



## Pinpointing the Origin of Volatile Organic Compounds in Urban Air Using Passive Sampling and Gas Chromatographic Methods

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Air pollution is one of the major environmental risk factors affecting human health, resulting in more than nine million deaths worldwide yearly.<sup>1,2</sup> The studies for volatile organic compounds (VOC) in urban areas in the southern Balkans are scarce and our objective was to monitor the organic emissions in outdoor air in seven cities in Kosova for several months. Radiello® diffusive passive samplers were placed in appropriate locations and applied for sampling organic analytes from urban air.<sup>3</sup> In parallel, the profile of VOC from commercially available gasoline and diesel fuels in the respective cities was determined using static headspace gas chromatography/mass spectrometry (SHS-GC-MS). In the analyzed gasolines, the most abundant organic compound is toluene and in the diesel fuels *n*-tetradecane and *n*-hexadecane are the most abundant. Based on the results of the GC-MS analyses, the most common VOC identified in monitoring sites are aromatic compounds, normal alkanes, and oxygenated compounds. The BTEX and alkyl aromatics originated from unleaded gasoline, whereas the linear alkanes come most likely from diesel fuel. The detected limonene and alpha-pinene are most likely from plant origin, but they also may be present in cleaning products. The long-term goal is to carry out a quantitative analysis of volatile organic compounds in outdoor air throughout the year.

**Keywords:** VOC, air monitoring, urban atmosphere, Radiello®, passive sampling.

### References

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