

Properties of the carvones

Topic

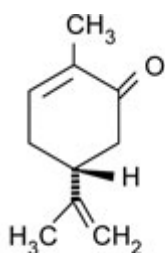
Stereochemistry.

Timing

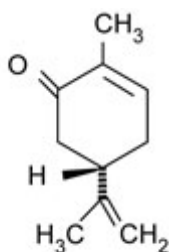
5 min.

Description

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



(*R*) - (-) - Carvone



(*S*) - (+) - Carvone

Chemicals (per group)

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

Extension

Students could obtain small quantities of chewing gum – which contains spearmint – and caraway seeds and compare the smells of these.

Note

Limonene, a terpene occurring in orange and lemon oils, and carvone are structurally very similar. It can be pointed out to students that with the limonene stereoisomers the *R*-enantiomer is dextrorotatory and the *S*-enantiomer is laevorotatory. With the carvones the opposite is true.

Health & Safety

Both enantiomers are skin sensitisers but there is no hazard from smelling the vapours in this manner, so no eye protection is needed.

Credits

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Health & safety checked May 2018

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