

Christoph Plass



Dr. Plass studied Biology in Berlin, obtained his PhD at the Medical University Lübeck and performed his postdoctoral training in Molecular Biology at the Roswell Park Cancer Institute in Buffalo, NY. For 10 years he was Professor at the Ohio State University in Columbus and joined the DKFZ in 2007 where he is heading the Division of Epigenomics and Cancer Riskfactors.

Current Research

Our Division is interested in the molecular mechanisms underlying the initiation and progression of malignant cell growth. In particular we are focusing our attention on the contribution of epigenetic alterations in this process and determine how epigenetic and genetic alterations cooperate during tumorigenesis. A challenge here will be to understand how environmental stimuli will be processed by the 'Epi-Genome' and processed to the onset and severity of malignancies, as well as treatment response and treatment outcome.

Major research directions include:

Evaluation of genome-wide epigenetic patterns in tumor genomes

Identification of novel cancer genes and pathways targeted by epigenetic alterations

Determining the role of epigenetics in cancer risk and progression

Evaluate the role of epigenetics in the regulation of DNA repair

In our studies we are utilizing current state-of-the-art high throughput epigenomic assays (e.g. Methylation arrays, Next generation sequencing and MassARRAY) on either clinical samples, cell culture models or in mouse tumor models.

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Future Projects and Goals

Development and implementation of genome-wide assay to measure epigenetic alterations.

Characterization of epigenetically regulated genes in chronic lymphocytic leukemia.

Characterization of death associated protein kinase 1 (DAPK1) in B-cells.

Use of mouse models to study epigenetic gene regulation.

Characterization of TCF21 as a novel tumor suppressor gene on chromosome 6q23 in head and neck and lung cancer.

Epigenetic regulation of miRNA genes in cancer genomes.

Selected Publications

Yu L, Liu C, Vandeusen J, Becknell B, Dai Z, Wu Y, Raval A, Liu T, Ding W, Mao C, Liu S, Smith LT, Lee S, Rassenti L, Marcucci G, Byrd J, Caligiuri MA and **Plass C**. Global assessment of promoter methylation in a murine model of cancer identifies *ID4* as a putative novel tumor suppressor gene in human leukemia. **Nat Genet**, 37:265-274, 2005.

Brena RM, Morrison C, Liyanarachchi S, Jarjoura D, Davuluri RV, Otterson GA, Reisman D, Glaros S, Rush LJ, **Plass, C**. Aberrant DNA Methylation of OLIG1, a Novel Prognostic Factor in Non-Small Cell Lung Cancer. **PLoS Med.**, 4, e108, 2007.

Raval A, Tanner S, Byrd J, Angerman E, Perko J, Chen S-S, Grever M, Lucas D, Matkovic J, Lin T, Kipps T, Murry F, Weisenburger D, Sanger W, Lynch J, Watson P, Jansen M, Yoshinaga Y, Rosenquist R, de Jong P, Coggill P, Beck S, Lynch H, de la Chapelle A, **Plass C**. Down-regulation of death associated protein kinase 1 (DAPK1) in chronic lymphocytic leukemia. **Cell**, 129:879-890, 2007.