

# ORIGIN OF THE META-IGNEOUS ROCKS FROM SOUTHERN SIERRA DE COMECHINGONES, ARGENTINA

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The southern Sierras de Comechingones within the Sierra de Córdoba is the major block of the Pampean Range in Argentina. Lithologically is composed by a metasedimentary-metaplutonic sequence formally named Monte Guazú Complex.

Two major tectonothermal cycles affecting most of the southeastern Pampean Range area both were recognized in Sierras de Comechingones. During the Pampean orogeny (first Cambrian Cycle) meta-plutonic bodies intruded the metasedimentary supracrustal complex but they are emplaced post-dating the metamorphic peak. The second major cycle named Famatinian orogeny transform the original igneous fabric of the metaplutonic rocks.

Petrographically the metaplutonic rocks of Monte Guazú Complex are biotite granodiorites to biotite  $\pm$  hornblende tonalites. They show  $\text{SiO}_2$  ranging from 62 to 69 wt %, and excluding  $\text{K}_2\text{O}$  and  $\text{Na}_2\text{O}$  the major elements decrease with increasing  $\text{SiO}_2$  in Harker diagram. The lithophile trace element abundances (in ppm) are Rb  $\approx$  120, Ba 200-720, Sr 200 – 410. They show low contents of HFS-element particularly Nb  $\approx$  11, Zr  $\approx$  220 and Y  $\approx$  30. The REE pattern shows a moderate to low steep slope  $\text{LaN/YbN} = 4.4 - 7.7$ , and minor Eu-anomaly ( $\text{Eu/Eu}^* \approx 0.75$ ) a variable abundance of Heavy-REE (from x6 to x25 chondrite normalized values). Chemical composition of biotite and hornblende suggests a calc-alkaline signature for these metaplutonic rocks. This result are broadly consistent with major and trace element geochemistry.

Summarized, the Monte Guazú Complex rocks compose a calc-alkaline suite suggesting the existence of a magmatic arc in this portion of the Sierra de Córdoba during the Pampean cycle.