

Properties of stereoisomers

Topic

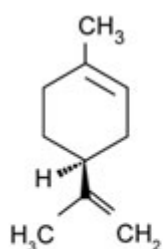
Stereochemistry.

Timing

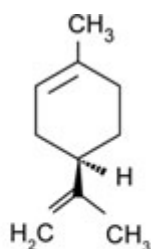
5 min.

Description

In this experiment students detect the differences in smell of each enantiomer absorbed on cotton wool inside small sample bottles. To prepare these place a small quantity of cotton wool into each bottle and then add 10 drops of the stereoisomer. The bottles can then be passed around the classroom.



(*R*) - (+) - Limonene



(*S*) - (-) - Limonene

Apparatus (per group)

- Two plastic bottles
- Cotton wool.

Chemicals (per group)

- (*R*)-(+)-Limonene
- (*S*)-(-)-Limonene.

Extension

Students could obtain small quantities of (*R*)-(+)- limonene in natural fruits by carrying out steam distillation of the peel of citrus fruits such as oranges and lemons and comparing the odours against the standards. However, the *S*-(-) isomer is scarce in citrus fruits: pine needles might be a good source, but the presence of other terpenes might make it hard to separate.

Safety

Students must wear eye protection if carrying out steam distillation. Not needed for sniffing the stereoisomers.



Credits

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Health & safety checked May 2018

Page last updated August 2018

