

# 20S Immunoproteasome, PBMC

Cat. No. SBB-PP0004  
Lot. No. 163060004

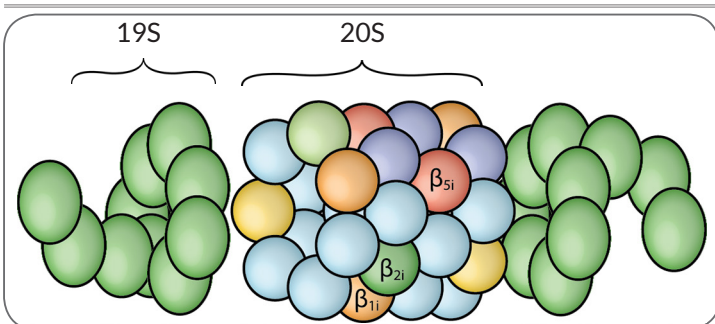


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## 20S Immunoproteasome

The immunoproteasome is structurally similar to constitutive 26S proteasome. The 20S core of immunoproteasome contains two outer rings composed of alpha subunits, and two internal 7-subunit containing rings each possessing 3 specific subunits responsible for proteasome catalytic activity. In immunoproteasome these subunits ( $\beta_1$ ,  $\beta_2$ ,  $\beta_5$ ) are replaced by three inducible subunits: PSMB9, PSMB10, and PSMB8, ( $\beta_{1i}$ ,  $\beta_{2i}$ ,  $\beta_{5i}$ ). These stress-induced subunits allow for the production of MHC-1 associating peptides, which are displayed as antigens on the cell surface. These displayed peptides can then be recognized by immune surveillance CD8 T-Cells. 20S

Immunoproteasome is recognized as a strong drug target for autoimmune disease and cancer. This immunoproteasome is purified from human peripheral blood mononuclear cells and is supplied at >95% purity. Cells used as starting material tested negative for hepatitis B surface antigen, antibodies to hepatitis C virus, HIV type 1 antigens, and antibodies to HIV type 1 and 2. Immunoproteasome is commonly associated with the 19S, PA28  $\alpha/\beta$ , or the PA28 $\gamma$  regulatory complexes. If choosing to omit PA28 during use, 20S must be chemically activated by addition of 0.035% SDS in final assay buffers. Optimal experimental concentrations are between 2-5 nM.



## Product Information

**Quantity:** 25 $\mu$ g      **Molecular Weight:** >700 kDa

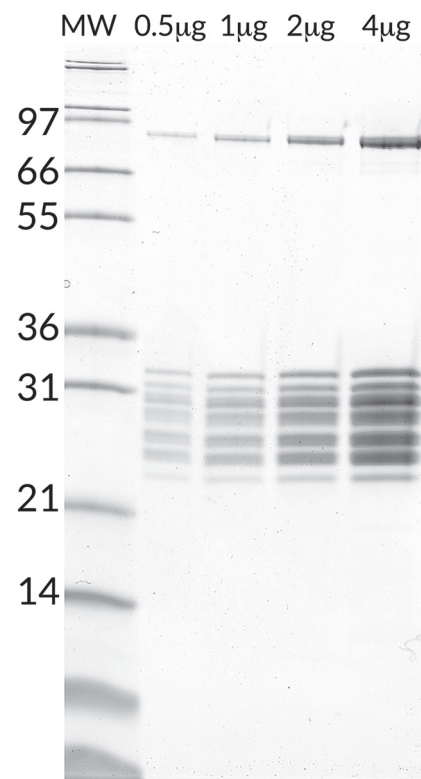
**Concentration:** 3  $\mu$ M, 2.1 mg/mL

**Purity:** >95% by SDS-PAGE

**Storage Buffer:** 50 mM HEPES pH 7.5, 100 mM NaCl, 1 mM TCEP.

**Storage:** Store at -80°C. Avoid multiple freeze thaw

## Quality Control and Performance Data



**Figure 1. 20S Immunoproteasome, SDS-PAGE.** From left to right, increasing amounts of 20S Immunoproteasome loaded onto a 4-20% SDS-PAGE gel, stained with coomassie brilliant blue.

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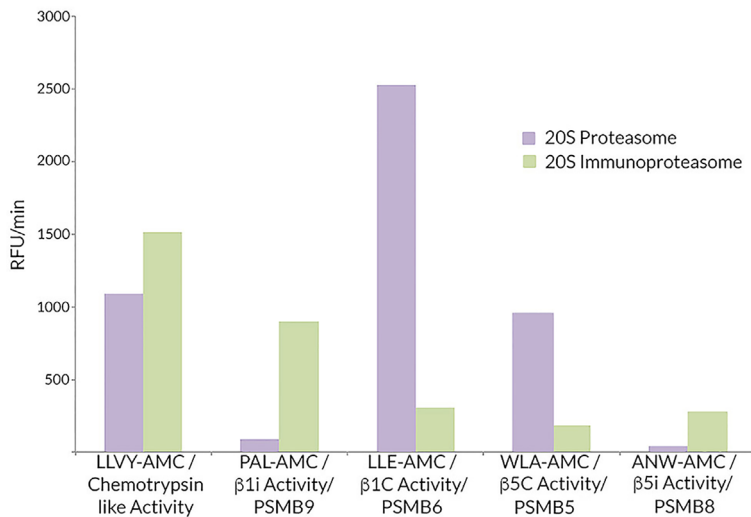
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## Quality Control and Performance Data



**Figure 2. 20S Immunoproteasome vs. 20S Constitutive Proteasome Activity.** 20S Immunoproteasome is most active against LLVY-AMC (SBB-PS0010), PAL-AMC (SBB-PS0007), and ANW-AMC (SBB-PS0009) substrates, representing physiologically relevant chemotrypsin-like,  $\beta$ 1i, and  $\beta$ 5i immunoproteasome activity respectively.

## References

- 1) Wang J, Maldonado MA (Aug 2006). "The ubiquitin-proteasome system and its role in inflammatory and autoimmune diseases". *Cellular & Molecular Immunology*. 3 (4): 255-61. PMID 16978533.
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- 3) Cascio P, Hilton C, Kisselev AF, Rock KL, Goldberg AL (May 2001). "26S proteasomes and immunoproteasomes produce mainly N-extended versions of an antigenic peptide". *The EMBO Journal*. 20 (10): 2357-66. doi:10.1093/emboj/20.10.2357. PMC 125470 free to read. PMID 11350924.
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