



Seminar

Tuesday July 12th 11.00

Amphithéâtre de la délégation du CNRS
Domaine Universitaire de la DOUA, 2 Rue Albert Einstein, Villeurbanne
(http://oscar.univ-lyon1.fr/appli-externe/plan/plans/plan_campus_ouest.html)

Jan Tuckermann

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<https://www.uni-ulm.de/nawi/nawi-bio/research/tuckermann-lab.html>

"Modes of GR action revised – Novel mechanisms of corticosteroids in inflammation and bone integrity"

Abstract

The Tuckerman Laboratory made major contributions to the molecular mechanisms of corticosteroids in beneficial and side effects of steroid therapy. With the help of conditional and function-selective knockout mice for the glucocorticoid receptor (GR) the lab identified critical cell types and novel mechanisms for anti-inflammatory activities of glucocorticoids in different inflammatory disease models. Furthermore we made the discovery that in a model of lung inflammation the anti-inflammatory action of glucocorticoids is not dependent on the inhibition of pro-inflammatory mediators, but rather requires cooperation with pro-inflammatory signaling pathways (e.g. p38) to induce anti-inflammatory acting genes and alternative polarization of macrophages.

If you wish to meet Jan Tuckermann, please contact Bénédicte Chazaud (benedicte.chazaud@inserm.fr).

Selected publications:

- Vettorazzi S, Bode C, Dejager L, Frappart L, Shelest E, Klaßen C, Tasdogan A, Reichardt HM, Libert C, Schneider M, Weih F, Henriette Uhlenhaut N, David JP, Gräler M, Kleiman A, Tuckermann JP. Glucocorticoids limit acute lung inflammation in concert with inflammatory stimuli by induction of SphK1. **Nat Commun.** **2015** 6:7796.
- Lim HW, Uhlenhaut NH, Rauch A, Weiner J, Hübner S, Hübner N, Won KJ, Lazar MA, Tuckermann J, Steger DJ. Genomic redistribution of GR monomers and dimers mediates transcriptional response to exogenous glucocorticoid in vivo. **Genome Res.** **2015** 25:836-44.
- Vandevyver S, Dejager L, Van Bogaert T, Kleyman A, Liu Y, Tuckermann J, Libert C. Glucocorticoid receptor dimerization induces MKP1 to protect against TNF-induced inflammation. **J Clin Invest.** **2012** 122:2130-40.
- Baschant U, Lane NE, Tuckermann J. The multiple facets of glucocorticoid action in rheumatoid arthritis. **Nat Rev Rheumatol.** **2012** 8:645-55.
- Kleiman A, Hübner S, Rodriguez Parkitna JM, Neumann A, Hofer S, Weigand MA, Bauer M, Schmid W, Schütz G, Libert C, Reichardt HM, Tuckermann JP. Glucocorticoid receptor dimerization is required for survival in septic shock via suppression of interleukin-1 in macrophages. **FASEB J.** **2012** 26:722-9.
- Baschant U, Frappart L, Rauchhaus U, Bruns L, Reichardt HM, Kamradt T, Bräuer R, Tuckermann JP. Glucocorticoid therapy of antigen-induced arthritis depends on the dimerized glucocorticoid receptor in T cells. **Proc Natl Acad Sci U S A.** **2011** 108:19317-22.
- Tuckermann JP, Kleiman A, Moriggl R, Spanbroek R, Neumann A, Illing A, Clausen BE, Stride B, Förster I, Habenicht AJ, Reichardt HM, Tronche F, Schmid W, Schütz G. Macrophages and neutrophils are the targets for immune suppression by glucocorticoids in contact allergy. **J Clin Invest.** **2007** 117:1381-90.
- Reichardt HM, Tuckermann JP, Göttlicher M, Vujic M, Weih F, Angel P, Herrlich P, Schütz G. Repression of inflammatory responses in the absence of DNA binding by the glucocorticoid receptor. **EMBO J.** **2001** 20:7168-73.
- Tuckermann JP, Reichardt HM, Arribas R, Richter KH, Schütz G, Angel P. The DNA binding-independent function of the glucocorticoid receptor mediates repression of AP-1-dependent genes in skin. **J Cell Biol.** **1999** 147:1365-70.
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