
Preface

Glucose is one of the main energy sources for living organisms, and undoubtedly one of the most important compounds to life. In our body, glucose is the preferred energy resource for most cells. Mechanisms have consequently evolved to regulate its levels in the body. The first and limiting step in glucose metabolism is its transport across the plasma membrane. In eukaryotic cells, this transport is mediated by members of the GLUT protein family that are encoded by the *SLC2A* genes. They belong to the major facilitator superfamily that counts more than 5000 identified members to date. Humans have 14 different GLUT proteins, GLUT1–14, and they are expressed in virtually every cell type of the human body. Their central role in human physiology is reflected by their direct implications in disease, which also make them applicable drug targets. In particular, GLUTs have attracted attention as drug targets in cancer therapy, since the Warburg effect describes how most cancer cells exhibit high glucose consumption. The purpose of *Glucose Transport* is to combine protocols that encompass methods that can be used to scrutinize the structure-function relationship of GLUTs both in vitro and ex vivo. This collection of laboratory protocols will enable you as a researcher to determine the specific roles of the different GLUTs in various organisms.

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Glucose Transport

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