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Synthetic Mimics of Malonyl-CoA as Fatty Acid Synthase Inhibitors

Synthesized, modifiable inhibitors targeting fatty acid synthases offer a platform for treating drug-resistant bacteria, cancer, and obesity-related diseases.

Fatty acids are essential components of overall cellular metabolism. Malonyl-CoA is a coenzyme known to play a key role in the synthesis of fatty acids. Inhibition of malonyl-CoA results in defects in the biosynthesis of fatty acid. Development of such specialized inhibitors have applications in medicine. Therefore, there is a need, especially in medicine, for specialized inhibitors.

Researchers at Purdue University, with various manipulations of malonyl-CoA, developed synthesized molecules that inhibit enzymes related to fatty acid synthases. These inhibitions may be the solution to treating bacterial infections, cancer, and obesity related diseases. These inhibitors are unique in that they can be modified to inhibit fatty acid metabolism in a specific organism.

Advantages:

-One inhibitor has the potential to treat bacterial infections, cancer, and obesity related diseases

-Custom modification for single organisms

Potential Applications:

-Treating drug-resistant bacteria

-Cancer treatment

-Treating obesity related disease

TRL: 3

Intellectual Property:

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