**Table 1 : Sweat analysis by GC-MS**

| **body area** | **Sampling device** | **Sampling method** | **Extraction method** | **Adsorbent phase** | **Desorption method** |  | **Sample storage conditions** | **Analysis method** | **GC-MS system** | **GC-column** | **Sensibility** | **Ref.** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| wrist and ankle | Custom sampler made of a 25cm length tube made of medical grade PDMS (0.64 mm OD × 0.3 mm ID, Sil-Tec®). | passive sampling for 1h in direct contact with the skin. Each subject wear 2 tubes as anklets and 2 tubes as bracelets. Mylar® reflective sheeting (Hydroponic), 35 cm × 3 cm, is used to cover the samplers | n/a | n/a | **Thermal desorption** at 250°C in splitless mode for 30s (PDMS sampler is inserted into a glass inlet liner (Agilent)) |  | stored in aluminum foil at 4°C for no more than 48h | GCxGC-TOFMS | LECO Pegasus® 4D GC×GC-TOFMS system | 1D column : Rxi-5Sil (Restek) 30m × 0.25mm × 0.25μm  2D column : Rxi-17Sil (Restek) 1m × 0.25mm × 0.25µm | **not specified** | [1] |
| forehead | PDMS patch (5mm x 15mm x 0,45mm) sandwiched between two layers of thin, flexible stainless-steel mesh | PDMS patch is held in place by a conditioned cotton-wool pad on the subject’s forehead for 30min | n/a | n/a | **Thermal desorption** at 180°C for 10min. **Cryo-focusing** at -10°C. Injection splitless at 300°C for 5min |  | PDMS patches are stored into empty inert coated stainless steel thermal desorption tubes at -80°C for no longer than 21 days | GC-MS | HP5890 GC coupled to a Fisons Trio 1000 quadrupole mass spectrometer | DB-5 MS (Agilent) 60m x 0.25mm x 0.25µm | **170pg/cm to 200pg/cm** | [2] |
| forearms and abdomen | PDMS patches (20mm × 15mm × 0.45mm) | sampling in direct contact with the skin; patch are placed on the skin and covered with a cotton wool pads, fixed with microporous tape for 5min to 120min | n/a | n/a | **Thermal desorption** at 180°C for 5min. **Cryo-focusing** at -10°C. Injection splitless at 300°C for 3min |  | stored into unpacked Silcosteel® treated thermal desorption tubes (C-TBE10; Markes) sealed with stainless steel caps (SS-400-C; Swagelok), at 4°C in airtight glass containers **no longer than 24h** | GC-MS | GC (not specified)-ion trap MS (Varian, 2200) | DB-5MS (Agilent) 60m x 0,25mm x 0,25µm | **50pg to 100ng per sample (relative estimation)** | [3] |
| upper back, forearm and back thigh | 6, 11 and 17mm diameter PDMS round patches with a thickness of 254 µm, sandwiched between two layers of thin, flexible stainless steel mesh | headspace passive sampling for 60min | n/a | n/a | **Thermal desorption** at 250°C for 3min. **Cryo-focusing** at -120°C. Injection splitless at 280°C |  | stored no **longer than 72h** | GC-MS | GC 6890 (Agilent) coupled to a 5973 quadrupole mass spectrometer (MS) (Agilent) | RK13870 (Restek) 30m x 0,32mm x 1,8µm | **not specified** | [4] |
| arms | Twister (PDMS)-coated stir bars (10 mm,0.5 mm in film thickness, 24 ml PDMS volume; Gerstel GmbH) | active sampling in direct contact with the skin | n/a | n/a | **Thermal desorption** at 280°C for 10min. **Cryo-focusing** at −60°C. Injection at 280°C for 10min |  | stored at 4°C for 14 days | GC-MS | Agilent 6890N GC connected to 5973i MSD MS | DB-5MS (Agilent) 20m x 0,18mm x 0,18µm | **not specified** | [5] |
| axilla | Twister (PDMS)-coated stir bars (10 mm,0.5 mm in film thickness, 24µL PDMS volume; Gerstel GmbH) | active sampling in direct contact with the skin | n/a | n/a | **Thermal desorption** at 250°C for 3min. **Cryo-focusing** at −80°C. Injection at 280°C for 10min |  | stored at 4°C for 20 days | GC-MS | Agilent 6890N GC connected to 5973i MSD MS | DB-5MS (Agilent) 20m x 0,18mm x 0,18µm | **not specified** | [6] |
| inner arm and chest | 132 mg of 20/35 meshed poly(2,6-diphenylphenylene oxide) | sampling for 1h in direct contact with the skin | n/a | n/a | **Thermal desorption** at 300°C for 15min |  | stored in vials closed and wrapped with Parafilm at 4°C, up for 8 months | GC-MS | Shimadzu QP–2010 | SLB-5ms (Sigma-Aldrich) 30m x 0,25mm x 0,5mm | **ppb** | [7] |
| hand | DUKAL brand, sterile, 2 x 2, 8ply, gauzes sponges | active sampling in direct contact with the skin (palm hands) | SPME at room temperature for 21h | CAR/DVB/PDMS | **Thermal Desorption** at 250°C |  | stored at room temperature for 24 h | GC-MS | Agilent 6970 GC with a 5973 MS | HP5-MS (Agilent) 30 m x 0.25 µm x 0.25 mm | **not specified** | [8] |
| feet | a strip of cotton wool (3.0 g) | sampling in direct contact with the feet skin (cotton placed in the socks) for 6h | SPME 10 min at 55°C | polyacrylate (85 mm) 100-mm-long fiber | **Thermal desorption** at 230°C for 3min |  | not specified | GC-MS | GC Star 3400 CX (Varian) coupled with an ion-trap mass spectrometer detector Saturn 2000 (Varian) | ZB-FFAP (Phenomenex) 30m x 0,25m x 0,25µm | **2-10nmol for fatty acids** | [9] |
| genitourinary area | gauze made of cotton and cellulose, of 20x13 cm dimension | sampling in direct skin (genito-urinary area) overnight | Headspace 100°C, 70 rpm for 30 min | n/a | Injection splitless 260°C |  | not specified | GC-MS | G890 N Network GC coupled to a 5973 Network MSD (Agilent) | DB-1701 (Agilent) 60m x 250 mm x 0.25mm | **not specified** | [10] |
| palm of hands | gauze | sampling in direct contact with the skin (2cm square area of the palm is wiped for 1 min with 0.1 g of dry gauze) | SPME at 50°C for 45min | PDMS/DVB | **Thermal desorption** at 230°C |  | stored 24h at 4°C | GC-MS | Shimadzu QP–2010 | DB-1 (J&W) 60m × 0.25mm x 1.0µm | **LOD for 2-nonenal: 2.4pg/cm2/h** | [11] |
| upper back | medical gauze | active sampling by swabbing the gauze on the skin to collect the sebum and the sweat (sampling time not specified) | DHS; incubation for 5 min at 60 °C, trapping by purging 500 mL of the sample headspace at 50 mL/min with dry nitrogen through an adsorbent tube kept at 40°C | Tenax TA | **Thermal desorption** at 250°C for 5min, split ratio 1:10; **Cryo focusing** at 10°C, injection at 250°C for 10min |  | stored at -80°C in inert plastic bags | GC-MS | GC 7890B coupled to a MSD 5977B (Agilent) | HP-5MS Ultra inert (Agilent) 30m × 0.25mm × 0.25μm | **not specified** | [12] |
| armpit | absorbent pads | passive sampling (pads are attached via stainless steel poppets in pre-cleaned T-shirts) | HSSE in 250mL Scott-Duran GLS80 bottles with a PDMS stir bar (1cm long, 1mm thickness) at 60°C for 2h | PDMS | **Thermal desorption** at 250°C for 5min, splitless; **Cryo focusing** at -120°C, injection at 250°C for 5min with a split ratio 1:5 |  | stored in bags and vacuum-sealed at -28°C | GCxGC-TOFMS | Pegasus® 4D GCxGC-TOFMS (Leco) | 1D column: Rxi-5MS (Restek) 30m x 0,25mm x 0,5µm; 2D column : RTX-200 (Restek) 2m x 0,15mm x 0,15µm | **not specified** | [13] |
| hand | Sterile cotton gauze pads (100% cotton) Dukal |  | SPME; equilibration at 50°C for 24h, extraction for 15h | 2cm fiber, 50/30µm DVB/CAR/PDMS | **Thermal desorption** at 270°C for 5min in splitless mode |  | stored in the cleaned 10 mL vials, sealed and secured with parafilm around the screw cap opening | GC-MS | GC 8890 coupled to a 5977B MSD (Agilent) | HP5-MS UI (Agilent) 15m x 0,25mm x 0,25µm | **not specified** | [14] |
| palm of hands | Gauze pads were DUKAL brand, 100% cotton, sterile, 2 × 2, 8ply, gauze sponges | Subjects hold the gauze between the palms of their hands as they walked outdoors for 10 min | SPME at room temperature for 21h | 50/30µm DVB/CAR/PDMS | **Thermal Desorption** at 250°C |  | stored in sealed 10mL glass vial for 24h prior to extraction at ambient temperature | GC-MS | GC 6970 (Agilent) with a 5973-mass selective detector (MS) | HP-5MS (Agilent) 30m x 0,25mm x 0,25µm | **not specified** | [15] |
| armpit | Dukal brand, sterile, 2x2, 8-ply, gauze sponges | Subjects wiped a gauze on their armpit after 30min of outdoors physical exercised | SPME at room temperature for 15h | 50/30µm DVB/CAR/PDMS | **Thermal Desorption** at 250°C |  | stored in sealed 10mL glass vial for 24h prior to extraction at ambient temperature | GC-MS | GC 6970 (Agilent) with a 5973-mass selective detector (MS) | HP-5MS (Agilent) 30m x 0,25mm x 0,25µm | **not specified** | [16] |
| bust | cotton-shirts | passive sampling; subjects wear the shirt for 3 days; a rectangular piece 20 x 30cm is cut and stored in a 10L Tedlar® bag | DHS using a sampling pump; The flow rate of the pump was maintained at 1.8L/min while air deodorized with activated carbon was supplied to the bag to keep the capacity at 10L.Headspace collection was performed at 23°C for 18 h | TENAX-TA (GL Science) | **Liquid desorption** with 10mL of diethyl ether |  | stored in a 10L Tedlar® bag at room temperature in a dark place for no longer than one day | GC-MS | G1800A GCD system (Hewlett-Packard) | INNOWAX (Hewlett-Packard) 60m x 0,25mm x 0,25µm | **ppm** (concentrations in ng per mg skin surface lipids) | [17] |

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