

20S Proteasome (Human)

Cat. # PS020

Background

The proteasome is a large, multi-catalytic protease complex within the eukaryotic cell. The catalytic core known as the 20S proteasome (700 kDa) is composed of two sets of seven β -subunits and two sets of seven α -subunits. The β 1, β 2 and β 5 subunits possess caspase-like, trypsin-like and chymotrypsin-like peptidolytic activities respectively. In eukaryotic cells, the 20S proteasome is assembled with the aid of at least five assembly chaperones. The degradation of cellular proteins by the proteasome is initiated by attachment of a ubiquitin chain to the polypeptide. The ubiquitin tag is recognized by and binds to the 'lid', a 19S particle, followed by disassembly of ubiquitin chains, protein unfolding and subsequent translocation into the 20S proteasome.

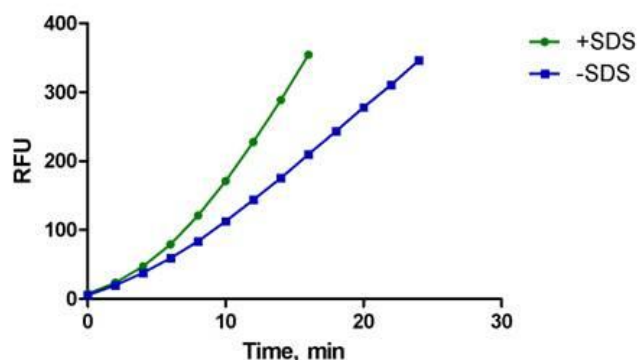
Application(s)

This purified 20S proteasome preparation can be used *in vitro* for the degradation of peptide substrates and is suitable to screen for novel proteasome inhibitors. To measure a chymotrypsin activity of 20S proteasome, a specific substrate [Suc-LLVY-AMC \(cat.no.PS500\)](#) is available. Upon cleavage by the active enzyme, it generates a highly fluorescent product with an emission wavelength at 460 nm.

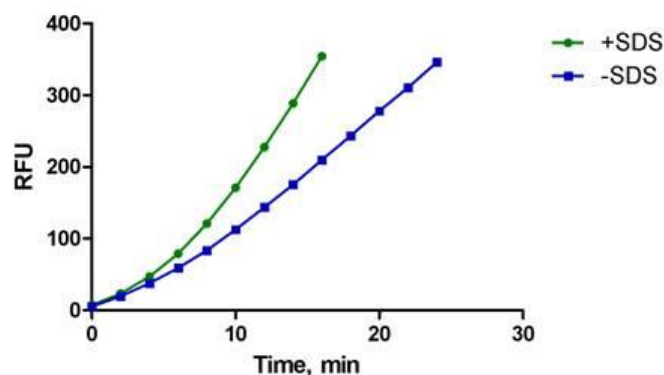
Product Specifications

Molecular Weight	700 kDa
Quantity	50 μ g
Physical State	Liquid
Buffer	20 mM Tris-HCl pH 7.2, 10% Glycerol, 150 mM KCl, 1 mM β -mercaptoethanol
Concentration	1 mg/ml
Source	Human Red Blood Cells
Activity	See below
Stability & Storage	1 year at -80°C. Avoid repeated freeze/thaw cycles

Product QC



The chymotrypsin-like activity of the 20S proteasome (45 μ g/ml) was measured using 100 μ M Suc-LLVY-AMC in 20 mM HEPES, pH 7.5, 0.5 mM EDTA, 0.05% Triton X, plus or minus 0.035% SDS



The chymotrypsin-like activity of the 20S proteasome (18 μ g/ml) was measured using 100 μ M Suc-LLVY-AMC in 20 mM HEPES, pH 7.5, 0.5 mM EDTA, 0.05% Triton X, plus or minus 0.5 mM [MG132 \(Cat. # SI9710\)](#)

All products are for research use only • Not intended for human or animal diagnostic or therapeutic uses
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