Terpenes and terpenoids are two classes of naturally occurring compounds that are formally derived from isoprene (1).

Carbon 1 is called the head of the molecule; carbon 4 is called the tail. Since the isoprene molecule has five carbon atoms, the number of carbon atoms in the molecule of a terpene/terpenoid is a multiple of five.

The difference between terpenes and terpenoids is that terpenes are hydrocarbons, whereas terpenoids contain oxygen. Organic chemists increasingly use the words terpene and terpenoid interchangeably. When plant matter (leaves, roots, flowers, etc.) is subjected to steam distillation, an oily liquid called essential oil is obtained. An essential oil is a mixture of terpenes and/or terpenoids. eg:

see also monoterpene, sesquiterpene, diterpene, triterpene, isoprene unit, isoprene rule, irregular terpene

Contributors

- Gamini Gunawardena from the OChemPal site (Utah Valley University)