

# 20S Proteasome

Cat. No. SBB-PP0005  
Lot. No. 163060005

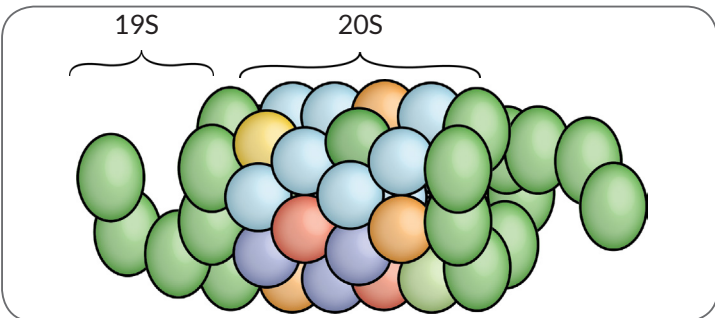


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## 20S Proteasome

The ubiquitin-proteasome pathway is the major proteolytic system in eukaryotic cells, where it catalyzes the selective degradation of short-lived regulatory proteins or the rapid turnover of misfolded proteins. One of the most important proteases in this pathway is the 26S proteasome, an ATP-dependent proteolytic complex, which is formed by the association of the barrel-shaped 20S proteasome (700-kDa) and two 19S (700-kDa) regulatory complexes. The 20S catalytic core is composed of 4 rings of 28 non-identical subunits; 2 rings are composed of 7 alpha subunits and 2 rings are composed of 7 beta subunits. The 20S catalytic core is able to degrade a variety of peptide substrates and poly-ubiquitinated proteins involved with apoptosis, DNA repair, endocytosis, and cell cycle control. The 20S proteasome can be activated chemically by the addition of the detergent SDS at a concentration not exceeding 0.035% or by the proteinaceous activator PA28.

This 20S proteasome is a highly active protein complex that has been purified from human erythrocytes. The complex is able to proteolytically degrade substrates in an ATP-independent manner and the 20S core can be activated chemically with SDS (0.035%), or by the addition of PA28. Initial experiments should be carried out at 20S proteasome concentrations between 2-5 nM.



## Product Information

**Quantity:** 50µg      **Molecular Weight:** >700 kDa

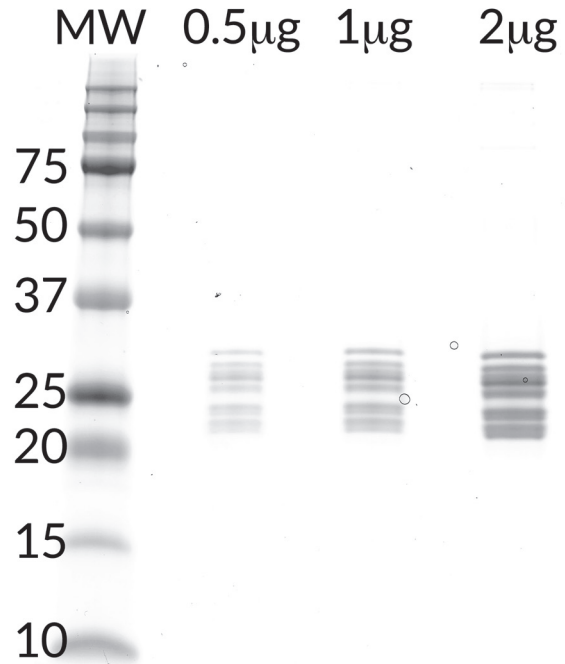
**Concentration:** 2µM, 1.4 mg/mL

**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 cycles.

## Quality Control and Performance Data



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

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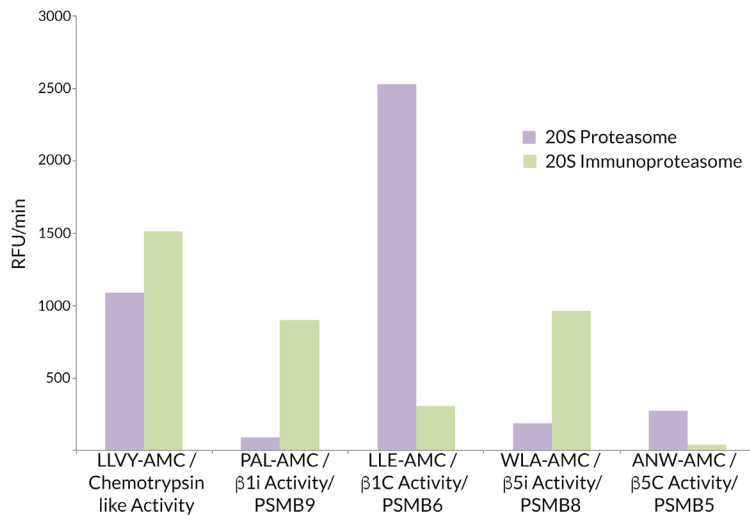
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## References



**Figure 2. 20S Constitutive Proteasome vs. 20S Immunoproteasome Activity.** 20S Proteasome is most active against LLVY-AMC (SBB-PS0010), LLE-AMC (SBB-PS0006), and WLA-AMC (SBB-PS0008) substrates, representing physiologically relevant chemotrypsin-like,  $\beta$ 1c, and  $\beta$ 5c proteasome activity respectively.

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