

A New Cellulose Excipient for the Formation of Drug Delivery Microspheres

A cellulose-based excipient has been developed which is exceptionally adapted to the formation of controlled drug release microspheres.

Technology Primer:

Conventional pharmaceutical products contain several inactive ingredients that aid in delivery and efficacy of the active ingredient(s). The different compounds that serve these individual functions increase the cost and bulk of the given pharmaceutical offering. If these inactive components took on multiple roles, they would lower cost and simplify production of the therapeutic.

Technology Benefit:

MULTI-FUNCTIONAL INACTIVE INGREDIENT. Oxidized cellulose carboxylate alkyl/aryl esters (OCCAE) serve multiple drug delivery functions, including binder, filler and disintegrant. These functions are often performed by multiple components, which increases the expense and complexity of the drug formulation.

BIOCOMPATIBLE & BIODEGRADABLE. The safety profile of cellulose is well-known. It has been commonly used in several medical applications without adverse reaction. In addition, its biodegradation characteristics have allowed it to be utilized in multiple medical applications, from drug delivery to tissue engineering.

CONTROLLED-RELEASE MICROSPHERES. OCCAE is well suited to the formation of microspheres for drug delivery. In this formulation, OCCAE is able to control the release of drug from several hours to several days.

Technology Description:

Researchers at the University of Iowa have discovered a new class of cellulose excipients, oxidized cellulose carboxylate alkyl/aryl esters (OCCAE). This class is an advancement in the area of cellulose technology, which has been a very important compound for numerous medical, surgical and pharmaceutical applications. OCCAE has been implicated as an excellent excipient for the formation of microspheres, which will allow controlled drug release over a time period of several hours to several days. In addition to composition advancements, the researchers have also optimized the synthesis method for creating this class of medically-relevant compounds.

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Complementary Technologies:

09070 - Pure Cellulose Capsules
02013 - Regenerated Cellulose as a Tissue Engineering & Drug Deliv...
00031 - Synthesis of Cellulose for Use as Binder and Disintegrant
00027 - Synthesis of Oxidized Cellulose Esters
00022 - Controlled Oxidation of Cellulose

Category: Life Sciences & Medical

Primary Sub-Category: Drug Delivery

Secondary Sub-Categories:

Pharmaceuticals & Therapeutics
Material
Polymer