Product Data Sheet

Product Name: 520 MMP FRET Substrate XIII

Catalog Number: AS-60580-01 (0.1mg) Lot Number: See label on vial

Sequence: 5-FAM-Arg-Pro-Lys-Pro-Val-Glu-Nva-Trp-Arg-Lys(QXL™ 520)-NH2 (3-letter code)
5-FAM-RPKPVE-Nva-WRK(QXL™ 520)-NH2 (1-letter code)

Molecular Weight: 2143.3

Peptide Purity: >95%

Appearance: Lyophilized red powder

Peptide Reconstitution: 520 MMP FRET Substrate XIII is freely soluble in DMSO.

Storage: 520 MMP FRET Substrate XIII is shipped at ambient temperature. Upon receipt, store lyophilized peptide at –20°C or lower. Reconstituted peptide can be aliquoted and stored at –20 °C or lower.

Description: A sensitive substrate for assaying MMP-3 and 12 activities, Abs/Em = 494/521nm.

Additional Information: *Listed below are relevant information that may provide a guideline on how to use this product. End users will have to adapt to their own specific applications.*

This 5-FAM/QXL™520-based FRET substrate is a sensitive and efficient reagent for assaying MMP activity. It can be cleaved by MMP-3 and 12.
This FRET peptide substrate incorporates QXL™520, the best quencher available to pair with 5-FAM. When the peptide is intact, the fluorescence of 5-FAM (donor) is quenched by QXL™520 ("dark" acceptor) through fluorescence resonance energy transfer (FRET). Upon cleavage by MMPs into two separate fragments, the fluorescence of 5-FAM is recovered and can be detected at the emission wavelength of 520±20 nm, with excitation wavelength of 490±20 nm.
Prepare 1 mM DMSO stock solution and dilute in an appropriate assay buffer at a concentration range of 1 to 100 µM. The peptide concentration needs to be optimized depending on your experimental conditions.

The activity of MMP-3 (stromelysin-1) was measured fluorometrically using a 5-FAM/QXL™520 fluorescence resonance energy transfer (FRET) peptide (Cat. No. 60580; AnaSpec Inc., San Jose, CA). In the intact FRET peptide (5-FAM-Arg-Pro-Lys-Pro-Val-Glu-Nva-Trp-Arg-Lys(QXL™520)-NH2), the fluorescence of 5-FAM (5-carboxyfluorescein) is quenched by QXL™520. Upon cleavage into two separate fragments by the MMP-3 present in the sample, the fluorescence of 5-FAM is recovered, and can be monitored at excitation/emission wavelengths of 490/520 nm. This peptide has been documented to be cleaved by only MMP-3 and MMP-12 (macrophage elastase), but not by other MMPs (Nagase et al., 1994). Ref: Nagase, H. et al., *J.Biol.Chem.* **269**, 20952 (1994); Bremer, C. et al., *Acad.Radiol.* 9 Suppl 2, S314 (2002).

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