



Menaquinone Synthesis Inhibitors Against MDR-TB and Other Pathogenic Bacteria

In the fight against tuberculosis and other diseases caused by Gram-positive bacteria, new strategies are needed to address the multi-drug resistance increasingly displayed by these pathogens. Our technology successfully implements an innovative strategy which targets the electron transport chain of Gram-positive bacteria by inhibiting the synthesis of menaquinone, a compound essential to the electron transport process and the survival of these organisms. Importantly, this treatment is selective to Gram-positive bacteria and will not adversely affect the patient as humans do not utilize menaquinone. This technique has been shown to inhibit the growth of such pathogens as multidrug-resistant *Mycobacterium tuberculosis* (responsible for TB), methicillin-resistant *Staphylococcus aureus* (MRSA) and *Staphylococcus epidermidis* (MRSE).

This new strategy employs novel derivatives of aminoxyloxydiphenylmethanone and aminoxyloxydiphenylmethanol. The most promising compounds display low minimum inhibitory concentrations and are cost-effective to produce. In addition, structural modification of these compounds may be accomplished in a time-effective manner, a trait which should lead to rapid optimization of the system.

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Patent Information
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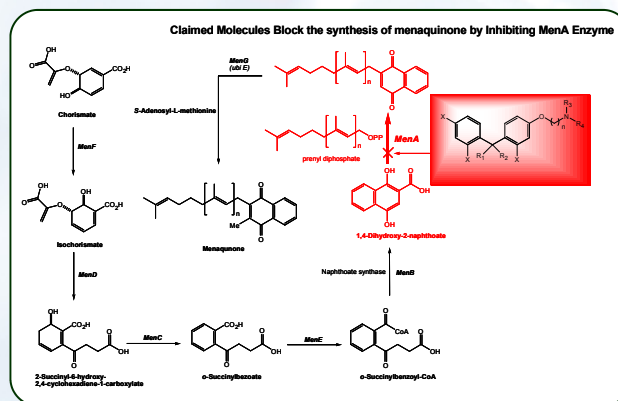
Related Technologies
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Publications
Environ Pollution, 2006
Nov;144(1):70-6. Epub 2006
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Anal Chem, 2007 Feb 1;79
(3):846-53.

Features and Benefits

- Effective antituberculosis agent
- Human electron transport chain does not involve Menaquinone A
- Potentially effective against other pathogens such as *Staphylococcus*
- Simple synthesis



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