Geochronology of zircons from durbachites of Třebíč Pluton, Bohemian Massif.

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Durbachite, an ultrapotassic plutonic rock, was sampled from the north margin of the Třebíč Pluton at Velke Meziříčí. The Třebíč Pluton is the largest durbachite body in the Czech Moldanubian Zone of the Bohemian Massif. Intrusion of the Třebíč Pluton, postdates the granulite facies event (350-340 Ma) in the Moldanubicum (Kröner, et al., 1988), and is regarded to be contemporaneous with intrusions of calc-alkaline plutons (350-330 Ma, Holub et al., 1997) in the area. The Třebíč Pluton yields U-Pb zircon ages of 338-335 Ma, but durbachite is known to contain complex zircons and gives discordant U-Pb ages (Kotkova et al., 2003). In this study we present zircon age estimates utilizing CHIME (chemical Th-U-total Pb isochron) and SHRIMP isotopic methods. Zircon occurs as skeletal and euhedral crystals 0.1-0.3 mm in length. Most grains have oscillatory growth zoning, and are U-rich (up to 7000ppm U), with metamict regions within growth zones. Electron Microprobe (EMP) analyses were carried out on JEOL JCXA-733 at Nagoya University with 4 WD spectrometers, with corrected UMβ, ThMα and PbMα lines used for age calculation of 160 analytical spots from 8 grains. EMP analysis of metamict areas show elevated concentrations of CaO, which tend to show slightly older apparent ages due to the presence of common Pb. A CHIME age of 342±16Ma was calculated from analytical data with CaO<300ppm and PbO>10ppm. Isotopic analysis by SHRIMP II at the NIPR in Tokyo yielded a ^{204}Pb-corrected concordia age is 341.6±2.8 Ma. Despite the fact that EMP dating requires zircon with substantial U contents that is likely to be susceptible to Pb loss or common Pb contamination, CHIME and SHRIMP ages show excellent agreement.

This CHIME zircon age coupled with the 335 Ma zircon U-Pb age (Kotkova et al., 2003) for associated syenite within the Třebíč Pluton and Durbachite in the alpine domain (334±2.5 Ma, Schaltegger and corfu, 1988). Durbachitic bodies in the Variscan orogen appear to have

formed within a short time interval.

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