Supplementary Material

Voltage Sensing in Bacterial Protein Translocation

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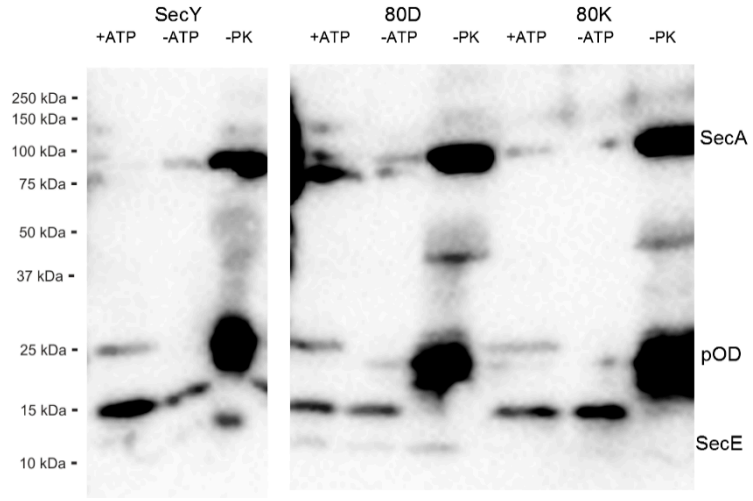

Figure S1: Translocation Assay. Western Blot detection with HRP - anti-His (Milenitec) Bands at 27 kDA show translocated proOmpA-DHFR in ATP positive samples for SecYEG "wild type" (single cysteine SecYA204C), and with mutations L80D, L80K.

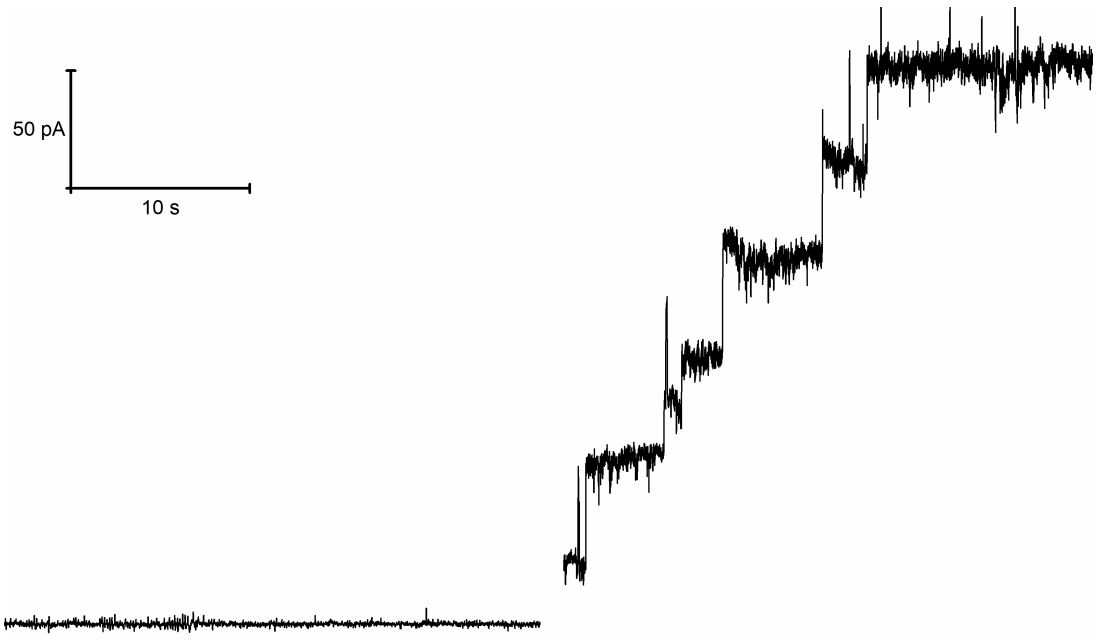

Figure S2. Controls for SecY(329C)EG. Left: The channels remained closed in the absence of the signal peptide from pOA. Application of φ = −85 mV did not elicit an increment in current. Right: Voltage triggered closings of SecYEG in complex with the signal peptide from pOA (in the absence of KTT). Application of much smaller φ values (= −85 mV) rendered the closing kinetics comparable to those observed under cross-linking conditions (Figure 2A,C, φ = −140 mV).

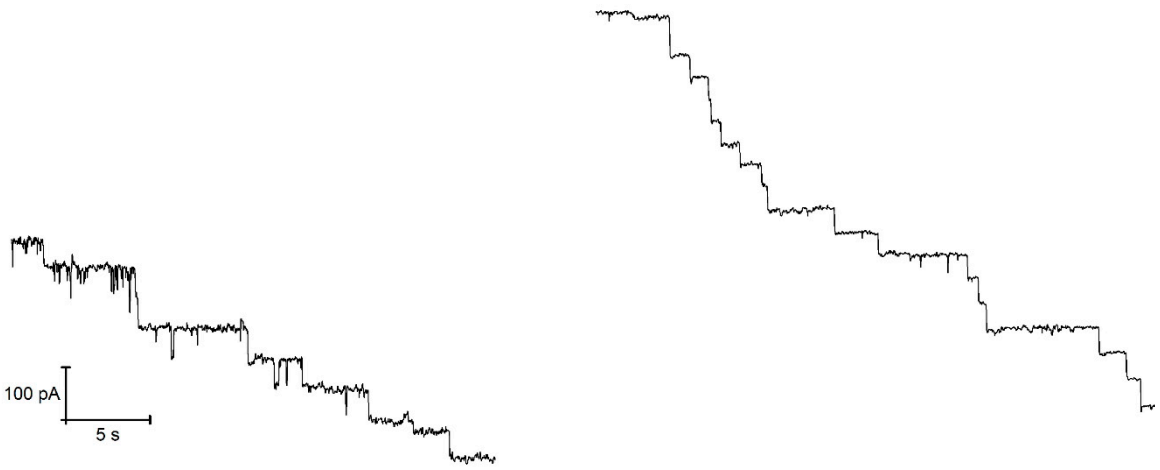

Figure S3. Voltage gated closings of (i) the SecYEG in complex with FtsQ-RNC (left panel) and (ii) the SecY(F67C)E(S120C)G mutant with the plug crosslinked to SecE by 1 mM KTT (right panel) at φ = +105 mV.