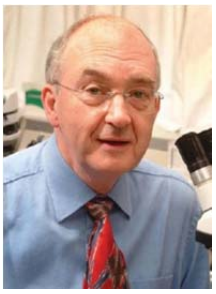
OPS2011 Plenary Lecture



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Sodium–glucose cotransporters (SGLTs) as new drug targets for diabetes

Clinical interest in sodium–glucose cotransporters has intensified with the recent development of new oral inhibitors of the renal isoform, hSGLT2, for the treatment of type 2 diabetes. These drugs have the potential for widespread use in the diabetes epidemic, but how they work at the molecular level is poorly understood. In this presentation I will first review recent advances on the physiology, pharmacology, and molecular genetics of SGLTs, and then provide a rationale for the use of SGLT inhibitors to control blood glucose levels in diabetic patients. Next, I will review our recent work on the interaction of SGLT inhibitors with SGLT1 and 2, and summarize the published data on the Phase III clinical trials on one inhibitor, dapagliflozin. Finally, I will outline the major unresolved questions about the use of SGLT2 inhibitors and summarize our ongoing efforts to answer these questions.