Title: Glycopeptide and Classical Drug Design

Invention: This invention relates to the glycosylation drug candidates to increase penetration, bioavailability, and stability.

Background: Transmembrane proteins provide a pathway for drugs to interact with a cell’s interior. Drugs commonly target G-protein coupled receptors (GPCRs), comprising 40% of the market. Peptides and small molecule drugs directed toward GPCRs inside and outside of the central nervous system (CNS) can treat pain, Parkinson's disease, multiple sclerosis (MS), and other conditions. Carbohydrates improve drug bioavailability and stability to make treatment more effective for a given dose and remain effective during storage. Glycosylation allows for improved penetration of the blood-brain barrier (BBB) and access to the CNS. Glycosylated drugs are being developed for a variety of CNS conditions.

Applications:
• Treatment for conditions affecting the central nervous system

Advantages:
• Broadly targets GPCRs, involved in many biological processes
• Improved BBB penetration allows enhanced access to CNS and treatment of associated conditions
• Increased bioavailability reduces unnecessary dosage and increases application confidence
• Enhanced stability minimizes degradation due to transport, storage

Licensing Manager:
Tod McCauley
TodM@tla.arizona.edu
(520) 626-7916
Inventors

Christopher Apostol
Graduate Student, Chemistry & Biochemistry

Robin Polt
Professor, Chemistry & Biochemistry