

Request Information

Permalink

Engineering *Pasteurella Multocida* Heparosan Synthase 2 (Pmhs2) For Efficient Synthesis Of Heparosan Heparin And Heparan Sulfate Oligosaccharides

Tech ID: 33438 / UC Case 2019-805-0

ABSTRACT

Researchers at the University of California, Davis have developed improved variants of a Heparosan synthase supporting efficient synthesis of heparosan, heparin, and heparan sulfate analogs.

FULL DESCRIPTION

Researchers at the University of California Davis have developed a technology that employs engineered variants of *Pasteurella multocida* heparosan synthase 2 (PmHS2) for efficient synthesis of heparosan, heparin, and heparan sulfate oligosaccharides/polysaccharides and analogs. These variants have enhanced expression levels, improved thermal stability, and reduced reverse glycosylation activity, thereby increasing the synthetic efficiency and overall yields.

APPLICATIONS

- ▶ Biomedical research for understanding the role of heparan sulfate in cellular processes
- ▶ Pharmaceutical industry for the manufacture of anticoagulants such as heparin
- ▶ Development of new therapeutic drugs and interventions

FEATURES/BENEFITS

- ▶ Increased expression levels
- ▶ Improved heat resistance
- ▶ Reduced reverse glycosylation activity
- ▶ Efficient synthesis of heparosan, heparin, and heparan sulfate analogs
- ▶ Addresses challenges in synthesizing heparan sulfate-like oligosaccharides and polysaccharides
- ▶ Solves low synthetic efficiency of existing methods
- ▶ Addresses difficulty of obtaining homogeneous, structurally defined heparan sulfate

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,441,131	09/13/2022	2019-805

CONTACT

Victor Haroldsen
haroldsen@ucdavis.edu
tel: 530-752-7717.



INVENTORS

- ▶ Chen, Xi
- ▶ McArthur, John
- ▶ Na, Lan
- ▶ Yu, Hai

OTHER INFORMATION

KEYWORDS

anticoagulants, enhanced expression, heparan sulfate, heparosan, heparosan synthase 2 (pmhs2), synthetic efficiency, thermal stability, therapeutic drugs, biomedical research

CATEGORIZED AS

- ▶ **Biotechnology**
 - ▶ Health
 - ▶ Other
- ▶ **Materials & Chemicals**
 - ▶ Biological
 - ▶ Chemicals
- ▶ **Medical**
 - ▶ New Chemical Entities, Drug Leads
 - ▶ Research Tools
 - ▶ Therapeutics
- ▶ **Research Tools**
 - ▶ Bioinformatics
 - ▶ Other

RELATED CASES

2019-805-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Purification of Glycosphingosines and Glycosphingolipids
- A Photobacterium Sp. Alpha2-6-Sialytransferase 9Psp2.6St) A366g Mutant With Increased Expression Level And Improved Activity In Sialylating Tn Antigen
- Synthesis of Capsular Polysaccharides
- Legionaminic Acid Glycosyltransferases for Chemoenzymatic Synthesis of Glycans and Glycoconjugates
- Using Escherichia coli to Produce Human Milk Oligosaccharide Lactodifucotetraose
- 4-N-Derivatized Sialic Acids and Related Sialosides
- Substrate And Process Engineering For Biocatalytic Synthesis And Facile Purification Of Human Milk Oligosaccharides (HMOs)
- O-Acetyl Glycosphingosines and Gangliosides, as well as Their N-Acetyl Analogs
- Stable N-acetylated analogs of Sialic Acids and Sialosides
- Alpha1–2-Fucosyltransferase for Enzymatic Synthesis of Alpha1–2-linked Fucosylated Glycans
- One-Pot Multienzyme Synthesis of Sialidase Reagents, Probes and Inhibitors
- Novel Methods For Chemical Synthesis Of Lactosyl Sphingosines, Glucosylsphingosines, Galactosylsphingosines, And 3-O-Sulfogalactosylsphingosines

University of California, Davis
Technology Transfer Office
1850 Research Park Drive, Suite 100, ,
Davis, CA 95618

Tel: 530.754.8649
techtransfer@ucdavis.edu
<https://research.ucdavis.edu/technology-transfer/>
Fax: 530.754.7620

© 2024, The Regents of the University of California
[Terms of use](#)
[Privacy Notice](#)