Yu et al., http://www.jgp.org/cgi/content/full/jgp.201511526/DC1

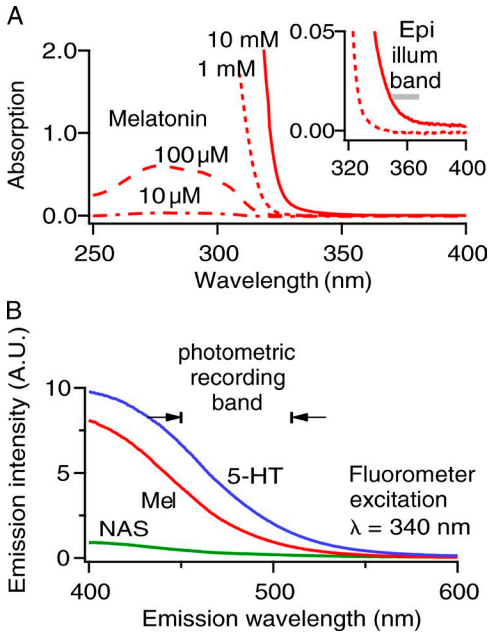

Figure S1. Absorption and emission spectra of indoleamines. (A) Four absorption spectra for a 1,000-fold range of solution concentrations of melatonin measured in a UV spectrophotometer. Absorption is broad from 250 to 320 nm but drops off precipitously as the wavelength approaches 340–360 nm (see inset). In our microscope, UV light shorter than 340 nm is not transmitted, and adequate optical transmission requires longer wavelengths. Therefore, for cell experiments we used an epi-illumination excitation light of nominally 350–366 nm (see inset) and a very high concentration of indoleamines to record enough photons of fluorescence. (B) The fluorescence emission spectra of the indoleamines measured in a fluorometer. The figure also marks the transmission range (440–520 nm) of the emission filter used for the cell photometry when we study cells under the microscope. Melatonin and 5-HT could be excited adequately by our epi-illumination light centered at 358 nm, right at the long-wavelength extreme of their absorption spectrum, but NAS could not, although it could be excited in the fluorometer at the 340-nm wavelength used here.

The supplemental text, included in a separate TXT file, lists the IGOR Pro procedure used for simulating the diffusion of melatonin in the pipette, through the cytoplasm, across the cell membrane, and through the bath.