

Table S3. Summary of reported enzyme kinetic parameters of histidine kinases.

Enzyme	Autophosphorylation Activity			
	k_{cat} (s ⁻¹)	K_M ATP (μ M)	k_{cat}/K_M (M ⁻¹ s ⁻¹)	References
DesKc	2.8×10^{-3}	64	44	This work
CheA	0.117	274	427	[1]
CheA	0.026	300	87	[2]
NRII	0.032	18	1805	[3]
NarX	5×10^{-5}	2.4	21	[4]
NarQ	2.2×10^{-4}	22.8	9.65	
KinA	1.9×10^{-3}	74	25.7	[5]
EnvZ115	8.1×10^{-5}	218	0.37	[6]
PhoQc	-	20.1	-	[7]
WalK(Spn) (VicK)	1.7×10^{-3}	37	46.0	[8]

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