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Active Projects:
Major aim of our work is the rational design of targeted combination therapies for GI cancer. The projects exploring the systems biology of cancer and have a strongly translational angle. We utilize cutting edge technologies and collaborate with leading scientists to design novel cancer therapies based on an in-depth understanding of cancer signal transduction networks. There are currently two main research tracks:

- Analysis and prediction of pathway responses to targeted inhibition of the EGF-receptor pathway in esophageal and breast cancer. Computer models of signaling networks are being developed and the anti-tumor efficacy of inhibition of critical molecules within these networks is being explored.
- Regulation and function of the human coxsackie-adenovirus receptor CAR. We discovered novel mechanisms of regulation of CAR, which is mission-critical for the success of adenovirus-based cancer treatments. We are investigating the possibility of pharmacological receptor restoration on cancer cells in order to increase the therapeutic efficacy of these viral agents.

Techniques in Use:
Cancer Cell culturing, recombinant DNA technology, PCR, FISH, RNA-expression analysis including Northern-blotting, RT-PCR, TaqMan-PCR, luciferase promoter reporter assays, Affymetrix expression arrays, Western-blotting including co-immunoprecipitation, FACS, immune-fluorescense, confocal microscopy, immunohistochemistry , reverse-phase protein arrays, Cellomics high content image analysis, siRNA and shRNA mediated gene knock-down, controlled virus infection, CPE- and plaque assays.

Education

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Training

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Certification

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Memberships and Affiliations

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Selected Publications

- Korn WM, Macal M, Christian C, Lacher MD, McMillan A, Rauen KA, Warren RS, Ferrell L. Expression of the coxsackievirus- and adenovirus receptor in gastrointestinal cancer correlates with tumor differentiation. Cancer Gene Ther. 2006 Aug;13(8):792-76
- Au T, Thorne S, Korn WM, Sze D, Kirn D, Reid TR. Minimal hepatic toxicity of Onyx-015: spatial restriction of coxsackie-adenoviral receptor in normal liver. Cancer Gene Ther. 2007 Feb;14(2):139-50.
- Ajani JA, Barthel JS, Bekaii-Saab T, Bentrem DJ, D'Amico TA, Das P, Denlinger C, Fuchs CS, Gerdes H, Hayman JA, Hazard L, Hofstetter WL, Ilson DH, Keswani RN, Kleinberg LR, Korn M, Meredith K, Mulcahy MF, Orringer MB, Osarogiagbon RU, Posey JA, Sasson AR, Scott WJ, Shibata S, Strong VE, Washington MK, Willett C, Wood DE, Wright CD, Yang G; NCCN Gastric Cancer Panel. Gastric cancer. J Natl Compr Canc Netw. 2010 Apr;8(4):378-409