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Supplementary Material

A quantitative account of mammalian rod phototransduction with PDE6 dimeric activation: Responses to bright flashes

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Supplementary Figure S1: Legend

Examples from the literature of bright-flash electrical response families recorded from mammalian rod photoreceptors using the suction pipette method.

Each panel shows a published family of responses to flashes of increasing intensity presented to a dark-adapted mammalian rod photoreceptor, and in each case an upward deflection represents a reduction in circulating current. The dark current level is indicated by the baseline before time zero, and (except in panel D) the zero current level is apparent as the peak level of the brightest response. Flash duration was typically 10–20 ms; wavelength was ~500 nm; flash intensity typically increased by a factor of 2–4 between traces. The estimated intensities of the dimmest and brightest flashes in each panel are shown in R*/rod near the traces; the rod's collecting area was taken to be 0.5 – 1 μm^2, in line with the authors' data.

A. Monkey rod from Fig. 1 of Baylor, Nunn & Schnapf (1984) [1]. *Macaca fascicularis*. Locke solution, bicarbonate buffer, 36 °C. 500 nm, 11 ms flashes. Intensities: 1.7 – 503 photon μm^{-2}; collecting area ~1 μm^2.

B. Rabbit rod from Fig. 1 of Nakatani, Tamura & Yau (1991) [2]. Locke solution, 41 °C. 500 nm, 8 ms flashes. Intensities: 7.6, 14, 28, 55, 110, 210, 410 and 1600 photon μm^{-2}; collecting area ~0.5 μm^2.

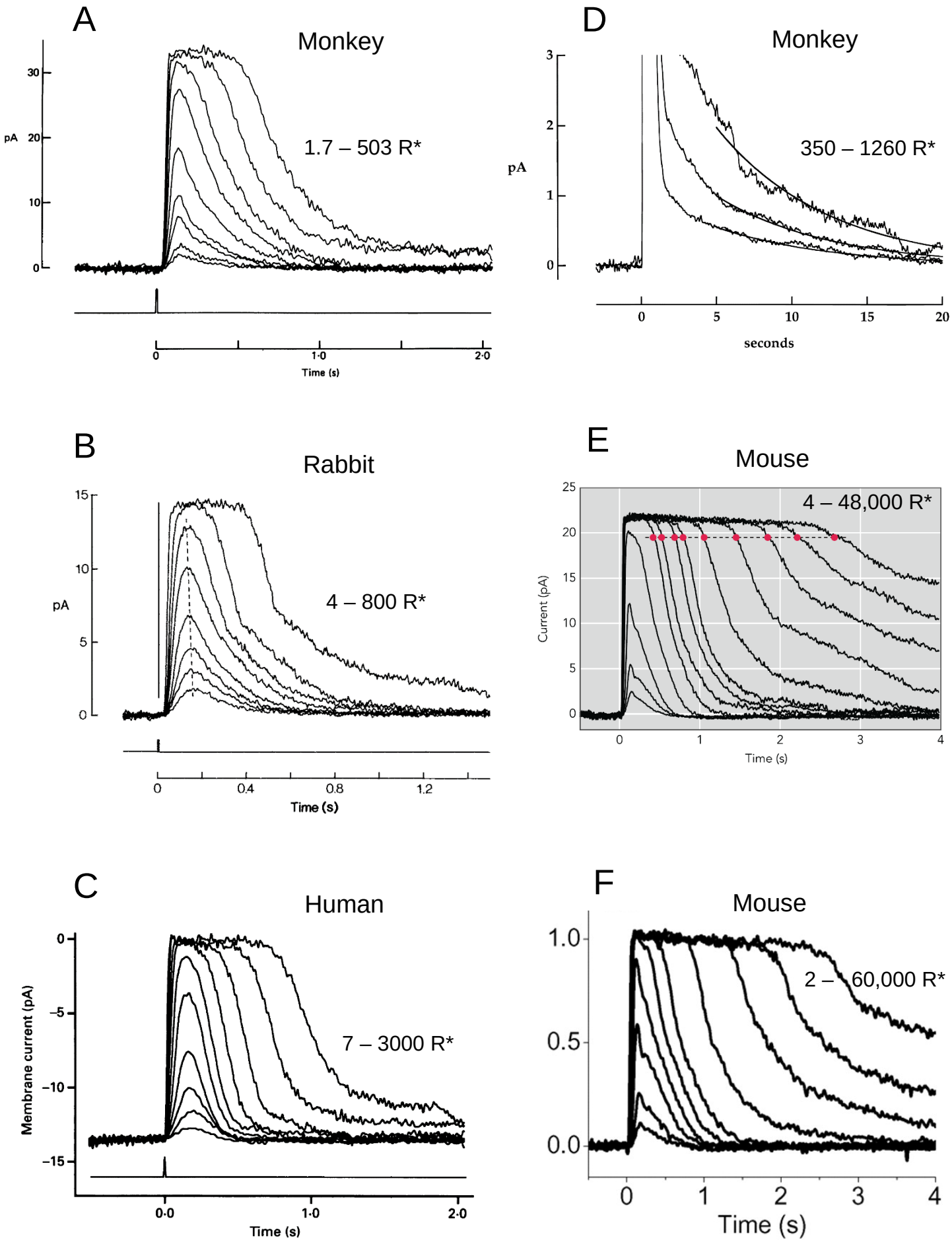
C. Human rod from Fig. 1 of Kraft, Schneeweis & Schnapf (1993) [3]. Locke solution, 37 °C. 500 nm, 10 ms flashes, in increments of ~2×, from 7–3060 photon μm^{-2}; collecting area ~1 μm^2.

D. Monkey rod from Fig. 2 of Kraft & Schnapf (1998) [4]. *Macaca fascicularis*. Locke solution, 37 °C. 500 nm. Flash intensities: 350, 630 and 1260 photon μm^{-2}; trials averaged: 54, 46 and 9, respectively; collecting area ~1 μm^2. Maximal response, 25 pA. This panel is included to show recovery of the mean response at very late times.

E. Mouse rod from Fig. 4A of Burns & Pugh (2010) [5]. Sv129 WT mouse. 10 ms flashes, in intensity increments of 2–4×, from 8 to 86,000 photon μm^{-2}.

F. Mouse rod from Sakurai et al (2011) [6]. C57BL6 WT mouse. Locke solution, 34–37 °C. 500 nm, 20 ms flashes, in increments of 0.5 $\log_{10}$ units from a dimmest of 3.9 photon μm^{-2}; collecting area ~0.5 μm^2.

Supplementary Figure S1



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