Role of a Helix B Lysine Residue in the Photoactive Site in Channelrhodopsins

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SUPPORTING FIGURES

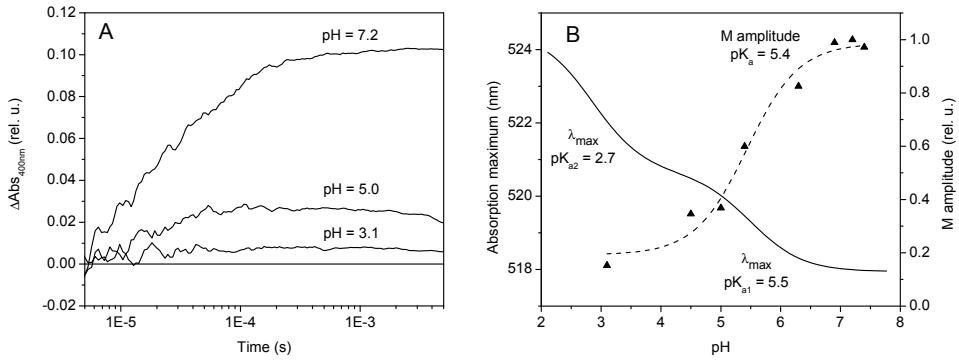

FIGURE S1 (*A*) Absorbance changes monitored at 400 nm in wild-type *Ca*ChR1 in response to a 6-ns laser flash (532 nm) at different pH, as indicated in the figure. (*B*) Correlation of the first acidic spectral transition (left axis, squares and solid line, part of the data shown in Fig. 5) and the amplitude of the M absorption difference (right axis, triangles and dashed line) measured as shown in panel *A*. The pK_as were calculated using the Henderson-Hasselbalch equation.

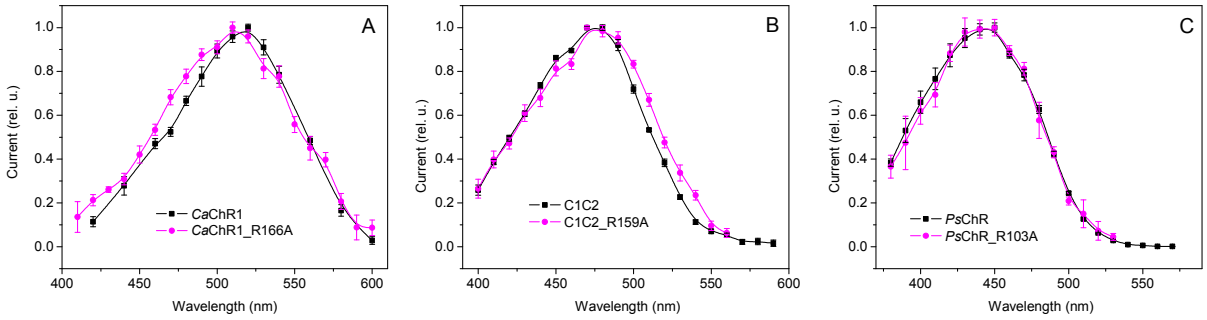

FIGURE S2 Action spectra of channel currents generated in HEK293 cells after alanine substitution for the Arg-82 homolog: (*A*) *Ca*ChR1; (*B*) C1C2; (*C*) *Ps*ChR. In all panels, black squares and lines show data for wild-type pigments, and magenta circles and lines for the mutants.

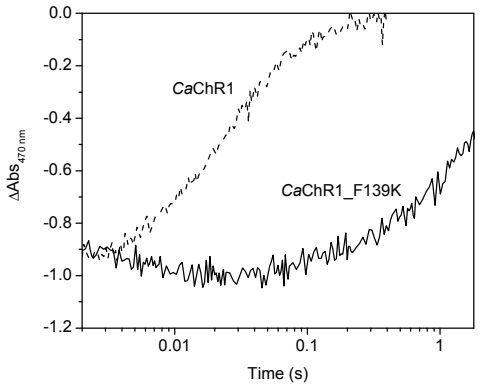

FIGURE S3 Recovery of the unphotolyzed state in wild-type CaChR1 and its F139K mutant monitored as absorbance changes at 470 nm in response to a 6-ns laser flash (532 nm).