Matrix metalloproteinase-9 (MMP-9) fluorometric drug discovery kit, RED

The MMP-9 Fluorometric (also known as fluorimetric) Drug Discovery Kit, RED is a complete assay system designed to screen MMP-9 inhibitors using a quenched fluorogenic substrate OMNIMMP® RED: 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]. TAMRA fluorescence is thoroughly quenched by the TQ3 group until cleavage by MMPs separates the two moieties.

The assays are performed in a convenient 96-well microplate format. The kit is useful to screen inhibitors of MMP-9, a potential therapeutic target. The compound NNGH is also included as a prototypic control inhibitor.

Matrix metalloproteinase-9 (MMP-9, gelatinase B, 92kDa type IV collagenase) is a member of the MMP family of extracellular proteases. These enzymes play a role in many normal and disease states by virtue of their broad substrate specificities.Targets of MMP-9 include native and denatured collagens, fibronectin, elastin, laminin, pro-TNF-α, and interleukins and their receptors. MMP-9 is secreted as a 92kDa proenzyme (as measured by SDS-PAGE), and activated by cleavage to forms 82kDa and smaller. MMP-9 is an important target for inhibitor screening due to its involvement in diseases such as alopecia, cancer, angiogenesis, and metastasis.

Ordering Information

Order Online »

BML-AK306-0001	96 wells

Manuals, SDS & CofA

View Online »

Handling & Storage

Handling	Avoid freeze/thaw cycles.
Long Term Storage	-80°C
Shipping	Dry Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	Gelatinase B, 92kDa Type IV collagenase
Application	Activity assay, Fluorescent detection, HTS
Contents	1 vial MMP-9 enzyme 1 vial Substrate (OMNIMMP® RED) 1 vial 6'-TAMRA calibration standard 1 vial control inhibitor (NNGH) 1 bottle (20 ml) assay buffer 1 black 96-well microplate Instructions
Technical Info / Product Notes	**NCBI Reference Sequence:** NM_004994

The OMNIMMP® RED substrate offers key advantages over other MMP substrates.

1. Emission at the red end of the spectrum (576 nm after excitation at 545 nm) 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 their limits of solubility, making enzyme and inhibitor kinetics difficult. MMP K_ms for OMNIMMP® RED substrate are well below its solubility limit.
3. OMNIMMP® RED is avidly cleaved by MMPs, with k_{cat}/K_ms in the range of ~10^4-10^6 $M^{-1}sec^{-1}$.
4. The ultra-strong fluorescence of OMNIMMP® RED allows for substrate concentrations much lower than the K_m, a condition generally desirable in inhibitor screening assays.

UniProt ID	P14780

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ENZO LIFE SCIENCES, INC.
Phone: 800.942.0430
info-usa@enzolifesciences.com

European Sales Office
ENZO LIFE SCIENCES (ELS) AG
Phone: +41 61 926 8989
info-eu@enzolifesciences.com

Belgium, The Netherlands & Luxembourg
Phone: +32 3 466 0420
info-be@enzolifesciences.com

France
Phone: +33 472 440 655
info-fr@enzolifesciences.com

Germany
Phone: +49 7621 5500 526
info-de@enzolifesciences.com

UK & Ireland
Phone (UK customers): 0845 601 1488
Phone: +44 1392 825900
info-uk@enzolifesciences.com

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