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Effect of dietary deketene curcumin on melanoma growth in mice

Melanoma is the most aggressive form of skin cancer with more than 40,000 deaths per year worldwide [1]. Since curing malignant melanoma remains difficult, dietary supplementation with active plant compounds such as curcumin is promising.

Recently we showed that dietary curcumin reduces melanoma growth in mice and modulates the tumoral microRNA network with microRNA-205 most prominently [2]. MicroRNAs regulate most cellular processes and are found disordered in tumors [3]. MicroRNA-205 in special is known to counteract metastatic changes in tumors [4]. In an additional project we detected a derivative, named deketene curcumin (DKC), which is more toxic on tumor cells, to be formed by cooking curcumin [5].

In our topical project, we want to test the effects of a DKC diet on melanoma in a special mouse model, which allows repetitive analyses of tumor growth. We will collect further samples to investigate if DKC also counteracts metastatic changes in tumor cells. Moreover, we will do experiments with human cells to explore the potential of DKC in human tumors.

It is planned to perform parts of this project during a post-doctoral training at the *Department of Molecular Oncology* of the *British Columbia Cancer Agency Vancouver* which belongs to the world's top institutions in basic and clinical research in oncology.

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3. Esquela-Kerscher, A., et al., Nat Rev Cancer, 2006. **6**(4): p. 259-269.
4. Noguchi, S., et al., Mol Ther, 2013. **21**(6): p. 1204-1211.
5. Dahmke, I.N., et al., Food Chem, 2014. **151**: p. 514-519.