

**MATERIAL DATA SHEET****20S Immunoproteasome (Spleen), *Macaca fascicularis*  
E-378**

The 20S Immunoproteasome is a modified form of the constitutively active 20S Proteasome core particle and is the catalytic subunit of the multi-complex Immunoproteasome. The structure of the 20S Immunoproteasome is similar to the 20S Proteasome, which is composed of 28 non-identical subunits arranged in four stacked rings. During 20S Immunoproteasome assembly in humans, three catalytic beta subunits,  $\beta 1$ ,  $\beta 2$ , and  $\beta 5$ , in the two interior rings of the 20S Proteasome are replaced by three IFN $\gamma$ -inducible catalytic subunits:  $\beta 1i$ /LMP2(PSMB9),  $\beta 2i$ /MECL-1(PSMB10), and  $\beta 5i$ /LMP7(PSMB8). These proteins (in their mature forms) are highly conserved in *M. fascicularis*, with identities of 97%, 91%, and 98% respectively. The 20S Immunoproteasome is commonly associated with the 19S, PA28  $\alpha/\beta$ , or the PA28 $\gamma$  regulatory complexes. 20S Immunoproteasome expression is enriched in antigen presenting cells of the immune system where the 20S Immunoproteasome selectively degrades intracellular proteins in a manner that optimizes the generation of peptides for MHC class I antigen presentation. Selective inhibition of 20S Immunoproteasome proteolytic activity using small molecule inhibitors is being examined for therapeutic intervention in cancer and inflammatory diseases. This protein has been purified from spleens collected from the crab-eating macaque, *Macaca fascicularis* (Cynomolgus Monkey).

**Product Information**

<b>Quantity:</b>	25 $\mu$ g
<b>Stock:</b>	X mg/ml (X $\mu$ M) in 50 mM HEPES pH 7.6, 100 mM NaCl, 1 mM DTT
<b>MW:</b>	700 kDa
<b>Purity:</b>	> 95% by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie Blue stain.

**Use & Storage**

<b>Use:</b>	The 20S Proteasome is able to degrade substrates in an ATP-independent manner. It can be activated chemically with SDS (0.035%) or by the addition of PA28. Reaction conditions will need to be optimized for each specific application. We recommend an initial 20S Proteasome concentration of 0.5-5 nM.
<b>Storage:</b>	Store at -80°C. Avoid multiple freeze/thaw cycles.

## Literature

- References:** Kim, H.M. *et al.* (2011) Biochim. Biophys. Acta **1809**: 67  
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