

Table 3
Model parameter values that best simulate flash photocurrents in dark adapted bass single cones.^a

| | Parameters | Category | Units | Cone 1 | | Cone 2 | | Cone 3 | |
|-------------------------|------------------|-------------|--|--------------------|--------|--------|--------|--------|------|
| VP* | Intensity | Statistical | VP* | 167 | 17,443 | 174 | 17,136 | 173 | 7720 |
| GRK | γ_{max} | Adjustable | $\mu\text{M}/\text{s}$ | 100 | 65 | 100 | 70 | 105 | 68 |
| | μ_0 | Invariant | $\mu\text{M}/\text{s}$ | 0.5 | | | | | |
| | ω_γ | Invariant | | 0.1 | | | | | |
| T* | ψ_0 | Adjustable | 1/s | ^b 230 | | 215 | | 230 | |
| | ω_{act} | Invariant | | ^c 0.69 | | | | | |
| PDE* | ϵ_{sub} | Adjustable | $\mu\text{M}/\text{s}/\text{s}$ per molecule | ^d 0.185 | | 0.323 | | 0.416 | |
| | α_{PDE} | Adjustable | 1/s | 17.4 | 47 | 7 | 19 | 14 | 28 |
| GC | V_{Ca}^{max} | Invariant | $\mu\text{M}/\text{s}$ | ^e 110.5 | | | | | |
| | G_{Ca}^{GC} | Invariant | μM | 0.1 | | | | | |
| | K_{Ca} | Invariant | | 2 | | | | | |
| Ca ²⁺ influx | n_{GC} | Statistical | $\mu\text{M}/\text{s}$ | 25.3 | | 37.5 | | 17 | |
| | P_f | Invariant | | ^f 0.34 | | | | | |
| Ca ²⁺ buffer | K_{HA} | Adjustable | μM | ^g 0.030 | | 0.044 | | 0.091 | |
| | C_{HA} | Adjustable | μM | 21.4 | | 4.6 | | 66 | |
| Ca ²⁺ efflux | B | Adjustable | | 10.6 | | 7 | | 15 | |
| | J_{Ca}^{max} | Statistical | ρA | ^h 4 | | 3.23 | | 7.63 | |
| | K_{Ca}^{exc} | Adjustable | μM | 0.025 | | 0.005 | | 0.025 | |

^a Values of parameters first used to compute dark current are not repeated here. They have the same values listed in Table 1.

^b Experimental value is unknown in cones.

^c Value from experimental data (Gibson et al., 2000). Experimental data available only for rhodopsin.

^d Text Equation (2.13).

^e Experimental value assigned from experimental measurements in truncated carp cones ($V_{max} = 140 \mu\text{M}/\text{s}$, (Takemoto et al., 2009)).

^f Experimental value (Ohshima et al., 2000).

^g Experimental mean values in aequorin-loaded rods are $K_{HA} < 0.7 \mu\text{M}$, $C_{HA} 37 \mu\text{M}$ and $B 16$ (Lagnado et al., 1992). Experimental values are unknown in cones.

^h With these values the computed mean time constant of Ca²⁺ clearance from bass cone outer segment when all CNG channels are suddenly closed is 40.0 ± 15.4 ms, similar to the experimental value of 43 ± 9.8 ms in the tiger salamander cone (Sampath et al., 1999).