Geochemistry, petrogenesis and tectonic setting of Late Neoproterozoic adakites and gabbro-anorthosites from Zimovey massif (southwestern framing of the Siberian craton)

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Dykes of adakites (576-552 Ma) and small bodies of gabbro-anorthosites (546 Ma) are found in the Yenisey Ridge orogen (southwestern framing of the Siberian craton). These intrusions cut metabasites with layers of metaandesites, which are represented by granulite to amphibolite facies Grt-bearing meta-igneous rocks of the Zimovey massif. Metabasites have high Nb concentrations, which are higher than primitive mantle values (up to 10-80 times), but lower than in OIB. Adakites and gabbroids show negative Nb anomalies similar to island arc rocks. Adakites (SiO_2 varies from 63.81 to 72.06 wt%) are produced by melting of Nb-enriched metabasites. They have Nb enrichment of zircons and their Nb, Ta, Sr, Tb, and Y abundances are complementary to those of metabasites. Late Neoproterozoic adakite-gabbro-anorthosite association was possibly formed in an active margin setting along the tectonic boundary between Siberia and the Paleo-Asian plate.