



MMP SUBSTRATE

Fluorescent Substrate: Dabcyl-PChaGC(Me)HAK(5FAM)-NH₂

Catalog Number: PEPDAB008

Use: This fluorescent peptide substrate can be used to assess activity of enzymes in the MMP family. It demonstrates reasonably strong activity against all of those enzymes, with specificity constants, k_{cat}/K_m ($M^{-1}s^{-1}$), ranging from approximately 10^1 to 10^6 (see Table 1 below, column highlighted in red). Typically, the peptide is dissolved in DMSO to make a stock solution of about 10mM concentration. When used for in vitro assays, the substrate is often used at about 10 μ M concentration. For use with the MMPs, the buffer should contain 50 mM Tris, pH 7.5, 150 mM NaCl, 2 mM CaCl₂, 5 μ M ZnSO₄, and 0.01% Brij-35. Excitation and emission wavelengths are 485 and 530 nm respectively.

Molecular Weight: 1388.3 g/mol

Purity: Greater than 95% as assessed by HPLC and Mass Spectrometry.

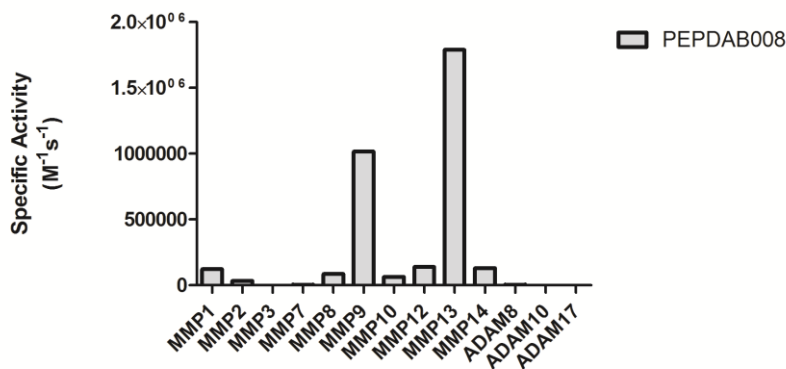
Solubility: 1 mg/ml in water with 10% Formic acid

Appearance: Red lyophilized powder

Shipping: The peptide powder is shipped at room temperature.

Storage: Upon receiving, the peptide should be stored at -70 °C. Avoid repeated freeze-thaw cycles. If dissolved in liquid (such as DMSO), aliquot into separate tubes to minimize the number of freeze-thaw cycles.

Stability: Samples are stable up to 6 months at -70°C.



References: [Fluorescent substrates for the proteinases ADAM17, ADAM10, ADAM8, and ADAM12 useful for high-throughput inhibitor screening.](#) Moss ML, Rasmussen FH. Anal Biochem. 2007 Jul 15;366(2):144-8.

[Proteolytic Activity Matrix Analysis \(PrAMA\) for Simultaneous Determination of Multiple Protease Activities.](#) Miller MA, et al. Integr Biol (Camb). 2011 Apr; 3(4): 422–438. doi: 10.1039/c0ib00083c

Table 1

Specificity constants, k_{cat}/K_m ($M^{-1}s^{-1}$), of substrates tested against MMPs 1, 2, 3, 8, 9, 13, and 14 and ADAMs 8, 10, 12, and 17 (TACE)

Enzyme \ Substrate	ProCha sub (PEPDAB008)	TNF-alpha sub (PEPDAB005)	CD23 sub (PEPDAB013)
MMP1	7.6×10^4	2.8×10^4	ND
MMP2	2.9×10^4	3.2×10^5	2.4×10^3
MMP3	5.2×10^1	4.0×10^3	ND
MMP8	NA	1.4×10^5	ND
MMP9	8.5×10^5	2.2×10^5	ND
MMP13	2.1×10^6	4.6×10^5	ND
MMP14	1.9×10^3	7.3×10^4	ND
ADAM8	2.6×10^3	1.0×10^5	5.3×10^4
ADAM10	5.6×10^1	6.2×10^3	2.7×10^2
ADAM12	3.0×10^3	2.8×10^5	4.0×10^1
ADAM17 (TACE)	6.8×10^3	4.3×10^5	ND

^a ND, no turnover detected

^b NA, not attempted