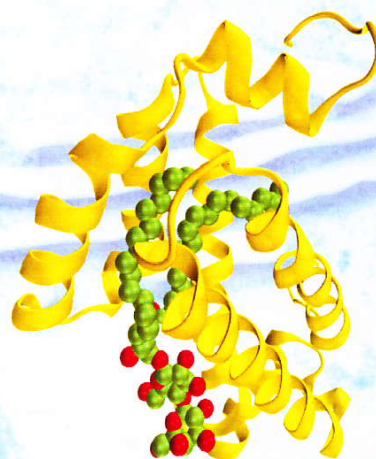


Mate' Kiss



Lipid signalling and cancer

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Programme and Abstracts



EXAMINATION OF THE POTENTIAL REGULATORY ROLE OF MACROPHAGE-EXPRESSED PPAR γ IN B16 MELANOMA CELL-DERIVED PRIMARY AND METASTATIC TUMOR DEVELOPMENT

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Tumor development and progression may be either limited or promoted by tumorinfiltrating immune cells, including macrophages. Tumor-associated macrophages (TAMs) are polarized towards an M2-type or alternatively activated macrophage phenotype. TAMs are able to enhance tumor angiogenesis, inhibit anti-tumor immune response and facilitate metastasis formation. Peroxisome proliferator-activated receptor gamma (PPAR γ), a member of ligand activated nuclear receptor family, is a potent lipid sensor, which plays a key role in adipocyte differentiation and metabolism. PPAR γ expression is also induced during alternative macrophage activation, but its function is not completely understood in these cells. Our goal was to examine the expression of PPAR γ and its target genes in TAMs and to determine the role of macrophage-expressed PPAR γ during tumor progression using B16 mouse melanoma cell-based subcutaneous and metastatic tumor models in macrophage PPAR γ -deficient mice.

Our results show, that PPAR γ was expressed both in primary and metastatic tumor-derived TAMs. Interestingly, we did not find significant difference in subcutaneous primary tumor growth between macrophage PPAR γ -deficient and control mice. In contrast, the number of lung metastases was significantly increased in the absence of macrophage PPAR γ compared to the control animals.

Our results raise the potential role of lipid microenvironment in the regulation of tumor metastasis formation in a macrophage-expressed PPAR γ -dependent manner.