Prof. Michael Hölzel, MD

Institute of Clinical Chemistry and Clinical Pharmacology

new Member since 2013

Rheinische Friedrich-Wilhelms-Universität Bonn
Unit for RNA Biology, Institute of Clinical Chemistry and Clinical Pharmacology

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Research Expertise

Michael Hölzel has long-standing research expertise in the field of tumor biology and functional genomics with a particular focus on neural crest derived tumors such as melanoma. Currently his group investigates how the immune system crosstalks with the tumor cells in response to danger and proinflammatory signals released by therapy-induced tumor tissue injury. A central hypothesis is that this reciprocal communication drives therapy relapse due to rewiring of survival and differentiation pathways in tumor cells. This knowledge is critically needed for the rational combination of immunotherapies and targeted signal transduction inhibitors in the clinic.

Education / Training

University of Munich, Germany, Medicine, MD thesis, 2004

University of Munich, Germany, Medicine MD, 2003

Appointments / Positions Held

2012 - present
W2 Professor, Unit for RNA Biology, Institute of Clinical Chemistry and Clinical Pharmacology, University of Bonn, Germany

2007 - 2011
Postdoctoral Fellow, Laboratory of Rene Bernards, The Netherlands Cancer Institute, Amsterdam, The Netherlands

2003 - 2006
Residency Hematology/Oncology, University Hospital Munich (LMU), Germany

Honors / Awards

2002
Scholarship „Harvard-Munich Alliance“

1999
Scholarship “Studienstiftung des deutschen Volkes”

Most Relevant Publications for Prof. Michael Hölzel

1. Riesenberg R, Groetchen A, Siddaway R, Bald T, Reinhardt J, Smorra D, Kohlmeyer J, Renn M, Phung B, Aymans P, Schmidt T, Hornung V, Davidson I, Goding CR, Jönsson G, Landsberg J, Tüting T, **Hölzel M** (2015) MITF and c-Jun antagonism interconnects melanoma dedifferentiation with pro-inflammatory cytokine responsiveness and myeloid cell recruitment. Nature Communications. 6:8755´

2. **Hölzel M**, Landsberg J, Glodde N, Bald T, Rogava M, Riesenberg S, Becker A, Jönsson G, Tüting T. (2015epub) A Preclinical Model of Malignant Peripheral Nerve Sheath Tumor-like Melanoma Is Characterized by Infiltrating Mast Cells. Cancer Res. 76(2):251-63.

3. Bald, T., Landsberg, J., Lopez-Ramos, D., Renn, M., Glodde, N., Jansen, P., Gaffal, E., Steitz, J., Tolba, R., Kalinke, U., Limmer, A., Jönsson, G., **Hölzel, M.**, Tüting T (2014). Immune-cell poor melanomas benefit from PD-1 blockade after targeted type I IFN activation. Cancer Discovery, 2014 Mar 3. Epub ahead of print.

4. Bald, T., Quast, T., Landsberg, J., Rogava, M., Glodde, N., Lopez-Ramos, D., Kohlmeyer, J., Riesenberg, S., van den Boorn-Konijnenberg, D., Hömig-Hölzel, C., Reuten, R. Schadow, B., Weighardt, I., Wenzel, D., Helfrich, I., Schadendorf, D., Bloch, W.,. Bianchi, M.E., Koch, M., Fleischmann, B.K., Förster, I., Kastenmüller, W., Kolanus, W., **Hölzel, M.***, Gaffal, G.*, Tüting, T* (*corresponding authors). (2014). Ultraviolet radiation-induced inflammation promotes angiotropism and metastasis in melanoma. Nature, 507, 109-13.

5. Landsberg, J., Kohlmeyer, J., Renn, M., Bald, T., Rogava, M., Cron, M., Fatho, M., Lennerz, V., Wölfel, T., **Hölzel, M.**, Tüting, T. (2012) Melanomas resist T-cell therapy through inflammation-induced reversible dedifferentiation. Nature, 490, 412–416.

6. Huang, S., **Hölzel, M.**, Knijnenburger, T., Schlicker, A., Roepman, P., McDermott, U., Garnett, M.J., Grernrum, W., Sun, C., Prahallad, A., Groenendijk, F.H., Mittempergher, L., Nijkamp, W., Neefjes, J., Salazar, R., Ten Dijke, P., Uramoto, H., Tanaka, F., Beijersbergen, R.L., Wessels, L.F., Bernards, R. (2012) MED12 controls the response to multiple cancer drugs through regulation of TGFβ receptor signaling. Cell, 151, 937–950.

7. **Hölzel, M.***, Huang, S.*, Koster, J., Ora, I., Lakeman, A., Caron, H., Nijkamp, W., Xie, J., Callens, T., Asgharzadeh, S., Seeger, RC., Messiaen, L., Versteeg, R., Bernards, R. NF1 is a tumor suppressor in neuroblastoma that determines retinoic acid response and disease outcome. Cell, 2010; 142, 218–229.

8. **Hölzel M**, Orban M, Hochstatter J, Rohrmoser M, Harasim T, Malamoussi A, Kremmer E, Längst G, Eick D. (2010) Defects in 18 S or 28 S rRNA processing activate the p53 pathway. J Biol Chem., 285, 6364-70.

9. Huang S, Laoukili J, Epping MT, Koster J, **Hölzel M.,** Westerman BA, Nijkamp W, Hata A, Asgharzadeh S, Seeger RC, Versteeg R, Beijersbergen RL, Bernards R. (2009) ZNF423 is critically required for retinoic acid-induced differentiation and is a marker of neuroblastoma outcome. Cancer Cell, 15, 328-40.

*These authors contributed equally