**Supplementary Table 1.** Analysed VOC in animal cages

|  |  |  |  |
| --- | --- | --- | --- |
| **VOC** | **Evaluation via calibration function from** | **Limit of detection (ng)** | **Origin of emissions** |
| **Terpenes** |  |  |  |
| α-pinene | α-pinene | 1,0 | wood |
| camphene | α-pinene | b) | wood |
| β-pinene | β-pinene | c) | wood |
| myrcene | α-pinene | b) | wood |
| 3-carene | 3-carene | 1,0 | wood |
| limonene | α-pinene | b) | wood |
| p-cymene | p-cymene | 1,1 | wood |
| terpinolene | terpinolene | 2,1 | wood |
| **Saturated aldehydes** |  |  |  |
| hexanal | hexanal | 2,0 | wood |
| **Aromatic aldehydes** |  |  |  |
| benzaldehyde | benzaldehyde | 2,7 | wood |
| **Organic acids** |  |  |  |
| acetic acid | acetic acid | 127,8 | wood /animal cagea) |
| propionic acid | toluene-d8 | b) | animal cagea |
| hexanoic acid | hexanoic acid | 10,6 | wood |

a) includes the complete exposure scenario consisting of animal cages, animals and their excretions as well as bedding and food.

b) no compound-specific response factor and limit of detection was determined

c) no limit of detection was determined

**Supplementary Table 2.** Murine primer sequences used for real-time polymerase chain reaction

|  |  |
| --- | --- |
| *Primers* | Sequences |
| *Filaggrin 2* | fw: GAGCAAGGATGAGCTAAAGGAAC  rv: GCCACGCCTATGCTTCTTTGAC |
| *Involucrin* | fw: CATCTGAGACAGCACCAGGA  rv: TGCTGCTTTTCTCCTGGAAT |
| *TSLP* | fw: CTTCTCAGGAGCCTCTTCA  rv: AGCCAGGGATAGGATTGA |
| *β-actin* | fw: CTAAGGCCAACCGTGAAAAG  rv: ACCAGAGGCATACAGGGACA |
| *GAPDH* | fw: CGTCCCGTAGACAAAATGGT  rv: TTGATGGCAACAATCTCCAC |

**Supplementary Table 3.** Concentrations of synthetic pinewood mixture used for *in-vitro* exposure experiments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **CAS No.** | **µg/m³\*** | **%** | **Mass concentrations  (mg / L bag volume)** |
| **α pinene** | 80-56-8 | 7018 | 78.57 | 3.93 |
| **3-carene** | 13466-78-9 | 1746 | 19.55 | 0.98 |
| **limonene** | 5989-27-5 | 131 | 1.47 | 0.07 |
| **hexanal** | 66-25-1 | 37 | 0.41 | 0.02 |
| **TOTAL** |  | **8932** | **100** | **5.00** |

\* Used concentrations based on chemical analyses (TD-GC-MS) of representative volatiles emitted by native pinewood.