

## SUPPLEMENTAL INFORMATION

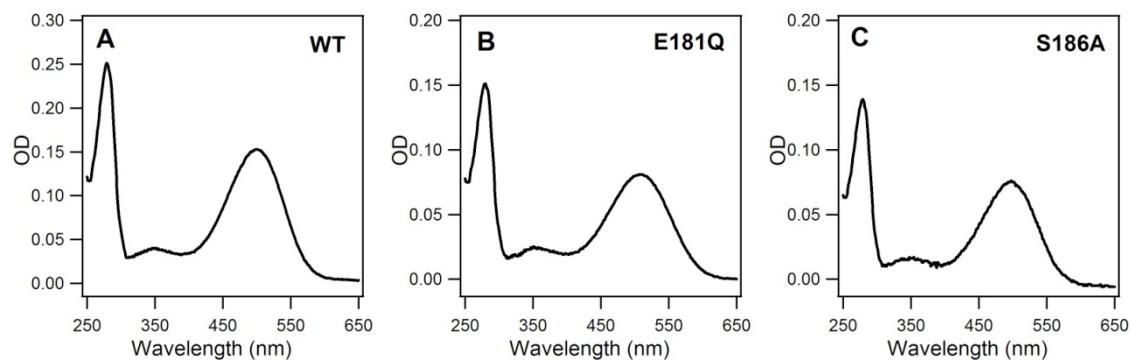


Figure 1. The UV-visible absorption spectra of purified dark-state (A) rhodopsin, (B) E181Q, and (C) S186A at room temperature.

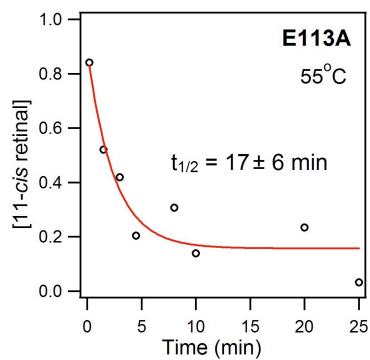


Figure 2. Rate of thermal isomerization for the E113A rhodopsin mutant measured at pH 6.5 in Buffer B (50 mM sodium phosphate, 0.1% DM), which has a deprotonated Schiff base.