UV wavelengths experienced during development affect larval newt visual sensitivity and predation efficiency

Titre	UV wavelengths experienced during development affect larval newt visual sensitivity and predation efficiency
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Résumé en anglais	We experimentally investigated the influence of developmental plasticity of ultraviolet (UV) visual sensitivity on predation efficiency of the larval smooth newt, Lissotriton vulgaris. We quantified expression of SWS1 opsin gene (UV-sensitive protein of photoreceptor cells) in the retinas of individuals who had developed in the presence (UV+) or absence (UV-) of UV light (developmental treatments), and tested their predation efficiency under UV+ and UV- light (testing treatments). We found that both SWS1 opsin expression and predation efficiency were significantly reduced in the UV- developmental group. Larvae in the UV- testing environment displayed consistently lower predation efficiency regardless of their developmental treatment. These results prove for the first time, we believe, functional UV vision and developmental plasticity of UV sensitivity in an amphibian at the larval stage. They also demonstrate that UV wavelengths enhance predation efficiency and suggest that the magnitude of the behavioural response depends on retinal properties induced by the developmental lighting environment.
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