Ondřej Štěpánek

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EMBO Installation Grantee

For more information, publications and grants please visit:
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LABORATORY OF

ADAPTIVE IMMUNITY

T cell, antigenic signalling, cell fate decision, self-tolerance, immunity

In the picture:
1. Ondřej Štěpánek | **2.** Aleš Drobek | **3.** Tereza Přibíková | **4.** Veronika Horková | **5.** Lukáš Cupák | **6.** Alena Moudrá | **7.** Martina Huranová | **8.** Veronika Niederlová

Our group of Adaptive Immunity was established in 2016. We study T cells, a type of white blood cells that is involved in adaptive immune responses. A major task of a T cell is to discriminate between self and non-self, i.e., to avoid autoimmune reaction and fight against the invading pathogens. Our research focuses on understanding how antigenic signals determine the fate decisions of T cells during their development, homeostasis, and immune responses. We cover a wide range of processes, from molecular determinants of T-cell responses to cellular interactions in animal models of infection and autoimmunity. At the moment, we are working on three specific projects in the field of regulatory T cells, formation of self-tolerant and immune-sufficient T-cell repertoire, and origin and function of 'virtual' memory T cells. The long-term aim of our lab is to understand how T-cell receptor signals are initiated and how the primary sequence of TCR-encoding genes predetermines various T-cell fate decisions during the life-time of an individual.

Selected recent papers:

Huranova M, Stepanek O: Role of actin cytoskeleton at multiple levels of T cell activation. **AIMS Molecular Science, 2016**, 3(4): 585-596. Invited review.

Hrdinka M, Sudan K, Just S, Drobek A, Stepanek O, Schlüter D, Reinhold D, Jordan B A, Gintschel P, Schraven B, Kreutz M R: Normal Development and Function of T Cells in Proline Rich 7 (Prr7) Deficient Mice. **PLoS One. 2016** Sep 22;11(9):e0162863.

Palmer E, Drobek A, Stepanek O: Opposing effects of actin signaling and LFA-1 on establishing the affinity threshold for inducing effector T-cell responses in mice. Eur. **J. Immunol. 2016** 46: 1887–1901.


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