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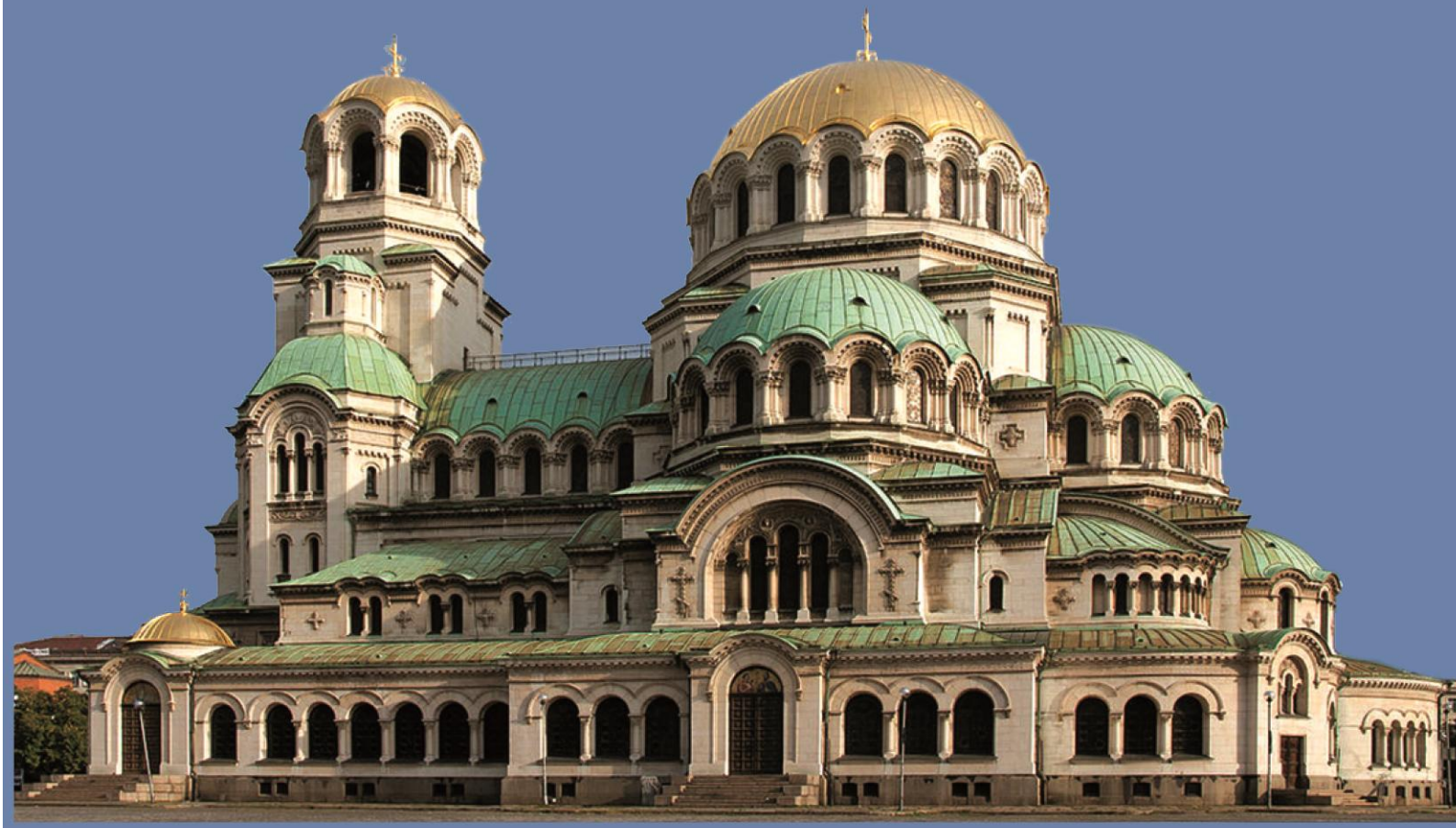

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ABSTRACTS

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PHENOLIC PROFILE, ANTIOXIDATIVE AND ANTIMICROBIAL ACTIVITY OF „ORANGE AND BLUE SUBTYPES" OF TURKISH PROPOLIS

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Introduction. Propolis is a very complex resinous mixture and exhibits many pharmacological properties. Recently, several studies identified two subtypes ("orange and blue") of Romanian, Serbian, Croatian, German, French, and Slovenian poplar propolis using different analytical techniques. The HPTLC fingerprint of Turkish propolis samples also showed presence of two different botanical subtypes.

Aim. The aim of this study was the comprehensive phenolic profiling of orange, blue, and one more subtype of Turkish poplar propolis using accurate mass spectrometry, examination of quality control parameters, as well as its antioxidative and antimicrobial activity.

Methods. Phenolic profile of 48 Turkish propolis samples was investigated by using UHPLC–LTQ/Orbitrap/MS/MS method. Quality control parameters such as total phenolic (TPC) and flavonoids content (TFC), and antioxidative activity was investigated by spectrophotometry. Antimicrobial activity of Turkish propolis against oral cavity bacteria from the genus *Streptococcus* (*S. pyogenes*, *S. sanguinis*, *S. mutans*) and *Candida albicans* ATCC 10231 was determined by diffusion and microdilution methods.

Results. Fifty-one phenolic compounds were identified in three subtypes of Turkish propolis. Quality control parameters showed higher TPC, TFC, as well as antioxidative activity of orange subtype. Turkish propolis samples have showed a great antimicrobial potential against all tested strains, with the *S. pyogenes* as the most sensitive one.

Conclusions. Turkish propolis, especially its orange subtype, can be considered as the high-quality subtype due to its quality, strong antioxidative and antimicrobial activity. Ferulic and caffeic acid were dominant compounds in almost all samples that had the strongest antimicrobial activity.

Keywords. Turkish propolis, phenolic profile, quality control parameters, antimicrobial activity