IBI SEMINAR

“Adoptive Immunotherapy vs. Cancer Stem Cells”

Tuesday – November 10, 2012 – 10:15 a.m.
EPFL – room SV 1717a

Patrick Schmidt, PhD
Debiopharm Chair in Signal Transduction in Oncogenesis (Huelsken Lab), ISREC, School of Life Sciences, EPFL

host: Prof. M. Swartz

Abstract

The knowledge about the cellular composition of malignant tissue has been radically changed within the last years. It is assumed, that the initiation and maintenance of primary tumors and their corresponding metastases is mainly driven by a subpopulation of rare and therapy-resistant tumor cells. These cancer stem cells are responsible for the high number of relapses in solid as well as leukemic tumors after standard therapeutic approaches. The proven resistance against chemo- and radiotherapy of these cells urgently demands the discovery of new target structures within this subpopulation to serve as a basis for molecular therapy. The concept of adoptive immunotherapy with chimeric T cell receptors (CARs) is a useful approach for concerted eradication of subgroups of cells within a tissue. The modular composition of the recombinant receptor, consisting of either an antibody-based binding domain and a signalling domain from the endogenous T cell receptor complex, allows, on the one hand the manipulation of T cell signalling and on the other hand the recognition of nearly any antigen presented on the target cell. That's why it is possible to overcome the anergy of the immune system caused by the autologous tumor. Here I will present a strategic rationale and preliminary data concerning the development of new CARs that are directed against the stem cell subfraction of tumor cells.

See current IBI seminar calendar at http://ibi.epfl.ch/page-26291.html