CZ.1.07/2.3.00/20.0148 NANOLABSYS
Mezinárodní spolupráce v oblasti „*in vivo*“ zobrazovacích technik
Laboratoř Metalomiky a Nanotechnologií

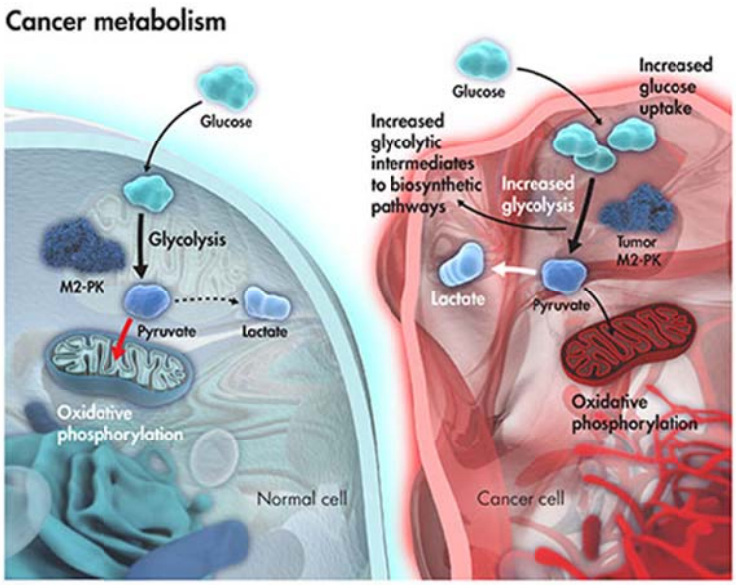
Vás zve na seminář:

BIOCHEMICKÉ SOUVISLOSTI V ZOBRAZOVÁNÍ PET

Prof. Ing. René Kizek, Ph.D.

Abstrakt

In oncology, the Warburg effect is the observation that most cancer cells predominantly produce energy by a high rate of glycolysis followed by lactic acid fermentation in the cytosol, rather than by a comparatively low rate of glycolysis followed by oxidation of pyruvate in mitochondria as in most normal cells. The latter process is aerobic (uses oxygen). Malignant, rapidly growing tumor cells typically have glycolytic rates up to 200 times higher than those of their normal tissues of origin; this occurs even if oxygen is plentiful. Otto Warburg postulated this change in metabolism is the fundamental cause of cancer, a claim now known as the Warburg hypothesis. Today, mutations in oncogenes and tumor suppressor genes are known to be responsible for malignant transformation, and the Warburg effect is considered to be a result of these mutations rather than a cause. The Warburg effect has important medical applications as high aerobic glycolysis by malignant tumors is used clinically to diagnose and monitor treatment responses of cancers by imaging uptake of 2-^{18}F-2-deoxyglucose (FDG) (a radioactive modified hexokinase substrate) with positron emission tomography (PET).



pátek 15. 11. 2013, od 10:00 h

Ústav chemie a biochemie, Laboratoř metalomiky a nanotechnologií

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