

FT-CJF560



## Fluorescent Proteasome Substrates

### Product Description

Product name cat.number	MW (g·mol <sup>-1</sup> )	$\lambda_{exc}/\lambda_{em}$ max. (nm)	mol. abs. (M <sup>-1</sup> cm <sup>-1</sup> )
<b>(Suc-LLVY)2R110</b> FP-CJF530, 1mg	1507,72	498 / 520	81 000
<b>Suc-LLVY-AMC</b> FP-CJF550, 1mg	763,88	351 / 430	$\epsilon_{343} = 25\,500$ $\epsilon_{365} = 16\,200$
<b>(Ac-ANW)2R110</b> FP-CJF560, 1mg	1159,16	498 / 520	81 000
<b>(Ac-KQL)2R110</b> FP-GDA530, 1mg	1153,33	498 / 520	81 000
<b>(Z-LLE)2R110</b> FP-GDA540, 1mg	1309,46	498 / 520	81 000
<b>(Ac-PAL)2R110</b> FP-GDA550, 1mg	977,11	498 / 520	81 000
<b>(Ac-WLA)2R110</b> FP-GDA730, 1mg	1155,30	498 / 520	81 000

### Storage Conditions

Store at < -15 °C and desiccated. Avoid exposure to light. Expiration date is one year upon receipt.

### Introduction

The main function of the proteasome is to degrade unneeded or damaged proteins by proteolysis, a chemical reaction that breaks peptide bonds. The proteasomal degradation pathway is essential for many cellular processes, including the cell cycle, the regulation of gene expression, and the responses to oxidative stress. The most common form of the proteasome in this pathway is the proteasome 26S, an ATP-dependent proteolytic complex, which contains one 20S (700-kDa) core particle structure and two 19S (700-kDa) regulatory caps. The 20S core contains three major proteolytic activities including chymotrypsin-like, trypsin-like and caspase-like activities. It is responsible for the breakdown of the key proteins involved with apoptosis, DNA repair, endocytosis, and cell cycle control.

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FluoProbes offers a group of R110 substrates for monitoring the protease activities of the proteasome at different subsites, i.e., (i) sub-sites:  $\beta$ 1c, Z-LLE-R110;  $\beta$ 2c, Ac-KQL-R110;  $\beta$ 5c, Ac-WLA-R110;  $\beta$ 1i, Ac-PAL-R110;  $\beta$ 2i, Ac-KQL-R110;  $\beta$ 5c, Ac-WLA-R110 and Suc-LLVY-R110; and  $\beta$ 5i, 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. We also offer Suc-LLVY-AMC, the non-fluorescent substrate generates a bright blue fluorescent AMC product that has Ex/Em = 351/430 nm, and can be easily detected with the DAPI filter set. In general, R110 substrates are much more sensitive than the AMC-, AFC- or 4-nitroaniline-based substrates.

## Technical and scientific information

### Directions for use

Following protocol only provides a guideline, and should be modified according to your specific needs.

1. Prepare a 5 to 10 mM stock solution in DMSO.
2. Prepare a 2X proteasome substrate (20 to 50  $\mu$ M) assay solution as the following:

25 to 50  $\mu$ L substrate stock solution (10 mM)  
100  $\mu$ L DTT (1M)  
400  $\mu$ L EDTA (100 mM)  
10 mL Hepes Buffer (25 mM), pH =7.4

3. Mix equal volume of the proteasome standards or samples with 2X fluorescent proteasome substrate assay solution (from Step 1), and incubate the solutions at room temperature for at least 1 hour .
4. Monitor the fluorescence use fluorescent microplate readers.

### References

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## Related products

- AMC /Fluorescence Reference Standard/ FP-103335
- R110 /Fluorescence Reference Standard/ FP-M1366C

## Ordering information

Catalog size quantities and prices may be found at <http://www.interchim.com>.

Please inquire for higher quantities (availability, shipment conditions).

For any information, please ask : FluoProbes® / Interchim; Hotline : +33(0)4 70 03 73 06

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