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Some applications on isolation and characterization of bioactive compounds from different essential oils

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Isolation and characterization of known or unknown bioactive compounds from complex mixtures have always been important challenge for researchers. Preparative fractionation of compounds is one of the most widely discussed applications in essential oil studies. In scope of ongoing research projects, mono-, sesqui- and diterpenes were precisely separated by using preparative gas chromatography (Prep-GC) technique from different essential oils with a high purity (>95%). In this context, the compounds such as limonen-10-al (monoterpene) from the aerial part oil of *Dracocephalum moldavicum*, suberosin (sesquiterpene) and 3,7(11)-eudesmadien-2-one (sesquiterpene ketone) from the fruit oil of *Prangos pabularia* and the leaf oil of *P. heyniae* respectively, 11-hydroxy-2,4-cycloeudesmane (juglaterpene) from the leaf oil of *Juglans regia*, 4-acetoxymethy-2-[(5-methyl-1-methylene)-hex-4-enyl]-1-methyl-1-4-methy-pent-3-enyl)-cyclobutane (diterpene) from the fruit oil of *Ammi visnaga* and cis- and trans-artemidin (isocoumarin) from the aerial part of oil of *Crinitaria tatarica* have been successfully isolated and identified by using different spectroscopic techniques (NMR, MS, IR etc.). In similar way, enantiomeric separations were also performed for (+)-carvone from *Anethum graveolens*, (+)-piperitone from *Mentha pulegium*, (+)-pulegone from *Ziziphora bungeana*, (+)-linalool from *Nepeta italica*, (-)-linalool from *Ocimum basilicum*, (-)-menthol from *Mentha piperita* and (-)-β-pinene from *Achillea grandifolia* essential oils by using different chiral GC columns.

Biography

Temel Ozek has graduated as a Chemical Engineer and did two MSc degrees; one in Chemical Engineering and second in Pharmacy and also completed his PhD in Chemical Engineering. His interest areas are MAP distillation and extraction techniques for laboratory and industrial scale (SFE-CO_2, MW etc.), sophisticated analytical techniques (MD-GC/MS, UPC^2 and NMR etc.) and designs of commercial scale distillation and extraction systems. He has published more than 185 papers and was an Editor of *RNP/Essential Oils*. Presently, he is the Director of Medicinal Plant, Drug and Scientific Research Center.

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