# Unraveling Preferences and Applications of Fructose Transporters

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**Time: 3:00 pm**

**Abstract:**

Facilitative glucose transporters play a significant role in supplying cells with carbohydrates. The 14 members of the GLUT family have differential expression in the body that alters upon the development of metabolic disorders, including cancer. While the apparent link with diseases highlights GLUTs as important biomedical targets, the advances in using GLUTs for disease diagnosis or therapy are limited. The limitation arises from the challenges associated with specific targeting of individual disease-relevant GLUTs. Our research team has undertaken a challenge to enable specific targeting of GLUT5 – a transporter linked with various types of cancer and absent in the corresponding normal tissues. Through developing GLUT5-specific molecular probes, we aim to understand better the factors that govern substrate selection by various GLUTs and apply this knowledge to developing agents that could be used for cancer diagnosis or work as sugar uptake inhibitors for cancer therapy. In this presentation, our endeavors and successes towards designing transporter-specific probes and their potential applications as biochemical and biomedical tools will be discussed.

**Biography:**

Dr. Tanasova received her Ph.D. degree in chemistry, with an emphasis on Organic Chemistry and Spectroscopy, from Michigan State University in 2009 under the supervision of Prof. Babak Borhan. She then moved to the Department of Medicinal Chemistry at the University of Minnesota for postdoctoral training with Prof. Shana Sturla and worked on developing DNA repair inhibitors to potentiate the effect of DNA-targeting chemotherapeutics in breast cancer, sponsored by Suzan G. Komen Postdoctoral Fellowship. Shortly, she moved to the Swiss Federal Institute of Technology to continue her postdoc with Dr. Sturla, where she continued her research in breast cancer and expanded her expertise towards Chemical Biology through working on evaluating impacts of DNA alkylation on DNA transcription and replication. Dr. Tanasova currently holds the Assistant Professor position at the Chemistry Department of Michigan Technological University. Her research group focuses on the development of GLUT-specific molecular probes and new bioactive compounds.