

Noncompetitive Inhibition of MtFBA by 8-Hydroxyquinoline-2-Carboxylic Acid and Derivatives for TB Therapeutics

Scott D. Pegan, Kateri Ahrendt, Glenn C. Capodagli

Summary: Antibiotic to treat tuberculosis by noncompetitive inhibition of Class II FBA's

Description: With a rise in new cases of active TB and the emergence of the multi-drug resistant strains MDR-TB and XDR-TB, there is a strong need for antibiotics targeting novel pharmacological targets within Mycobacterium tuberculosis. The use of 8-hydroxyquinoline-2-carboxylic acid as an inhibitor against M. tuberculosis class II 1,6-biphosphate aldolase (MtFBA) was found to be a novel and effective alternative to existing antibiotic options. Previous class II FBA inhibitors either lacked specificity or drug-like properties to be considered for further drug development. The MtFBA inhibitory and chemical attributes of 8-hydroxyquinoline-2-carboxylic acid and potential derivatives overcome both of these challenges.

Advantages of this Invention:

- Inhibits MtFBA by altering active site (noncompetitive)
- Draws binding energy from hydrophobic interactions
- Generates openings at active site for additional chemical groups

Potential Areas of Application:

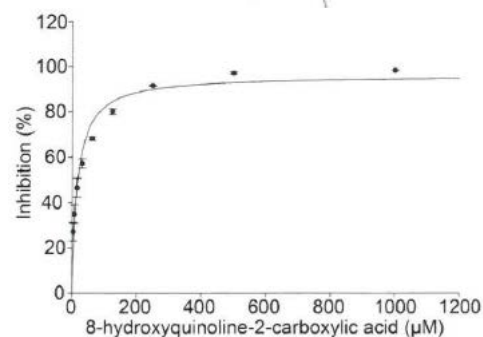
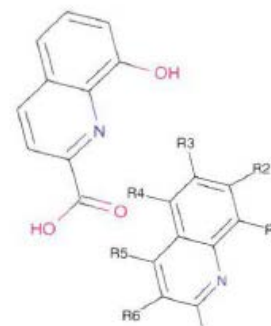
- Medical: treatment of tuberculosis, with high potential for broad-spectrum use against other pathogenic bacteria

Stage of Development: Testing completed; patent application filed May 2014

DU Log Number: #231

Intellectual Property Status: U.S. Patent #9,394,254

Opportunity: We are seeking an investor or strategic partner to license this invention.



For more information contact:

Alexandra Hall, Intellectual Property Manager, Office of Technology Transfer
Mary Reed Building, 222 | 2199 S. University Blvd. | Denver, CO 80208 | 303-871-4230 | du.edu