

Stefan Eichmüller

Studying biology at the Free University in Berlin. PhD in 1994 in neurobiology; internship at the MBL Woods Hole (MA, USA); research fellow at the Dept. of Dermatology Humboldt Univ., Berlin until 1997; since 1997 group leader at the Skin Cancer Unit. Habilitation 2004, Adjunct professor 2006.



Current Research

Our work is focusing on the two main skin tumors: Malignant melanoma, a tumor derived from the neuro-ectodermal melanocytes, and cutaneous T cell lymphoma (CTCL), a malignancy mainly derived from CD4⁺, skin-homing T cells. The clinical course of these diseases is quite different: While melanoma is very aggressive and often fast progressing, CTCL may be stable for many years but eventually also progresses to a fatal stage.

In the past years our group has analyzed and identified tumor-associated antigens and the immune responses mediated against these. For this purpose we utilized a variety of screening methods including SEREX, DNA hybridization, SSH, mRNA and protein expression analysis, as well as different methods for measuring autoantibodies in the serum of tumor patients and healthy controls. In addition, immunological responses mediated by T cells have been studied.

Recently, we invented a new group of tumor antigens called cancer-retina antigens due to their expression profile: Normally these proteins are only detected in photoreceptor cells, bipolar cells and pineal gland. We found numerous of these proteins being expressed in neuro-ectodermal tumors, especially in malignant melanoma and lung cancer. We have investigated the control of their transcription and their impact on melanoma cells and normal epithelial melanocytes.

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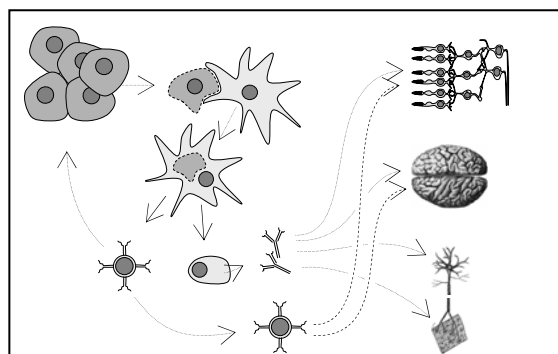
Future Projects and Goals

Auto-immune responses and the response of the tumor against these are presently in the focus of our work. Specific projects:

1. Usage of serum antibody responses against identified tumor antigens as diagnostic/prognostic markers
2. Cancer-retina antigens and their role in paraneoplasia and tumor defense
3. Control of protein expression in melanoma by microRNA

Selected Publications

- Eichmüller S et al. (2001) PNAS 98: 629-34.
Eichmüller S et al. (2003) Int J Cancer 104: 482-7.
Usener D et al. (2003) J Invest Dermatol 121: 198-206.
Dummer R et al. (2004) Blood 104: 1631-8.
Gerhardt A et al. (2004) Cancer Letters 208: 197-206.
Hartmann TB et al. (2005) Int J Cancer 114: 88-93.
Bazhin AV et al. (2007) CIL 56: 110-6.
Bazhin AV et al. (2007) Int J Cancer 120: 1268-76.
Eichmüller SB et al (2007) Curr Med Chem 14: 2489-94.
Bazhin AV et al. (2008) Mol Cancer Res 6: 110-8.



Immunological responses in tumor patients eventually cause autoimmun-responses against certain tissues and organs