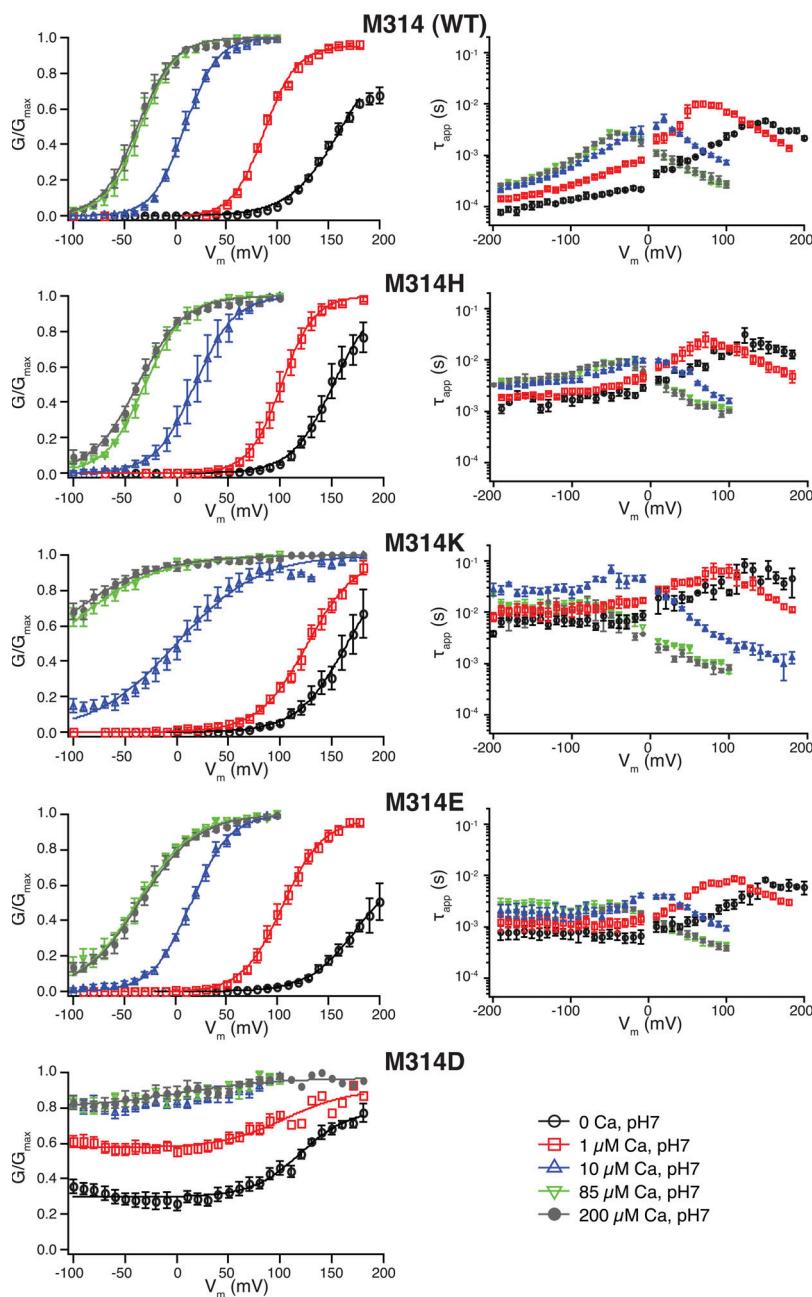
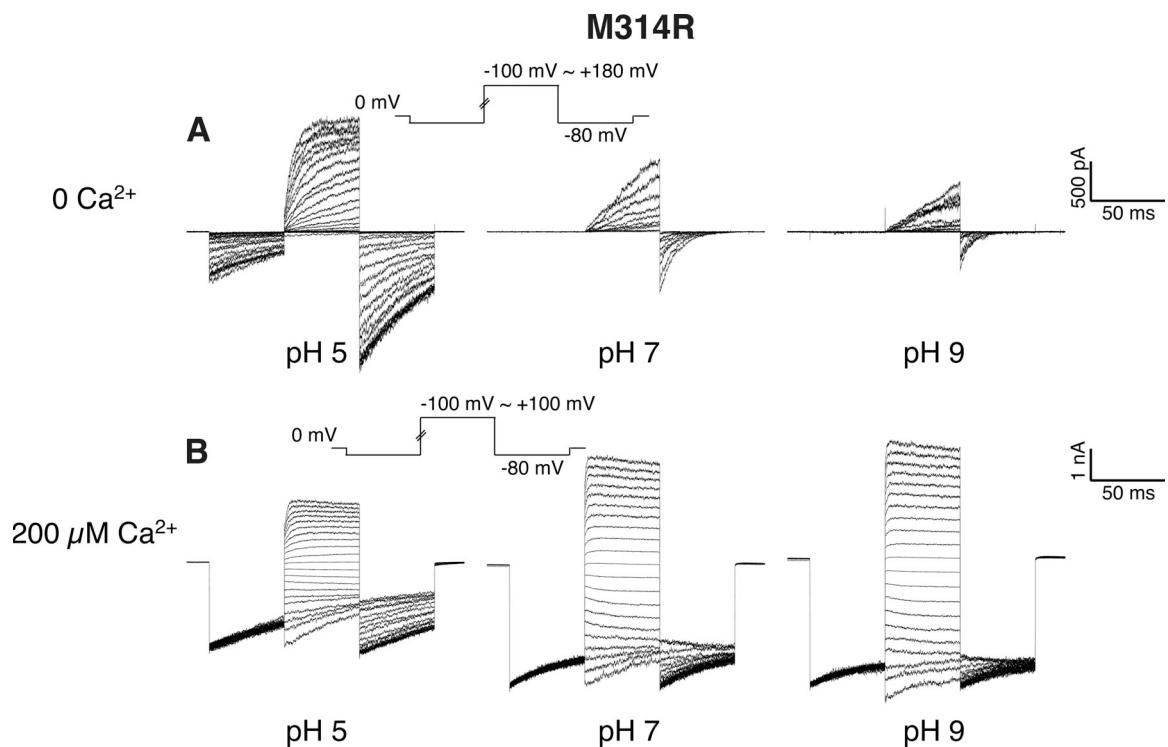


Chen and Aldrich, <http://www.jgp.org/cgi/content/full/jgp.201110632/DC1>



**Figure S1.**  $\text{Ca}^{2+}$ -dependent G-V shifts (left) and  $\tau_{app}$ -V relations (right) in pH 7 for WT, M314H, M314K, M314E, and M314D BK channels.



**Figure S2.** Current traces in response to activation voltage protocols for M314R channels in  $0 \text{ Ca}^{2+}$  (A) and  $200 \mu\text{M Ca}^{2+}$  (B), in pH 5 (left), pH 7 (middle), and pH 9 (right).