

ISOTOPIC CONSTRAINTS ON THE PATAGONIAN BATHOLITH (45 °S)

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The Patagonian Batholith is a major Jurassic to early Tertiary crustal unit, intruded in an extensional arc setting. Seven granitic rocks were dated by SHRIMP (U/Pb in zircon) and Rb/Sr (mineral isochron), peak activity about 100 Ma. $^{87}\text{Sr}/^{86}\text{Sr}$ (0.7040 to 0.7044) and Pb/Pb of rocks indicate mixture of mantle and upper crust. The Victoria tonalite, north of Lago Fontana (Argentina), has $^{87}\text{Sr}/^{86}\text{Sr}$ about 0.7052. It produced an important contact aureole in the Neocomian marine sedimentary rocks. Three of seven samples have inherited zircons. A gabbro and two granites yield inherited ages about 2.0-3.3 Ga. The lower crust sampled by the magmas in the Lago Fontana region is a Archean-Paleoproterozoic basement beneath Mesozoic sedimentary-volcanic cover. Tertiary granites of mantelic origin were emplaced in the central section of the Patagonian Batholith. These may be related to the Liquiñe-Ofqui fault zone. A diorite was dated about 12 ± 2 Ma (Rb/Sr) in the proximity of Puerto Chacabuco (Chile), with $^{87}\text{Sr}/^{86}\text{Sr}$ about 0.7038. The Patagonian Batholith is a major Mesozoic crustal unit and sampled complex types of Archean-Paleoproterozoic