Polyisoprenols

Isolated from bacteria, plants and animals. Short chain polyisoprenols are far more prevalent in nature than their longer counterparts

Uses

Various polyisoprenols are used in perfume and pharmacology.

Although synthetic routes have been shown to produce decent yields, metabolic engineering is the preferred route to these compounds.

- Antioxidant activities
- Lowers the propensity for humans to develop prostate cancers
- Precursors of pharmaceuticals for stomach ulcers and vitamins


Isoprene

Biological Pathway

Polyisoprenoid Alcohols

Industrially, most polyisoprenols are isolated from metabolic engineering. Cells have upregulated production of a certain polyisoprenyl diphosphate and are then converted to the target alcohol.

Microorganisms, preferably a yeast cell culture, are genetically modified to increase production of necessary precursors and decrease production of other products.

Isolation can be done through a number of methods: chromatography, extraction, solvent extraction, crystallization, etc.

Cost of production is high for longer chain because of the low occurrence in nature and the difficulties of generating long chains with high stereoregularity.

Overproduction can be deleterious!

Precursers of pharmaceutials for stomach ulcers and vitamins

Sesquiterpenes

Biochemical Pathway

Sesquiterpenes

Various polyisoprenols are used in perfume and pharmacology.

Phytol

Phytol

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids

Autoxidation

Phenol formation

End products

Polyisoprenoids