

# ATTILA BÁCSI



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## RESEARCH AREA

Investigation of the role of reactive oxygen species in inflammatory processes. Studying how pollen-derived reactive radicals influence the function of human cells and how they affect immune responses against pollen antigens. Investigation of the interactions between the repair of oxidative DNA damage and the development of inflammation, with particular attention to the effect of the 8-oxoguanine DNA glycosylase enzyme on the activation of small molecular weight GTPases. Analysis of the interaction of signaling pathways induced by different pattern recognition receptors in human dendritic cell and macrophage subpopulations.

## TECHNIQUES AVAILABLE IN THE LAB

Isolation of human immune cells from peripheral blood and various tissues. In vitro differentiation and culture of monocyte-derived dendritic cells. Phenotypic (flow cytometry) and functional (phagocytosis analysis, cytokine and chemokine production /ELISA and ELISPOT/) examination of immune cells. Investigation of airway inflammatory processes in experimental animal models.

## SELECTED PUBLICATIONS

Czimmerer, Z., Halasz, L., Daniel, B., Varga, Z., Bene, K., Domokos, A., Hoeksema, M., Shen, Z., Berger, W.K., Cseh, T., Jambrovics, K., Kolostyak, Z., Fenyvesi, F., Varadi, J., Poliska, S., Hajas, G., Szatmari, I., Glass, C.K., **Bacsi, A.**, Nagy, L. (2022) The epigenetic state of IL-4-polarized macrophages enables inflammatory cistromic expansion and extended synergistic response to TLR ligands. **Immunity** **55**: 2006-2026.e6.

Tóth, M., Muzsai, S., Regulski, K., Szendi-Szatmári, T., Czimmerer, Z., Rajnavölgyi, É., Chapot-Chartier, M., **Bácsi, A.** (2022) The Phagocytosis of Lacticaseibacillus casei and Its Immunomodulatory Properties on Human Monocyte-Derived Dendritic Cells Depend on the Expression of Lc-p75, a Bacterial Peptidoglycan Hydrolase. **Int J Mol Sci** **23**: 7620.

**Bácsi, A.**, Lucas, R., Sütő, M.I., Szklenár, M., Bohn, T., Rühl, R. (2022) An immune-shift induced by lycopene; from an eosinophil-dominant type towards an eosinophil/neutrophil-co-dominant type of airway inflammation. **Food Funct** **13**: 6534-6544.

Mázló, A., Kovács, R., Miltner, N., Tóth, M., Veréb, Z., Szabó, K., Bacskai, I., Pázmándi, K., Apáti, Á., Bíró, T., Bene, K., Rajnavölgyi, É., **Bácsi, A.** (2021) MSC-like cells increase ability of monocyte-derived dendritic cells to polarize IL-17-/IL-10-producing T cells via CTLA-4. **iScience** **24**: 102312.

Pázmándi, K., Sütő, M., Fekete, T., Varga, A., Boldizsár, E., Boldogh, I., **Bácsi, A.** (2019) Oxidized base 8-oxoguanine, a product of DNA repair processes, contributes to dendritic cell activation. **Free Radic Biol Med** **143**: 209-220.