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Polyketide Synthase Variants And Uses Thereof

Tech ID: 28683 / UC Case 2017-581-0

BRIEF DESCRIPTION

Polyketide synthases are multifunctional enzymes that catalyze the biosynthesis of polyketides. These enzymes make attractive targets because they can be modified to produce commodity chemicals. The invention herein describes methods for producing polyketide synthase variants whose activity and/or substrate specificity can be tailored. An example of a polyketide synthase variant would be 2-pyrone synthase, which produces 2-pyrone. Other modified synthase variants can be generated to produce other key materials including ketides, lactones, etc.

FULL DESCRIPTION

Polyketides are a class of compounds that include antibiotics, immune-suppressants and anticancer agents. Polyketide synthase is a naturally occurring enzyme or engineered enzyme which can be used to prepare commercially useful chemical compounds. Applications of the polyketide synthase variant is applicable in the production of food additives, plasticizers, phytochemicals and phytochemical mixes, etc. Variants of polyketide synthases can have altered capabilities that could expand the enzymatic toolbox for enzyme-based chemical synthesis, and can demonstrate increased enzymatic activity.

Efficient methods for production of polyketide synthase variants are needed. The inventors have developed the following:

- Efficient methods for production of polyketide synthase variants;
- Polyketide synthase variants that have increased activity, stability and solubility;

SUGGESTED USES

» Chemical compound production, gene expression, applications include materials synthesis, antibiotics, immune-suppression, anti-cancer, therapeutic agents, cellulosic ethanol production processes, biofuel enzymes, food enzymes.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,745,674	08/18/2020	2017-581
Patent Cooperation Treaty	Published Application	2015/134807 A1	09/11/2015	2017-581

CONTACT

Alvin Viray
aviray@uci.edu
tel: 949-824-3104.



OTHER INFORMATION

CATEGORIZED AS

- » **Biotechnology**
- » Other
- » **Medical**
- » Disease: Cancer
- » Therapeutics

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2017-581-0

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