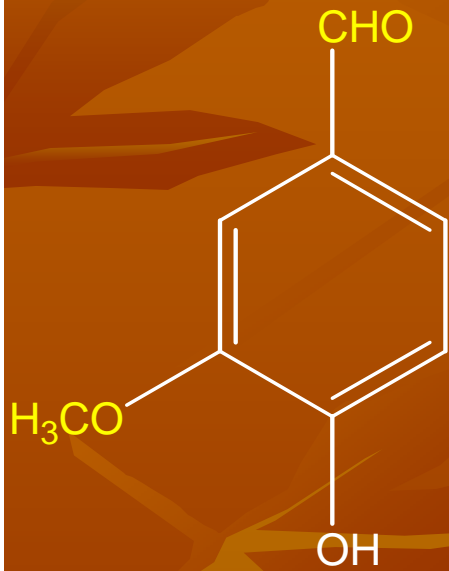


**Vinyl Guaiacol: An Economic And
Ecofriendly Process for A FEMA Approved
Flavouring Agent**

By

Institute of Himalayan Bioresource Technology (CSIR), Palampur

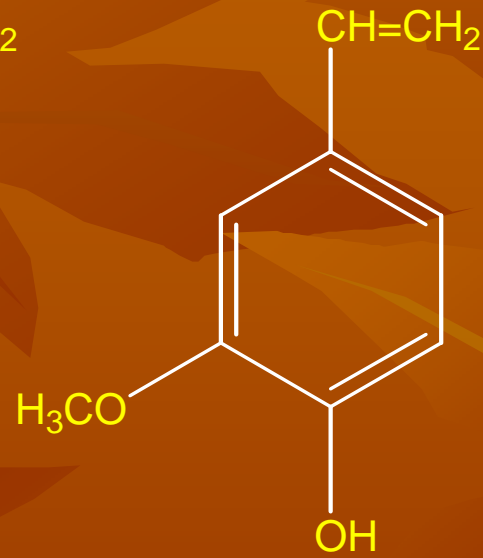
Vinyl Phenols And Related Compounds



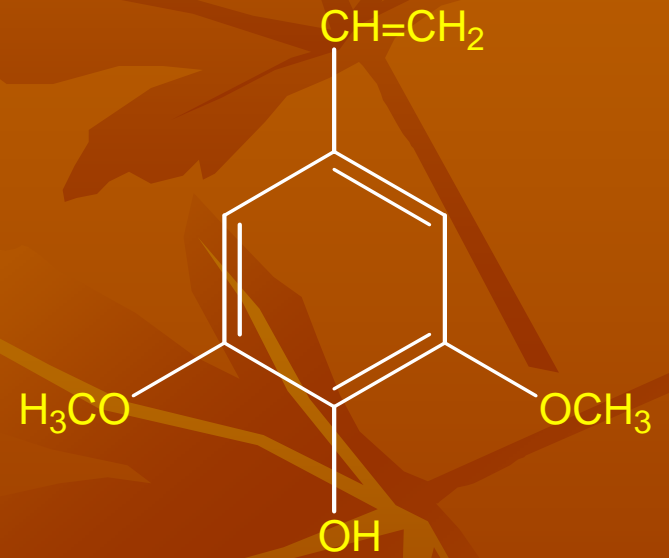
Vanillin



4-Vinylphenol

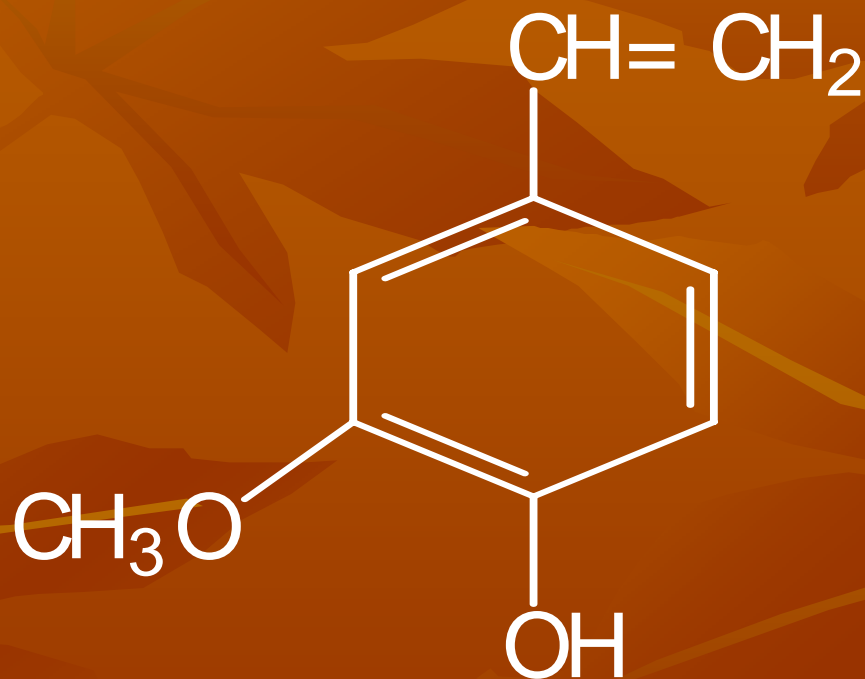


4-Vinylguaiacol



3,5-Dimethoxy-4-vinylphenol

4-VINYLGUAIAICOL



FORMULA: C₉ H₁₀ O₂

CAS No: 7786-61-0

PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE: Solid or liquid (may vary).

COLOUR: Colourless.

ODOUR/TASTE: Spicy. Clove

SOLUBILITY DESCRIPTION: Water Insoluble. Soluble in most of Organic solvents

MOL WEIGHT (AT WT): 150.18

MELTING POINT (°C): 25 - 29

SPECIFIC GRAVITY (Water=1): 1.105-1.115

STABILITY AND REACTIVITY:

STABILITY: No particular stability concerns.

MATERIALS TO AVOID: Strong oxidizing agents. Strong acids. Strong alkalies.

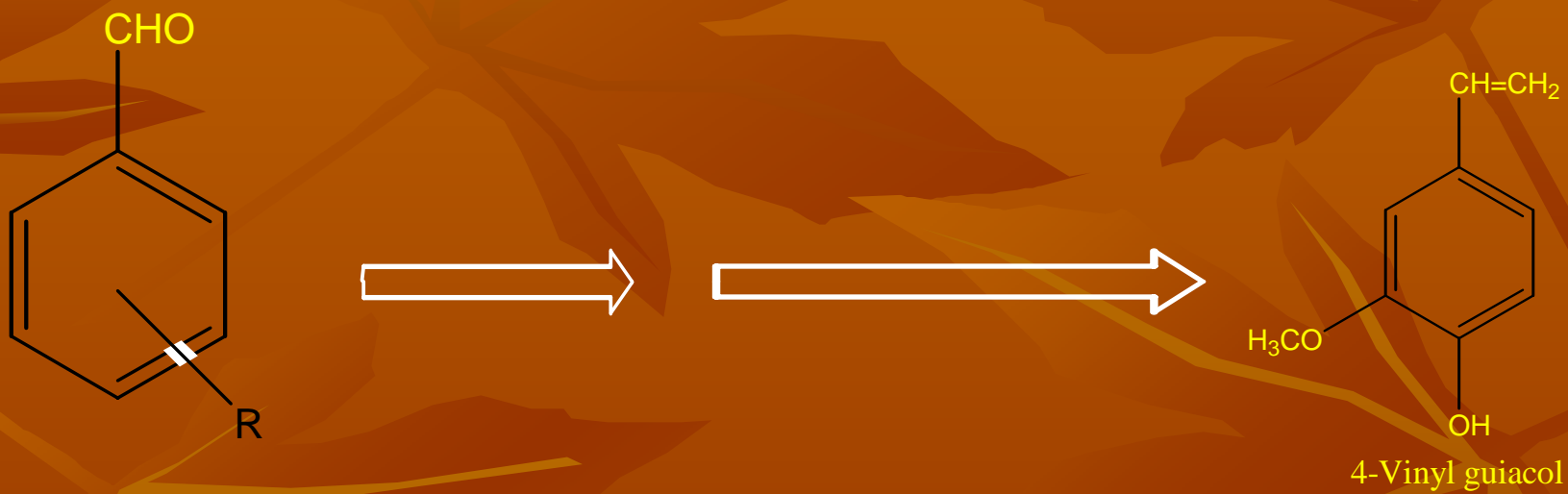
(information quoted from literature)

- 4-Vinylguaiacol also known as *p*-vinylguaiacol or 2-methoxy-4-vinylphenol or 4-hydroxy-3-methoxystyrene or 4-ethenyl-2-methoxyphenol
- Most extensively used in food and alcoholic beverages as flavouring substance.
- FEMA GRAS (Flavour and Extract Manufacturer's Association; Generally Regarded As Safe) No. 2675.

NATURAL SOURCES OF VINYL PHENOLS

- Vinylguaiacol obtained from the pods of *Hibiscus esculentus* (okra) and *Digitaria exilis*
- Found in cooked apple, grapefruit juice (*Citrus paradisi*), feijoa fruit (*Feijoa sellowiana*), *Vitis vinifera*, strawberry fruit, raw asparagus, leaves and stalks of celery, crispbread, white wine, red wine, coffee, partially fermented tea, roasted peanuts (*Arachis hypogea*), raw beans, red sage (*Taxus sage*) etc.
- Similarly, 4-vinylguaiacol is also found as one of the most odour active compounds in roasted white sesame seeds.

Method Developed at IHBT



R= OH, OMe etc.

Patent Filed in PCT & USA (CSIRNF568-2002)