

(Ac-PAL)2R110

Catalog number: 13467

Unit size: 1 mg

Product Details

Storage Conditions	Freeze (<math>< -15\text{ }^\circ\text{C}</math>), Minimize light exposure
Expiration Date	12 months upon receiving

Chemical Properties

Appearance	Off-white solid
Molecular Weight	977.11
Soluble In	DMSO
Chemical Structure	

Spectral Properties

Excitation Wavelength	500 nm
Emission Wavelength	522 nm

Applications

The non-fluorescent R110 substrates generate the bright green fluorescent rhodamine 110 product that has Ex/Em = 494/521 nm, and can be easily detected with a FITC filter set. In general, R110 substrates are much more sensitive than the AMC-, AFC- or 4-nitroaniline-based substrates. This R110 substrate is used for monitoring the protease activities of the proteasome. The most common form of the proteasome is known as the 26S proteasome that contains one 20S core particle structure and two 19S regulatory caps. All 20S particles consist of four stacked heptameric ring structures that are themselves composed of two different types of subunits; alpha subunits are structural in nature, whereas beta subunits are predominantly catalytic. The outer two rings in the stack consist of seven alpha subunits each, which serve as docking domains for the regulatory particles and the alpha subunits N-termini form a gate that blocks unregulated access of substrates to the interior cavity. The inner two rings each consist of seven beta subunits and contain the protease active sites that perform the proteolysis reactions. AAT Bioquest offers a group of R110 substrates for monitoring the protease activities of the proteasome at different subsites, i.e., (i) sub-sites: beta1c, Z-LLE-R110; beta2c, Ac-KQL-R110; beta5c, Ac-WLA-R110; beta1i, Ac-PAL-R110; beta2i, Ac-KQL-R110; beta5c, Ac-WLA-R110 and Suc-LLVY-R110; and beta5i, Ac-ANW-R110. The protease activity is measured by monitoring the R110 liberation over time using excitation and emission wavelengths of 490 nm and 520 nm respectively.