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Topic – Abietic Acid

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Introduction

- It's also known as abietinic acid or Sylvic acid .
- It's organic compound that occurs widely in trees like ferns conifers and other gymnosperm plants.
- It's primary components of resin acids .
- It's ester Or salt is called an abietate



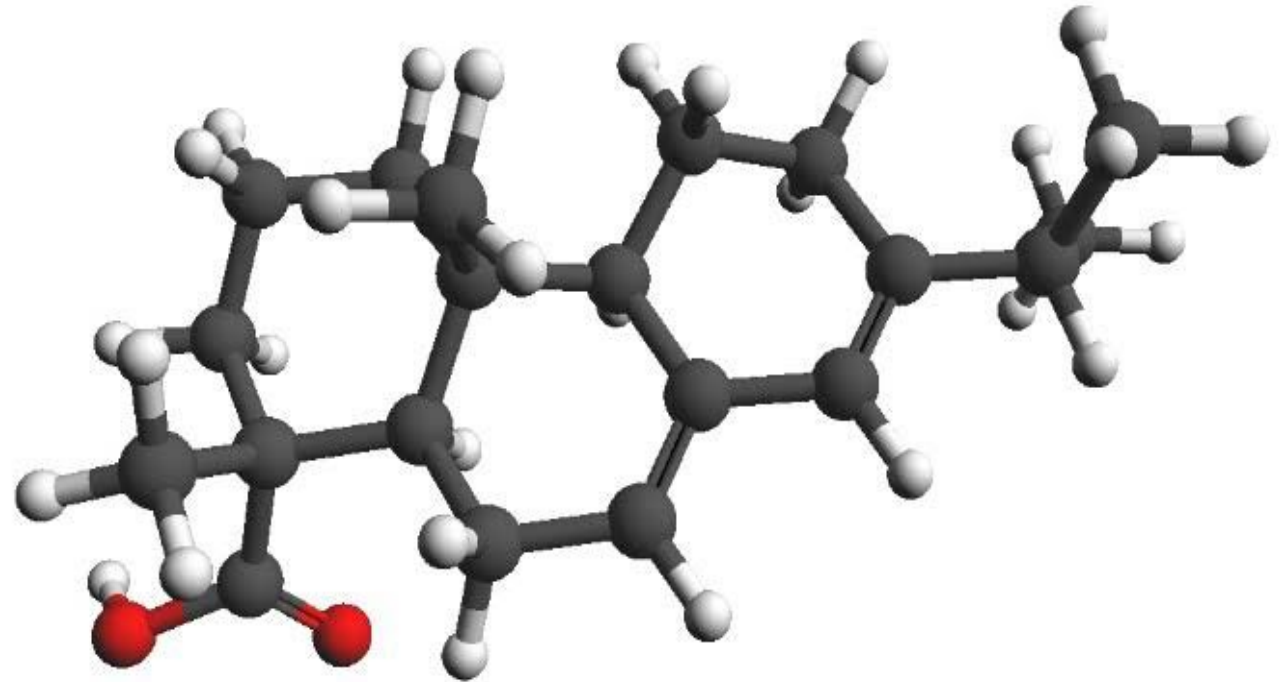
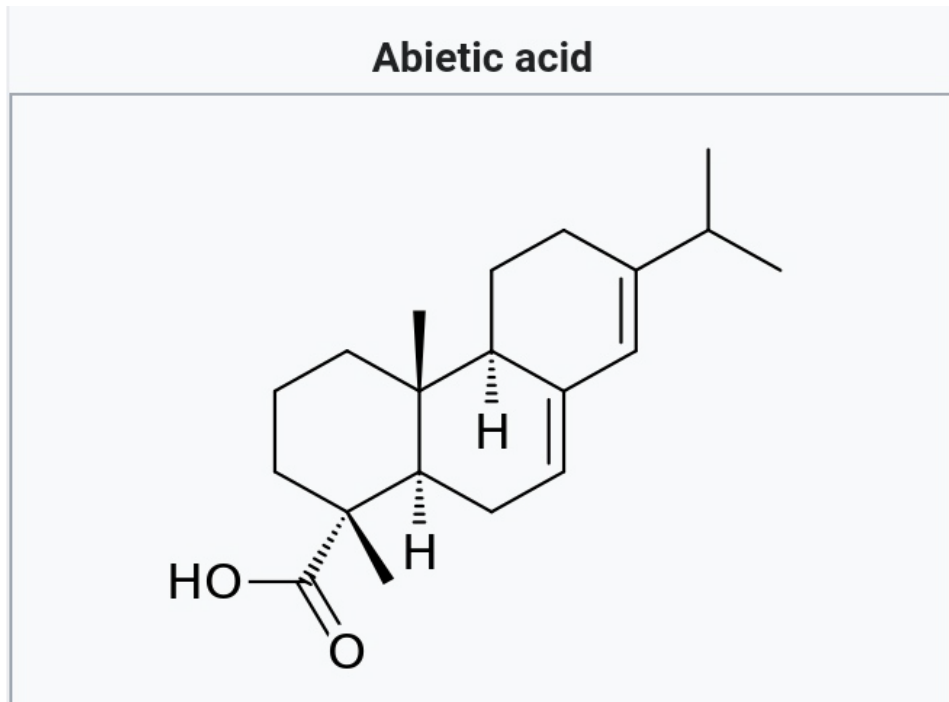
Source

- **Abietic acid** belong to the resin acids of terpenes and wide spread in conifers and such as various pines large tree and firs.
- Incisions cut in bark of pine trees result in the formation and exudation of an oleoresin



Structure of Abietic Acid

- **IUPAC Name** – Abieta-7,13-dien-18-oic acid

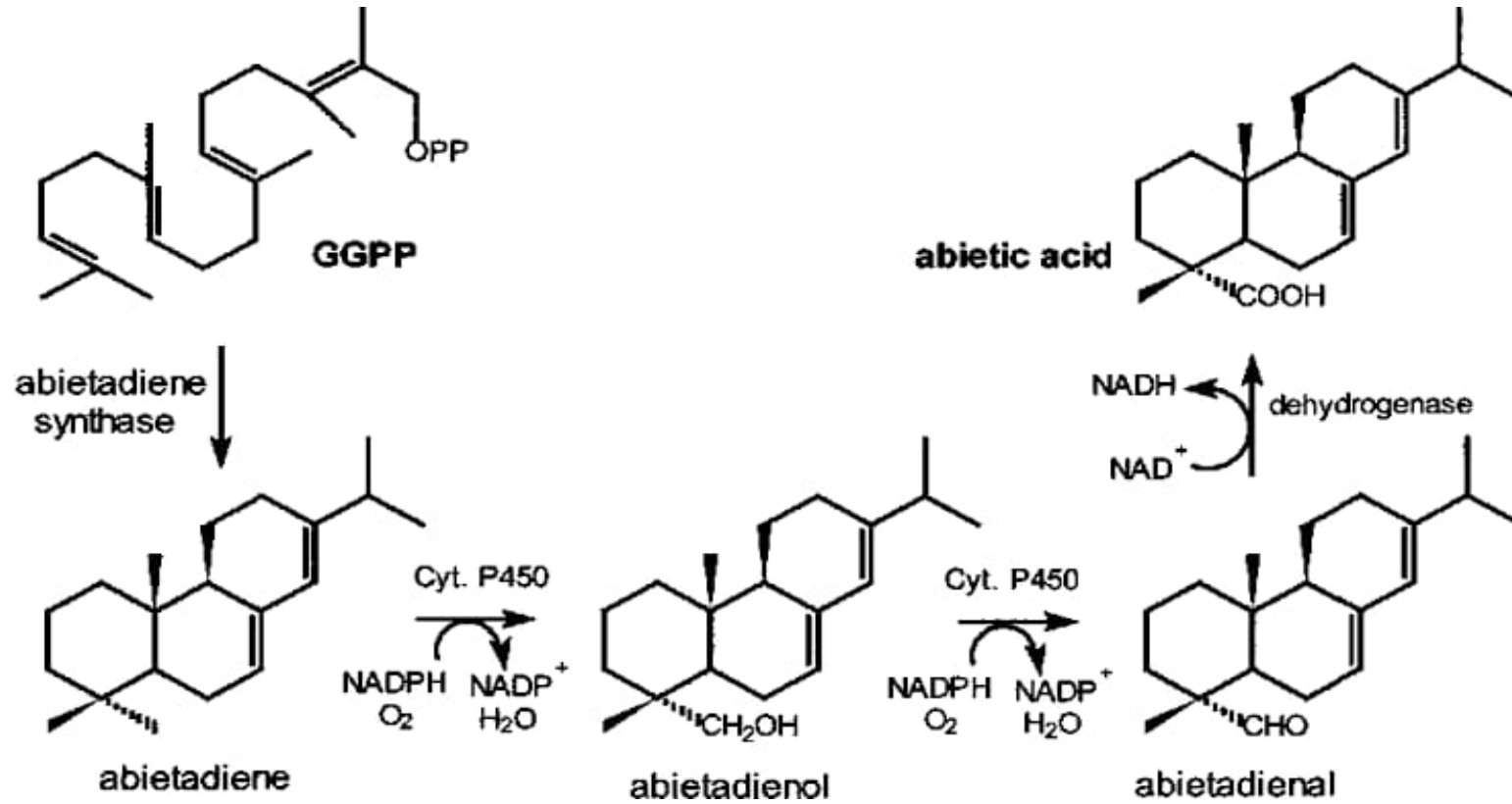


Physical properties

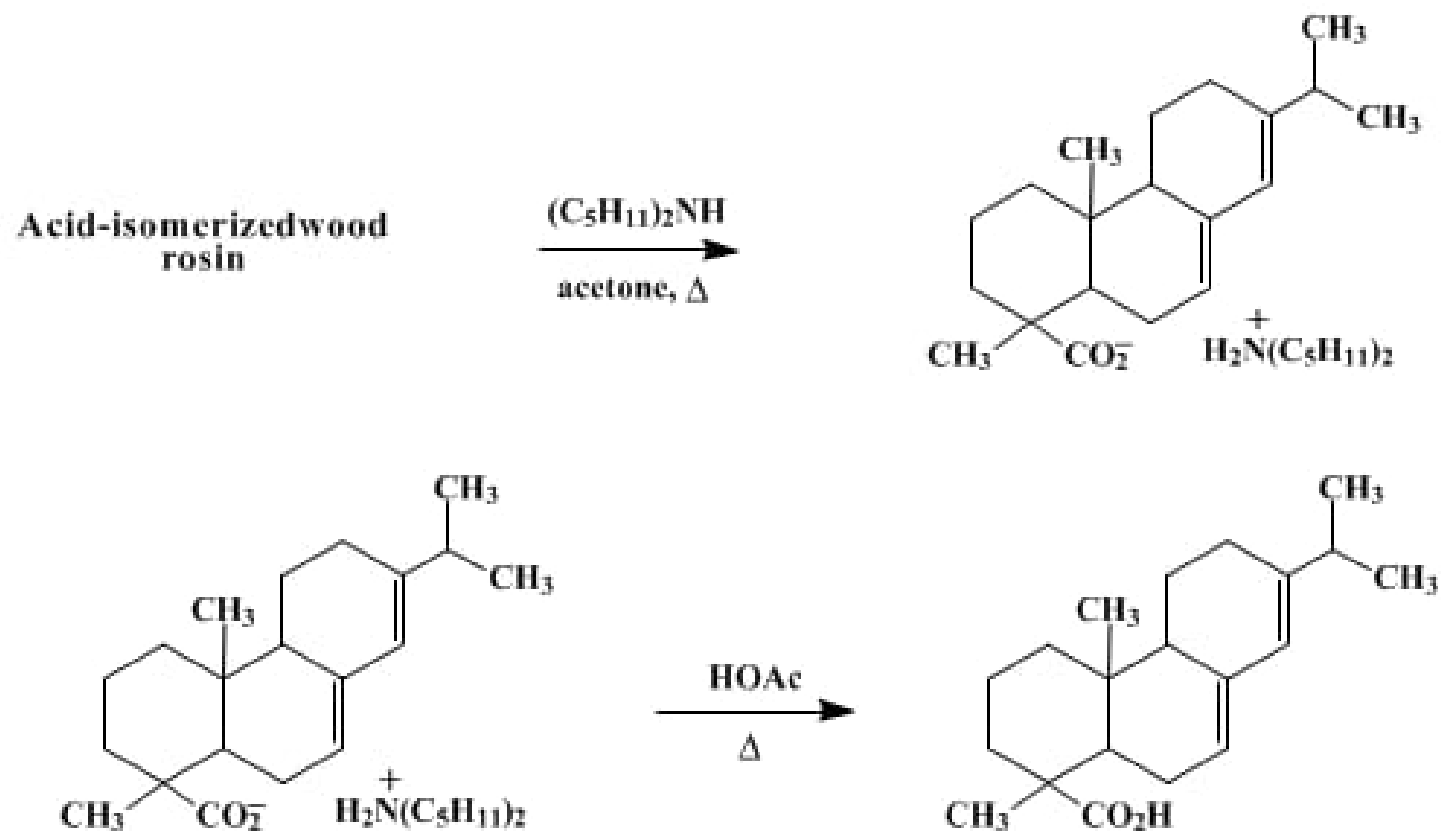


Chemical formula	$C_{20}H_{30}O_2$
Molar mass	$302.458 \text{ g}\cdot\text{mol}^{-1}$
Appearance	Yellow resinous powder, crystals or chunks. Monoclinic plates (from EtOH/water). Colorless solid when pure.
Density	1.06 g/mL
Melting point	$172\text{--}175 \text{ }^\circ\text{C}$ ($342\text{--}347 \text{ }^\circ\text{F}$; $445\text{--}448 \text{ K}$) ^[1]
Solubility in water	Insoluble ^[1]
Solubility in other solvents	Very soluble in acetone, petroleum ether, Et_2O , and ethanol

Bio Synthesis



Laboratory synthesis



In vitro effect

- The 50% ethanol extracts from resin of *Pinus* sp. (Pinaceae) showed inhibitory activity against testosterone 5 α -reductase prepared from rat prostate.
- The fraction responsible for this activity was purified, and the active constituent was isolated and identified as abietic acid which exhibited potent testosterone 5 α -reductase inhibitory activity in vitro.

Uses of Abietic acids

Medicinal uses

- The abietic acid is used for treating cardiovascular and cerebrovascular diseases,
- promoting lipid metabolism,
- keeping alkaline states of human body fluids, and improving human body function

Commercial use

- It is used in organic syntheses.
- It is one of the main ingredients of resin.
- Rosin Acid Ester is used as an ingredient for the preparation of paints and varnish, soaps, and plastics.

THANK YOU