OMNIMMP® RED fluorogenic substrate

Long emission wavelength reduces background

Highly-quenched, ultra-bright fluorogenic substrate for most MMPs. 6'-TAMRA fluorescence is thoroughly quenched by the TQ3 group until cleavage by MMPs separates the two moieties. The OMNIMMP® RED substrate offers key advantages over other MMP substrates.

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BML-P277-0100	100µg

Manuals, SDS & CofA View Online »

Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Handling	Avoid freeze/thaw cycles of solution. Protect from moisture. Protect from light.
Long Term Storage	-20°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Appearance	Lyophilized purple solid.
Application Notes	Useful for inhibitor screening, kinetic analysis, and cellular activity assay.
Emission Maximum	576nm; although the following Ex/Em can also be used: 540/590nm
Excitation Maximum	545nm
MW	1910.7
Purity	≥90% (HPLC)
Sequence	TQ3-GABA-Pro-Cha-Abu-Smc-His-Ala-Dab(6′-TAMRA)-Ala-Lys-NH_2 [TQ3=quencher; GABA=4-aminobutyric acid; Cha=L-cyclohexylalanine; Abu=2-aminobutyric acid; Smc=S-methyl-L-cysteine; Dab=2,4-diaminobutyric acid; 6'-TAMRA=6'-tetramethylrhodamine]
Solubility	Soluble in DMSO (50mM).

1. Emission at the red end of the spectrum avoids the interference at lower wavelengths often exhibited by screening compounds, and by substances commonly found in biological samples and tissue culture medium.
2. MMP substrate peptides display poor aqueous solubility, often with K_ms near or above their limits of solubility, making enzyme and inhibitor kinetics difficult. MMP K_ms for OMNIMMP® RED substrate are below its solubility limit (~2µM in assay buffer), allowing for substrate concentrations higher than the K_m, a condition generally desirable in endpoint assays.
3. In addition to the efficient binding as exhibited by low K_ms, OMNIMMP® RED is avidly cleaved by MMPs, with k_{cat}/K_ms in the range of 10^5-$10^7 M^{-1}sec^{-1}$.
4. The high k_{cat}/K_ms and the ultra-strong fluorescence of OMNIMMP® RED allow for substrate concentrations much lower than the K_m, a condition generally desirable in inhibitor screening/kinetics assays.

The following kinetic data [k_{cat}/K_m ($M^{-1}s^{-1}$); K_m(µM)] have been determined in-house. These are approximate only; customer should determine kinetics based on his/her assay conditions. MMP-1 (6.7×10^6; 0.48), MMP-2 (4.2×10^7; 0.38), MMP-3 (cleaves well; kinetics not yet determined), MMP-7 (1.6×10^7; 1.33), MMP-8 (1.6×10^7; 0.53), MMP-9 (2.3×10^7; 0.35), MMP-10 (cleaves well; kinetics not yet determined), MMP-11 (does not cleave), MMP-12 (cleaves well; kinetics not yet determined), MMP-13 (cleaves well; kinetics not yet determined), MMP-14 (cleaves well; kinetics not yet determined), MMP-19 (2.7×10^5; 0.50), MMP-20 (cleaves; kinetics not yet determined).

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