Visual Neuroscience

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Response to Kuraku et al., 2020

Jeffry I. Fasick[1] and Phyllis R. Robinson[2]

[1]Department of Biological Sciences, The University of Tampa, Tampa, Florida, and [2]Department of Biological Sciences, University of Maryland Baltimore County, Baltimore, Maryland

Letter

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***Address correspondence to:**
Jeffry I. Fasick,
E-mail: jfasick@ut.edu

In our recent article, Fasick et al. (2019), we examined 18 amino acid positions in the whale shark Rh1 gene that have previously been identified to influence the spectral tuning of Rh1 pigments. Based on this analysis, we established a predicted absorbance value of 496 nm for whale shark Rh1. A recent paper by Hart et al. (2020) confirms the model that we presented by comparing spectral tuning residues between whale shark Rh1 and bamboo shark Rh1. Hart et al. examined 46 spectral tuning positions and concluded that the 2 Rh1 sequences possessed identical residues at all spectral tuning positions involved with the wavelength modulation of normal, wildtype Rh1 pigments. We came to the conclusion that Hara et al. may have expressed whale shark RRh rather than Rh1 based on the fact that RRh pigments typically maximally absorb light <480 nm; only the RRh and not the Rh1 opsin sequence was curated in the Hara et al. supplemental files; and that the current modeling data supported a whale shark Rh1 pigment that maximally absorbs light near 500 nm. Given the fact that Hara et al. state that whale shark Rh1 and not RRh was expressed by Hara et al., we acknowledge that they expressed a pigment with an absorbance maximum of 478 nm.

References

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