## 5.5.P15

# Albite-granite dykes: A new type Au-bearing formation of the Altay telluride-type gold deposits, in Xinjiang province, China

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Albite-granite dykes are major ore-bearing formation in Altay gold deposit, Xinjinag province, China. The rock is mainly composed of albite, quartz and muscovite, with dispersing with tellurides such as calaverite, petzite, sylvanite. The petrochemistry of albite-granite shows a middle $SiO_2$ (63.58%-69.96%), high $Al_2O_3$ (15.32%-17.17%), and rich $Na_2O$ (3.42%-7.97%) and relatively poor $K_2O$ (0.83%-3.42%). The gold content of the albite–granite dykes is $1.5 \times 10^{-9}$ – $89 \times 10^{-9}$with the average is $24 \times 10^{-9}$; Te content is $6.7 \times 10^{-9}$-$833.3 \times 10^{-9}$ with the average is $316.2 \times 10^{-9}$ and S content is 0.03%-0.44% with average 0.13%. According to elements correlation analysis, Au displays a positive correlation with Pb, Ag, Zn and Te. The total content of REE is from $50.69 \times 10^{-6}$ to $111.39 \times 10^{-6}$ , with LREE/HREE ratios of 4.82-16.58, $(La/Yb)_N$ of 5.70-37.34 ; δEu of 0.89-1.42,δCe of 0.81-1.0 ; The primitive strontium ratio ($(^{87}Sr/^{86}Sr)_i$ ) is about 0.7043. The Rb-Sr age of the dykes is 352.0±40Ma and Pb-evaporation zircon age of 371.2±22Ma. Sulfur, hydrogen, oxygen and strontium isotopic compositions ($\delta^{34}S$ = -2.46‰ to -7.02‰, $\delta^{18}O_{sio2}$ 15.68‰ to 19.26‰ δD = -79.3‰ to -52.9‰, $(^{87}Sr/^{86}Sr)_i$ = 0.7043) suggest the albite–granite dykes is the mantle-type granite and belongs to a special syenite subspecies in the alkali rock series. The dynamic study of the tectono-geochemistry indicates the dykes was formed in the rift valley of the continental margin, which was a re-melting product of the mantle materials and underthrust ocean crust with the slipping, tensile or shear of the crust and mantle, and emplaced sedimentary along the SN striking tension fracture zone in early Variscian.

Keywords: albite–granite dykes; Altay telluride-type gold deposit; geochemistry; Xinjiang

## 5.5.P18

# Similar sources for the Apuseni Mts and Banat (Romania) Late Cretaceous Banatitic magmatism

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In Romania, the Late Cretaceous magmatism typical of the Alpine belt of eastern Europe is exposed in two distinct areas, Apuseni Mts and Banat, for which distinct sources (two different subduction zones) have usually been inferred. To investigate this hypothesis, a petrological and geochemical study has been undertaken on a series of volcanic (andesite to rhyolite) and plutonic (gabbro, monzodiorite to granite) samples from both areas. Apatite and zircon saturation temperatures overlap in both areas and indicate that apatite (807 to 1075°C) crystallized slightly earlier than zircon (704 to 808°C) in agreement with petrographic data. The Al-in-hornblende geobarometer confirms their shallow level of emplacement (<2kb). In major and trace elements variation diagrams, samples from Apuseni Mts and Banat define overlapping high-K calc-alkaline differentiation trends of decreasing $FeO_t$, MgO, CaO, $P_2O_5$, $TiO_2$, Sr, Zn, Co, V and increasing Rb and Th with increasing $SiO_2$ (54.37% to 71.97%). Spiderdiagrams and REE patterns are also identical in both areas with enrichment in K, Rb, Ba, Th, negative Nb, Ta, P, Ti anomalies and LREE fractionation ($(La/Yb)_N \approx 10$). Modelling of the differentiation process suggests that fractional crystallization played a dominant role. In an $\varepsilon_{Ndt}$-$Sr_i$ (@80Ma) diagram, samples define a continuous trend of decreasing $\varepsilon_{Ndt}$ with increasing $Sr_i$. When samples with similar $SiO_2$ content are compared, those from Apuseni Mts consistently display a more enriched signature ($Sr_i$ : 0.704576 - 0.707019 - $\varepsilon_{Ndt}$ : +1.6 to –3.7) than those from Banat ($Sr_i$ : 0.704167 - 0.705806 - $\varepsilon_{Ndt}$ : +3.9 to –0.2). Major and trace element data thus favour a similar parent magma for the volcano-plutonic complexes from Banat and Apuseni Mts, whereas Sr and Nd isotopic compositions show that either the source of these parent magmas, possibly enriched source rocks in the upper mantle or lower crust, was heterogeneous, or more assimilation occurred in the Apuseni Mts when magmas ascended from the upper mantle/lower crust interface up to their final level of emplacement, or both processes took place together.