Table 3. Catalytic rate of peptide bond cleavage by Lon and Clp with various substrates

Substrate	k_{cat}[a] Subunit (min^{-1})	Holoenzyme	AMPPNP/ ATP[b]
1) Lon protease			
BSA[c]	2	8	0.08
α-Casein[c]	2	8	0.14
Globin[c]	4	16	0.23
λ N protein[d]	60	240	0.25
Oxidized insulin B chain[d]	20	80	1.0
Succinyl-Ala-Ala-Phe-NMC[e]	< 2	< 8	1.0
2) Clp protease			
Succinyl-Leu-Tyr-NMC[f]	> 10	> 120	–
α-Casein[f]	12	144	0.0

[a] k_{cat} was calculated from the V_{max} and the enzyme concentration, using either the subunit or the holoenzyme as the catalytic unit (tetramer of Lon or dodecamer of ClpP). The V_{max} was determined experimentally or was estimated from data obtained at partial saturation. [b] Ratio of activities in the presence of AMPPNP and ATP. [c] Calculated from data in Goldbergg and Waxman[52]. [d] Maurizi[94]. [e] Waxman and Goldberg[177]. [f] M. Maurizi, unpublished.