3/CD135 Intracellular Domain.

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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. Tsapogas, 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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