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LABORATORY OF EYE BIOLOGY

eye biology, cre recombinase, transgenic mice, conditional knockout mice

In the picture:

1. Naoko Dupačová | 2. Vojtěch Matoušek | 3. Zbyněk Kozmik | 4. Kamil Matulka | 5. Chryssoula Pantzartzi | 6. Barbora Antošová | 7. Jitka Láčová

We use mouse as a model to provide novel insights into the development of the human visual system. We try to integrate several distinct approaches, especially genetics, physiology, and molecular techniques. Our current work is focused on systematic preparation of new transgenic Cre lines with defined expression in the eye tissues and their consecutive usage for systematic analysis of conditional mutants in the genes coding for transcriptional factors and components of the key signalling pathways. Mutant mice are subjected to detailed phenotyping with the aim to uncover the mechanisms underlying eye defects.

Selected recent papers:

[Ejima N.](#) WNT/ β -Catenin Signaling in Vertebrate Eye Development. *Front Cell Dev Biol.* 2016 Nov 30;4:138. Review.

[Antosova B, Smolikova J, Klimova L, Lachova J, Bendova M, Kozmikova J, Machon D, Kozmik Z.](#) The gene regulatory network of lens induction is wired through Meis-dependent shadow enhancers of Pax6. *PLOS Genetics* 2016 Dec 5;12(12):e1006441. doi: 10.1371/journal.pgen.1006441.

