

Insights into Ore Formation in a Jurassic Zn–Pb Skarn Associated with a Porphyry Cu System, Mocoa, Colombia

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This study focuses on the characterization of a Jurassic Zn–Pb skarn system associated copper mineralization in Mocoa, Colombia, which is spatially related to a porphyry deposit currently in exploration. The main objective is to better understand the mineralogical composition and the physicochemical conditions of ore formation by integrating petrographic, geochemical, and spectroscopic approaches.

The dataset consists of polished thin sections, doubly polished sections for fluid inclusion studies, and SEM-EDX analyses carried out on selected skarn minerals. Additionally, selected samples were analyzed using ICP-MS to obtain whole-rock geochemical data. The samples include both surface and drill core material and are considered representative of the mineralized system.

Petrographic analysis, together with SEM-EDX results, provides information on mineral assemblages and textural relationships. In parallel, microthermometric measurements and Raman spectroscopy allow the characterization of fluid inclusions and their physicochemical properties. The combined interpretation of these datasets helps to better constrain the evolution of the hydrothermal system and the processes involved in metal transport and precipitation within the skarn–porphyry system.

Overall, this work contributes to a better understanding of skarn formation linked to porphyry Cu systems in Mocoa area.