Aim:

To determine olfactory detection thresholds in CD-1 mice for “green” odors and to compare these data to those obtained in other species and also to assess structure-detectability relationships.

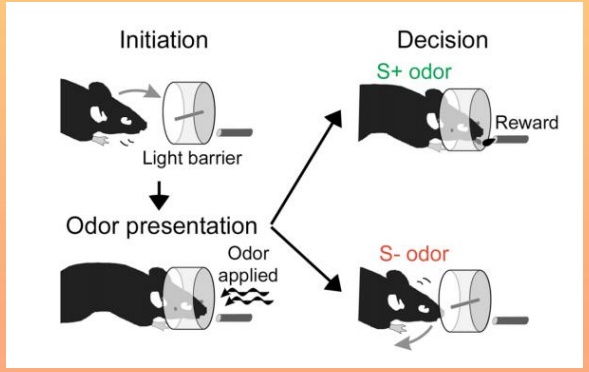

Figure 1. Mouse managing odor port in operant chamber

Method:

Using an automated olfactometer, the olfactory detection thresholds for eight “green” odors were determined in six CD-1 mice.

Results:

Threshold values of the best performed animal reached as low as

» 3ppb (Parts per billion) for 1-hexanol, Cis-3-hexen-1-ol, trans-3-hexen-1-ol and trans-3-hexenal;

» 0.3ppb for trans-2-hexen-1-ol;

» 0.03 ppb for n-hexanal and cis-3-hexenal ;

» 0.003 ppb for trans-2-hexenal.

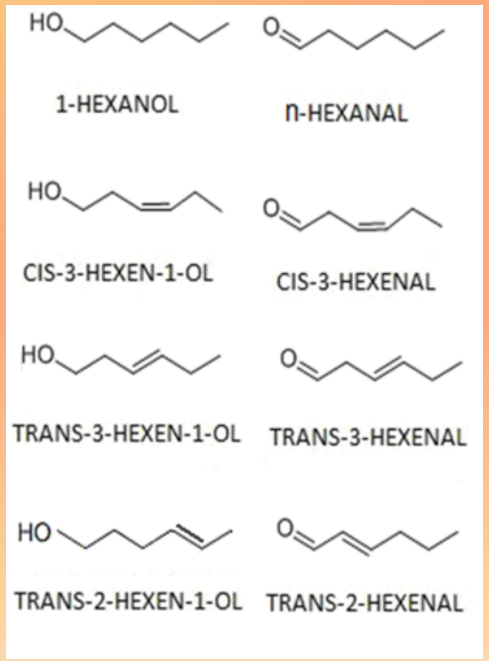

Figure 2: Molecular structure of the odorants used.

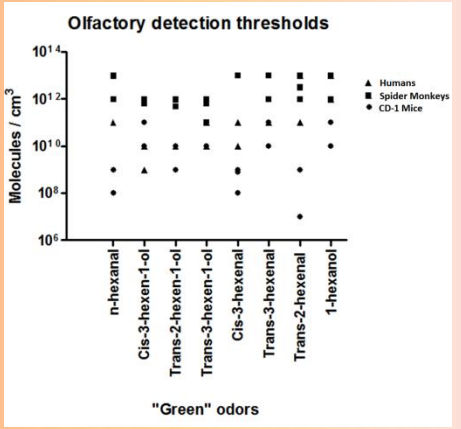

Figure 3 Comparison of olfactory detection threshold values between humans, spider monkeys and CD-1 mice in vapour phase concentration (log ppm).

Discussion:

» CD-1 mice scored significantly lower thresholds for aldehyde “green” odors than the alcohol “green” odors.

» No statistical difference between

-Double bond and Single bond green” odors

-Cis-configuration and trans-configuration “green” odors

Conclusion:

» CD-1 mice have lower detection thresholds for "green" odors compared to human subjects and spider monkeys except for cis-3-hexen-1-ol.

» CD-1 mice are more sensitive towards alcohol "green" odors than the aldehyde "green" odors.

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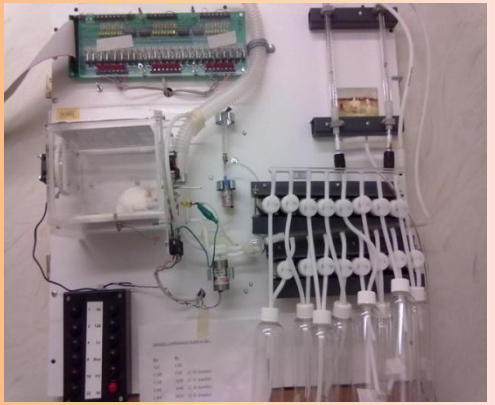
Linköpings universitet

Olfactory sensitivity in CD-1 mice for "green" odors



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