

TABLE 1**ATPase activities of F₁ engineered for rotation**

The ATPase activities of wild-type F₁ and F₁ engineered (2 nM) for rotation were assayed at 24 °C, and the rotation rates were estimated assuming three ATP molecules were hydrolyzed per rotation. The ATPase activity was also assayed in the presence of 100 nM ϵ subunit (ϵ) or ϵ with cytochrome *b*₅₆₂ connected at the carboxyl terminus (ϵ -cytochrome *b*₅₆₂).

	F ₁ preparation	ATPase activity <i>units/mg protein</i>	Turnover number	Rotation rates estimated from ATPase		ϵ Inhibition %
				<i>s</i> ⁻¹		
1	F ₁ , non-engineered	14.7 ± 0.3	90		30	
	+ ϵ	7.3 ± 0.2	45		15	50
	+ ϵ -Cytochrome <i>b</i> ₅₆₂	15.9 ± 0.1	97		32	~0
2	F ₁ , engineered for rotation	14.9 ± 0.1	91		30	
	+ ϵ	6.9 ± 0.2	42		14	54
	+ ϵ -Cytochrome <i>b</i> ₅₆₂	15.4 ± 0.0	94		31	~0