

## **Michael Korn, M.D.**

Associate Professor of Medicine

### *Academic Office and Clinic:*

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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-fluorescence, 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.