interaction processes. Hence the advanced rifting-related origin is also more supported than the mid-oceanic ridge-related setting.

Petrochemical features of the studied rocks show mainly within-plate basalt characteristics, while the MORB-features are subordinate. The studied Triassic basalts are forming a group easily distinguishable from the Jurassic basalts of the same mélange on the different discrimination diagrams. The high Zr/Y ratios (above 4) are also characteristic to the within plate basaltic volcanics. Thus the geochemical data also support that the Triassic pillow basalts, containing pelagic carbonate peperitic facies, are related to the advanced stage rifting of the Dinaridic-Hellenidic Neothethys. However the good correlation among the different studied occurrences and their genetic relationship are also shown with the help of the REE pattern which show slight enrichment from La to Gd in comparison to the Jurassic ophiolites.

Petrochemical signatures of Sarmatian volcanic rocks in the mineralized and unmineralized areas of the Tokaj Mountains, NE-Hungary

Kiss P.[1], Molnár F.[1], Gméling K.[2] and Pécskay Z.[3]

[1]*Department of Mineralogy ELTE, Budapest, Hungary, geokissp@gmail.com*
[2]*Institute of Isotopes, Hungarian Academy of Sciences, Budapest, Hungary*
[3]*Institute of Nuclear Research of the Hungarian Academy of Sciences, Debrecen, Hungary*

The Tokaj Mts. is located in northeastern Hungary and is a part of the Inner Carpathian Volcanic Arc. This Arc was formed from the Lower-Middle Miocene to almost recent times. In the Tokaj Mts., medium to high K intermediate and acidic calc-alkaline volcanic rocks have been accumulated during the Middle-Upper Miocene (Badenian-Sarmatian-Pannonian) in an N-S oriented volcanotectonic graben that is underlain by Proterozoic to Mesozoic crystalline rocks.

Although a huge number of K/Ar age data is available for the igneous rocks and hydrothermal processes in the Tokaj Mts. no modern systematic geochemical database has existed up to now. In this study, we used rhyolite, dacite and andesite samples of Sarmatian age selected from the K-Ar database and new samples from outcrops were also investigated. The samples were selected on the basis of their K-content and their relationships to hydrothermal mineralization. In the southern part of the mountains, high K rhyolites are laden with shallow levels of low sulphidation type epithermal systems. Opposite to this, rhyolite field with lower K-content in the northern part of the Tokaj Mts. have no hydrothermal mineralization.

There are differences not only in major, but also in trace element geochemistry between the samples from the northern and the southern part of the Tokaj Mountains. Previous papers determined that the southern rhyolites contain K-feldspar phenocrysts in accordance with the significant potassium enrichment (whole rock K2O content varies in between 4.35–5.61 wt%) while rock forming K-feldspar is absent in the rhyolites from the North (where their K2O content is 3.28–5.1 wt%). Dacites also show some differences and they were formed in the same time as rhyolites and andesites (in between 11–13.4 Ma) in the northern Tokaj Mts., while they are much younger (10.1–10.57 Ma) than those rocks in the southern Tokaj Mts. Both the boron content (10.1–68.1 µg/g) and the spider patterns of other trace elements in the volcanic rocks show typical subduction related features, however the direct influx of the subduction related fluids during magma generation can be excluded. Rather possible explanation for the magma genesis is decompression melting of a previously metasomatised mantle, enriched with subduction related components. The presence/absence of rhyolite-connected epithermal systems appears to be correlated with the Cl content of the rocks: samples from the unmineralized northern rhyolite field contain much less Cl (below 0.2 wt%) than high-K rhyolites in the southern part of the Tokaj Mts. (more than 0.2 wt%)

Acknowledgements: This work was supported by the OTKA K68153 grant.