

A PROPOSAL FOR A NEW PASSIVE DEVICE USEFUL FOR LONG-TERM SURVEILLANCE IN SMOKING AND NON-SMOKING AREAS

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An Analyst2 type passive (diffusive) device has been tested in both a preliminary laboratory trial and an indoor field test, in order to verify its effectiveness in the determination of airborne nicotine, a classic tobacco smoke tracer, over monthly sampling periods. Preliminary laboratory tests, performed in an artificially polluted atmosphere, allowed us to determine the diffusion uptake rate of the proposed sampling device (about 15 ml min⁻¹), by the comparison with an active sampling tube, filled with the same adsorbing agents (Tenax GC and Carbotrap C) and connected to an aspirating low-flow personal-type pump. Storage and recovery tests confirm the reliability of the proposed method and device for both the employed adsorbing agents. The use of a very polar extraction solvent (acetonitrile) guarantees a selective extraction, allowing us to minimize the interference of others co-adsorbed species. It permits the nicotine determination without using specific detectors. In fact, in the proposed Gaschromatographic conditions, nicotine is quite the sole and, in any case, the main and most insulated among the eluted peaks.