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Innovation Infosheet

Continuous Flow Synthesis of A2E

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- Chemistry and Chemical Analysis
- Pharmaceuticals

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- A2E
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- Lipid bisretinoid
- N-Retinylidene-N-retinylethanolamine

Researchers at Purdue University have developed a set of reaction conditions to optimize production of N-Retinylidene-N-retinylethanolamine (A2E). A2E forms lipid deposits in the retinal pigment epithelium, causing vision impairment and blindness in eye conditions such as Stargardt's disease, cone-rod dystrophy, Best's macular dystrophy, and potentially age-related macular degeneration. Synthetic A2E is often used to simulate vision impairment in vitro, providing insights into the mechanisms of these eye conditions. Purdue researchers have modified the conventional one-pot reaction conditions for production of synthetic A2E to optimize yield. In a continuous flow reactor, the researchers obtained an 87-fold reduction in reaction time, from 48 hours to 33 minutes, with an accompanying yield improvement from 49% to 78%.

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