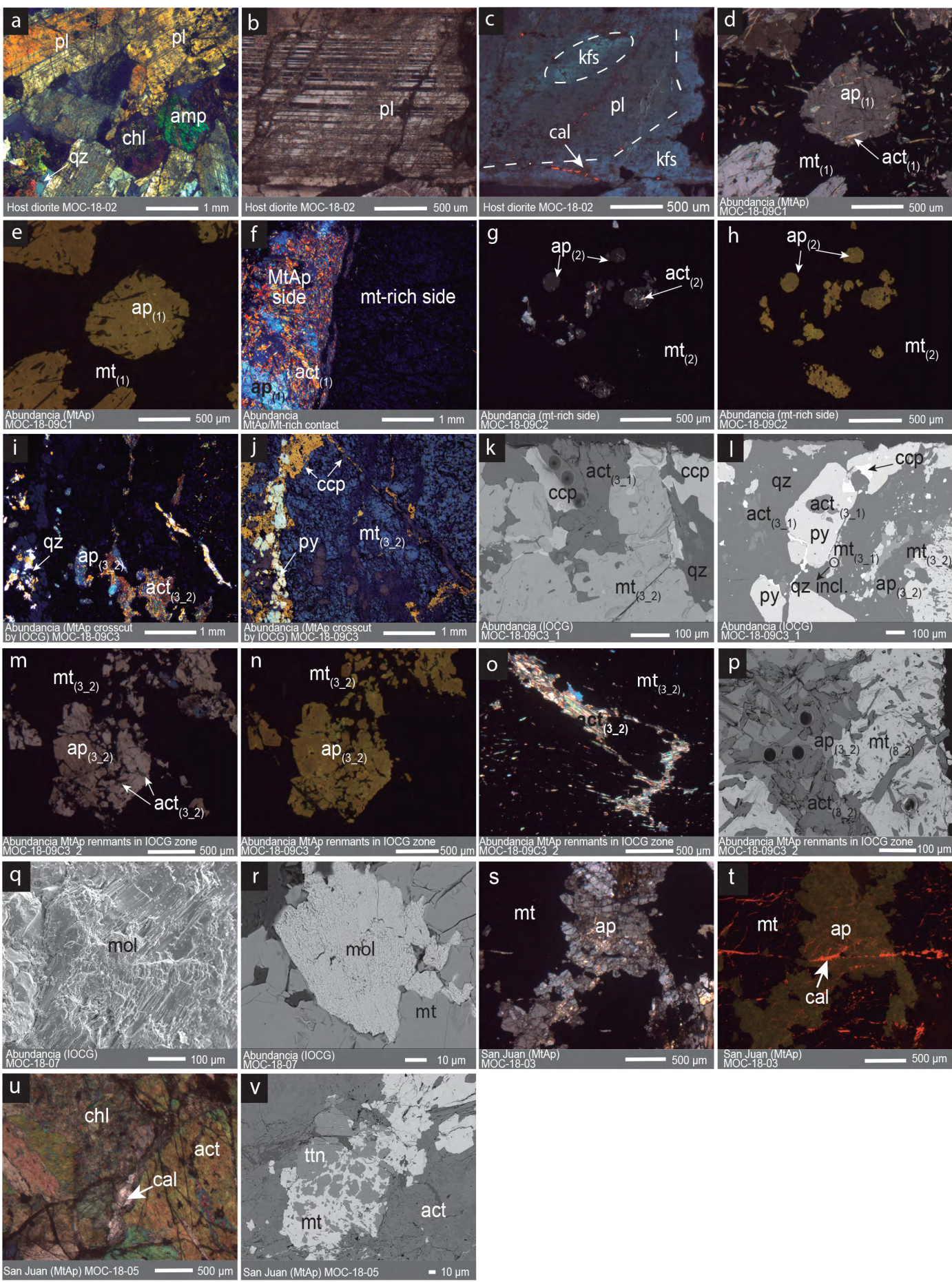




ESM Figure 1 Photomicrographs of the Abundancia and San Juan veins. **a** Dioritic host rock, XPL. **b** Plagioclase crystal in the diorite, XPL. **c** CL image of the plagioclase in the diorite being replaced by potassic feldspar and late calcite veinlets. **d** MtAp mineralization in Abundancia, with poikilitic euhedral apatite and acicular fine-grained actinolite crystals, also disseminated in the surrounding magnetite, XPL. **e** CL image of the previous sample showing the yellowish colour of the magmatic apatite. **f** Contact between the MtAp and the mt-rich side in the Abundancia vein, the mt-rich event being posterior, XPL. **g** Mt-rich side mineralization with poikilitic apatite and acicular fine-grained actinolite, surrounded by magnetite, XPL. **h** CL image of the previous sample showing magmatic apatite based on its colour. **i, j** IOCG event in Abundancia, with MtAp mineralization being crosscut by the ccp-py-qz-act-mt veinlets, XPL. **k, l** BSE images of the ccp-py-qz-act-mt IOCG veinlets. **m** Remnants of the MtAp mineralization in the IOCG zone, with coarse-grained poikilitic apatite enclosing acicular actinolite crystals. **n** CL image of the previous apatite. **o** Bands of acicular fine-grained actinolite in the magnetite from the MtAp mineralization in Abundancia. **p** BSE image of remnants of MtAp mineralization in the IOCG zone. **q** Secondary electron image of the laminar molybdenite, along with minor calcite. **r** BSE image of molybdenite crystals encrusted in the open spaces of the magnetite. **s** Coarse-grained apatite and massive magnetite in the San Juan vein, XPL. **t** CL image showing magmatic apatite, and late calcite veinlets in the San Juan vein. **u** Coarse-grained actinolite with weak to moderate chloritization, and late calcite veinlets, San Juan vein, XPL. **v** BSE images showing disseminated crystals in the actinolite with exsolution textures between magnetite and titanite in the San Juan vein. act=actinolite, amp=amphibole, ap=apatite, cal: calcite; chl: chlorite; ccp: chalcopyrite; kfs: potassic feldspar; mol: molybdenite; mt: magnetite; pl: plagioclase; qz: quartz; ttn: titanite