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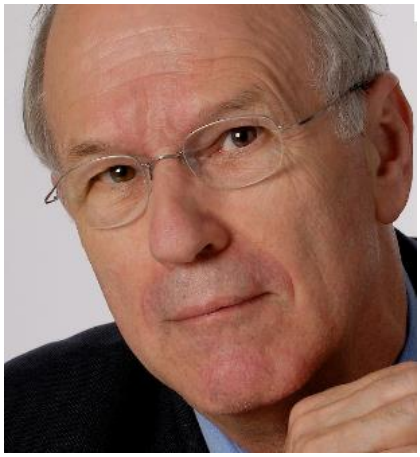
Skolkovo Institute of Science and Technology

Dear ALL,

We are proud to invite you to **Skoltech Colloquium!**



Guest Speaker: Anton Berns, Ph.D Professor, Skoltech Centre for Stem Cell Research, Moscow & The Netherlands Cancer Institute, Amsterdam.

When: October 31; **4:00pm**

Where: Institute of Gene Biology RAS, ul. Vavilova 34/5, Conference room, 1st floor.

What: Mouse models of cancer: cells-of-origin of small cell and non-small cell lung cancer.

Abstract: Small cell lung cancer (SCLC) is one of the most lethal human malignancies, due to its high metastatic potential and chemo-resistance upon relapse. Using the Rbf/f;p53f/f mouse model for SCLC, we found that the tumors are often composed of phenotypically different cells, characterized by mesenchyme and neuroendocrine markers. These cells often share a common origin. Crosstalk between these cells can endow the neuroendocrine component with metastatic capacity, illustrating the potential relevance of tumor cell heterogeneity in dictating functional tumor properties. Also specific genetic lesions appear to be associated with metastatic potential. Interestingly, the two cell types can also interconvert raising the question of their cell-of-origin. To investigate this in more detail, we inactivated Trp53 and Rb1 in distinct cell types in the adult lung by targeting Cre-recombinase expression to Clara, neuroendocrine, and alveolar type II cells using adenoviral vectors. We could show that neuroendocrine cells serve as the predominant although not the exclusive cell of origin of SCLC.
In contrast, mutant Kras-driven adenocarcinomas (one of the NSCLC subtypes) originates primarily from alveolar type II cells. However, in LSL-mutant-Kras;p53flox/flox mice also other cell types gave effectively rise to adenomas and adenocarcinomas. Our data indicate that both cell type specific features and the nature of the oncogenic lesion(s) are critical factors in determining the tumor initiating capacity of lung (progenitor) cells. Furthermore, the cell-of-origin appears to influence the properties of the resulting tumors.

Further Information:
If you would like to participate and for further information or questions, please e-mail Alesya Garifullina - garifullina@skolkovotech.ru 8 915 375 52 03

We are looking forward to seeing you.

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