

Public Abstract

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Title:Toward Selective Inactivation of Protein Tyrosine Phosphatase 1B via Exo-Affinity Labeling Agents

Exo-affinity labeling agents are compounds that achieve selectivity by modifying non-catalytic residues in a protein. They have been utilized as tools in molecular biology and to make successful drugs for protein targets. Protein tyrosine phosphatase 1B (PTP1B) is a validated drug target for type II diabetes, obesity and cancer. However, no compounds have been FDA approved for PTP1B due to selectivity and bioavailability issues with traditional compounds. We propose that exo-affinity labeling agents can be used to achieve selectivity in PTP1B. In this work we have designed, synthesized, and characterized the first exo-affinity for PTP1B. Using this work we can design better exo-affinity labeling agents that can be selective for PTP1B. This may have implications on drug design and general knowledge of protein signaling pathways.