2-Deoxy-D-glucose

- Notoginsenoside R1, a Novel Natural PPARγ Agonist, Attenuates Cognitive Deficits in a Mouse Model of Diabetic Alzheimer's Disease Through Enhancing GLUT4-Dependent Neuronal Glucose Uptake
- Uncrossed Cerebellar Diaschisis in Hemimegalencephaly: Evaluated by FDG-PET and Diffusion Tensor Tractography
- 18F-FDG PET/CT guided salvage radiotherapy strategies for lymph-nodal relapses in gynecological cancers: SBRT vs ENRT
- Quantitative Cortex-Based Mapping With Hybrid ¹⁸F-FDG-PET/MR Images in MRI-Negative Epilepsy
- Comparison of the Correlation Between Cerebral [¹⁸F]FDG Metabolism as Assessed by Two Asymmetry Indices and Clinical Neurological Score in Patients with Ischemic Cerebrovascular Disease
- Visualizing epileptogenic regions using the chemical exchange saturation transfer method in a patient with drug-resistant focal epilepsy: a case report
- Association between metabolic patterns in 18-FDG PET-CT scan and postsurgical seizure outcomes in patients with temporal lobe epilepsy
- The intraoperative SEEG and ¹⁸FDG-PET tailored temporal lobe resection (iSP-TR) for the tissue-spearing surgical treatment of drug-resistant mesial temporal lobe epilepsy: how we do it

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2-Deoxy-D-glucose is a glucose molecule which has the 2-hydroxyl group replaced by hydrogen, so that it cannot undergo further glycolysis. As such; it acts to competitively inhibit the production of glucose-6-phosphate from glucose at the phosphoglucoisomerase level (step 2 of glycolysis).

In most cells, glucose hexokinase phosphorylates 2-deoxyglucose, trapping the product 2-deoxyglucose-6-phosphate intracellularly (with exception of liver and kidney); thus, labelled forms of 2-Deoxy-D-glucose serve as a good marker for tissue glucose uptake and hexokinase activity. Many cancers have elevated glucose uptake and hexokinase levels. 2-Deoxyglucose labeled with tritium or carbon-14 has been a popular ligand for laboratory research in animal models, where distribution is assessed by tissue-slicing followed by autoradiography, sometimes in tandem with either conventional or electron microscopy.

see 18F-fluorodeoxyglucose