August, 9th, 2018

PhD-Position:

Modulation of FOXO3 activity by small compounds in 3D-bioprinted cancer tissue models

FOXO transcription factors are central homeostasis regulators that control cell death, cell cycle progression, drug resistance and longevity in mammalian cells. In cancer cells under certain environmental or genetic conditions these transcription factors induce drug resistance and tumor cell survival in vitro and in vivo. The present project investigates the potential of previously identified small compounds to modulate FOXO transcriptional activity and to interfere with FOXO-induced cancer cell survival. A main goal of the PhD thesis is the development of cancer tissue models to study compound effects on cancer growth and tumor angiogenesis *in vitro*. This will be achieved by additive 3D bioprinting using high-end 3D bioprinters (3DDiscovery Biosafety System, Inkredible+).

Methods:

Molecular/cell biology techniques: design of retroviral vectors for regulated gene expression and knock down (shRNA) / knock-out (Crisp/Cas9), 2D and 3D cell culture, qPCR/immunoblot, immunoprecipitation, recombinant protein expression and purification, flow cytometry, live cell fluorescence imaging, 3D bioprinting.

References:

Rupp, M, Oncogene 2017, 36(44):6190-6203, Hagenbuchner J, Oncogene 2016, 35(16):2052-61, Hagenbuchner u Ausserlechner, Biochem Pharmacol. 2016 107:1-13, Hagenbuchner, Oncotarget 2016, 7(47):77591-77606,

Salary: According to the rates of the Austrian Science Fund (FWF) for PhD students.

Applications to:

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Application deadline: September 30th, 2018