

## Figure 2 - source data 2:

Quantitative time-resolved analysis reveals intricate, differential regulation of standard and immuno-proteasomes.

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Table 1: List of mathematical model parameters

peptide-bond hydrolysis	
$k_p$	peptide-bond hydrolysis rate at active site(s)
$K_{aS}, K_{aP}$	dissociation constant of substrate ( $S$ ) and product ( $P$ ) to active site(s)
$n_a$	Hill coefficient for binding to active site(s)
$K_{iS}, K_{iP}$	dissociation constant of substrate ( $S$ ) and product ( $P$ ) to inhibitor site(s)
$n_i$	Hill coefficient for binding to inhibitor site(s)
$\alpha$	factor, by which $K_{aS}, K_{aP}, K_{iS}$ and $K_{iP}$ are multiplied
$\beta$	factor, by which $k_p$ is multiplied upon binding to inhibitory site(s)
transport	
$k_{on}$	association rate to the gate
$k_{off}$	dissociation rate to from gate
$v_{in}$	peptide influx rate
$\tau$	peptide translocation rate inside the chamber
$v_{out}$	peptide efflux rate
$C$	capacity (maximum number of molecules inside the chamber)
transport regulation	
$R_{on}$	binding rate to the enhancing regulator site(s)
$R_{off}$	unbinding rate to the enhancing regulator site(s)
$X_{enh}$	strength of enhancing regulator site(s)
$I_{on}$	binding rate to the inhibiting regulator site(s) outside the chamber
$I_{off}$	unbinding rate to the inhibiting regulator site(s) outside the chamber
$h$	Hill coefficient for binding to inhibiting regulator site(s) outside the chamber
$Y_{inn}$	strength of inhibiting regulator site(s)