20S Immunoproteasome, PBMC

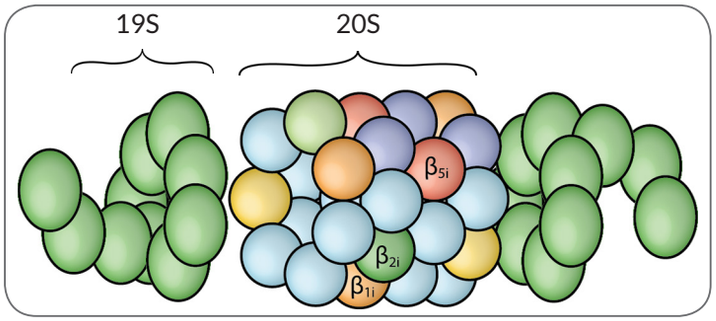
Cat. No. SBB-PP0004
Lot. No. 163060004

South Bay Bío

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 (ß1, ß2, ß5) are replaced by three inducible subunits: PSMB9, PSMB10, and PSMB8, (ß1i, ß2i, ß5i). 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 α/ß, or the PA28γ regulatory complexes. If choosing to omit PA28 during use, 20S must be chemically activated by addition of 0.035%SDS in final assay buffers.



Product Information

Quantity: 25µg **Molecular Weight:** >700 kDa

Concentration: 3 µM, 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

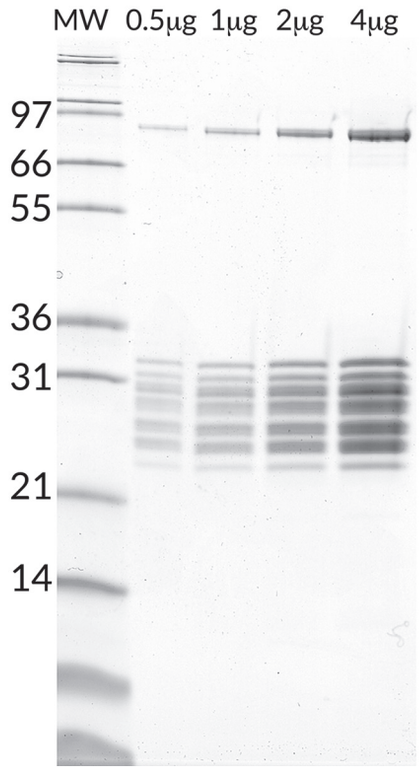


Figure 1. 20S Immunoproteasome, SDS-PAGE. From left to right, increasing amounts of 20S Immunoproteasome loaded onto a 4-20% SDS-PAGE gel, stained with coomassie brilliant blue.

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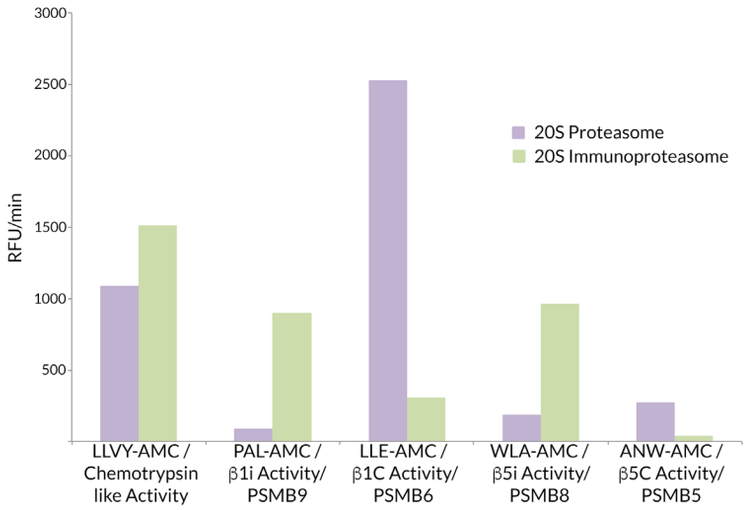

Figure 2. 20S Immunoproteasome vs. 20S Constitutive Proteasome Activity. 20S Immunoproteasome is most active against LLVY-AMC (SBB-PS0010), PAL-AMC (SBB-PS0007), and ANW-AMC (SBB-PS0009) substrates, representing physiologically relevant chemotrypsin-like, ß1i, and ß5i immunoproteasome activity respectively.

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.

2)Murata S, Sasaki K, Kishimoto T, Niwa S, Hayashi H, Takahama Y, Tanaka K (Jun 2007). "Regulation of CD8+ T cell development by thymus-specific proteasomes". Science. 316 (5829): 1349–53. doi:10.1126/science.1141915. PMID 17540904.

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 125470free to read. PMID 11350924.

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