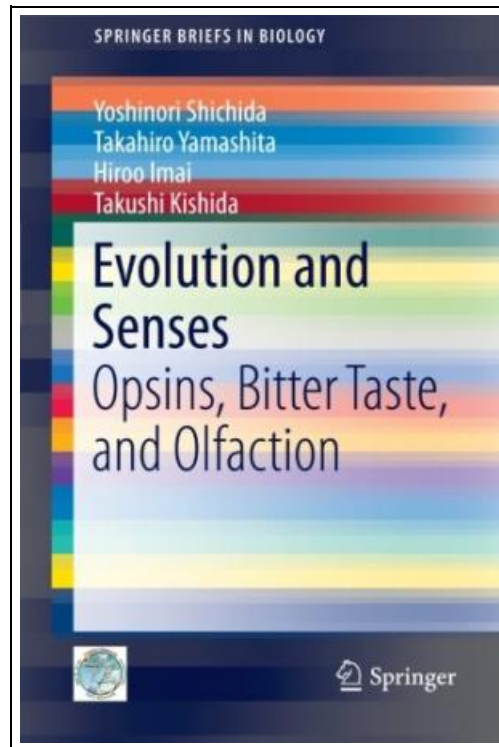


## Evolution and Senses: Opsins, Bitter Taste, and Olfaction



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*A very amazing publication with perfect and lucid information. We have read through and that i am certain that i will planning to study once more yet again in the future. You will not really feel monotony at anytime of the time (that's what catalogues are for about should you question me).*

**(Matilda Hoeger V)**

## EVOLUTION AND SENSES: OPSINS, BITTER TASTE, AND OLFACTION



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Springer Verlag, Japan, Japan, 2013. Paperback. Book Condition: New. 2013 ed.. 226 x 152 mm. Language: English . Brand New Book. In this book, we focus on the sensing and the evolution of animals. Using the five senses (visual, auditory and olfactory perception, and taste and touch), we can receive environmental stimuli and respond to them. Changes of these sensitivities might cause changes of habitat, activity timing, diet, etc. and vice versa. Recent advances in genome and molecular analysis enable us to investigate certain changes of the receptors or mechanisms involved in sensing and give us clues to understand the evolution of animals related to them. Among these studies, here we will learn about three topics. The first work focuses on the molecular evolution of opsins. In addition to the well-known function of opsins as visual receptors, opsins can be related with non-visual photoreception such as photoentrainment of circadian rhythm, photoperiodism and background adaptation. Molecular phylogenetic studies revealed that all opsin genes are evolved from one ancient opsin gene. The evaluation of the functions of each extant opsin protein based on the molecular features enables us to predict the molecular evolution and diversification of opsins during the evolution of animals. These studies will shed light on which amino-acid substitutions cause the functional diversification of opsins and how they influenced the evolution of animals. The second work is about bitter taste perception. It is a key detection mechanism against the ingestion of bioactive substances. Genetic and behavioral evidence revealed the existence of non-taster Japanese macaques, which originated from a restricted region of Japan. This finding might give a clue for elucidating the ecological, evolutionary, and neurobiological aspects of bitter taste perception of primates, as related to the plants that they sometimes use as foods in their habitats. The third work is...



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