



## MMP SUBSTRATE

### Fluorescent Substrate: Dabcyl-PChaGC(Me)HAK(5FAM)-NH<sub>2</sub>

**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 $\mu$ M concentration. For use with the MMPs, the buffer should contain 50 mM Tris, pH 7.5, 150 mM NaCl, 2 mM CaCl<sub>2</sub>, 5  $\mu$ M ZnSO<sub>4</sub>, 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.

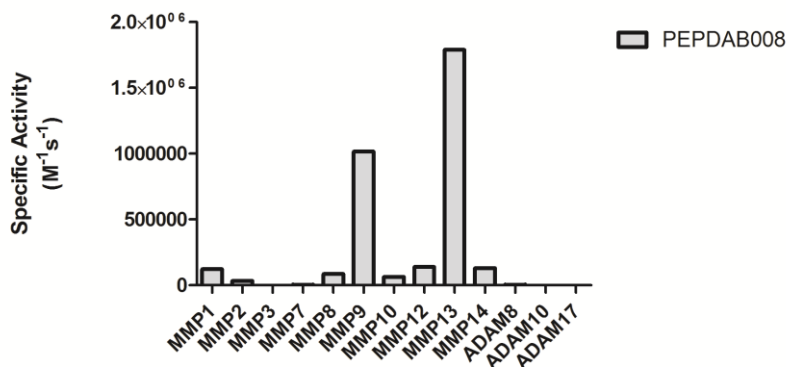
**Solubility:** 1 mg/ml in water with 10% Formic acid

**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	$7.6 \times 10^4$	$2.8 \times 10^4$	ND
MMP2	$2.9 \times 10^4$	$3.2 \times 10^5$	$2.4 \times 10^3$
MMP3	$5.2 \times 10^1$	$4.0 \times 10^3$	ND
MMP8	NA	$1.4 \times 10^5$	ND
MMP9	$8.5 \times 10^5$	$2.2 \times 10^5$	ND
MMP13	$2.1 \times 10^6$	$4.6 \times 10^5$	ND
MMP14	$1.9 \times 10^3$	$7.3 \times 10^4$	ND
ADAM8	$2.6 \times 10^3$	$1.0 \times 10^5$	$5.3 \times 10^4$
ADAM10	$5.6 \times 10^1$	$6.2 \times 10^3$	$2.7 \times 10^2$
ADAM12	$3.0 \times 10^3$	$2.8 \times 10^5$	$4.0 \times 10^1$
ADAM17 (TACE)	$6.8 \times 10^3$	$4.3 \times 10^5$	ND

<sup>a</sup> ND, no turnover detected

<sup>b</sup> NA, not attempted