

Glu¹⁴, modulates during the photocycle, the passive conductance overlaps with late photocycle steps mainly and is therefore switchable by light. In such way a structure-based approach is presented how to design ion-specific channels from microbial pumps as novel optogenetic tools. Furthermore it was shown that structural changes which are much smaller than generally expected, discriminate pump and channel properties correlated with active and passive ion transport, respectively.

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