



TECHNOLOGY

Synthesis of Lutein

OVERVIEW

Background

Lutein is a dietary carotenoid present in most fruits and vegetables and has been shown to play an important role in eye health and the prevention of age-related macular degeneration (AMD). These health benefits make it an important dietary supplement. However, currently lutein is commercially produced by extracting it from plants, as chemical synthesis methods have not been feasible on an industrial scale. These methods involve difficult synthesis of precursor molecules and have very low overall yield for lutein. Development of a chemical synthesis method for lutein on an industrial scale may increase lutein consumption and help lower occurrence of AMD, the leading cause of blindness in the United States.

Innovative Technology

Researchers at the University of Maryland have developed a chemical synthesis method for lutein that has greater yields than previous synthesis methods. While existing methods had overall yields of 1-2% for lutein, this new method can produce overall yields >20% and the precursor molecules are readily available and easy to synthesize. Additionally, the new method allows for synthesis of the other stereoisomers of lutein, compounds that currently do not have chemical synthesis methods.

APPLICATIONS

Chemical synthesis of dietary lutein and its stereoisomers

ADVANTAGES

Easily obtained precursors

Greater yields

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Additional Information

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LICENSE STATUS

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CATEGORIES

- Natural Compounds

EXTERNAL RESOURCES

- [US Patent 7,858,828](#)

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