

Implications of the ultramafic rocks and serpentinites, western part of Korea

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In the western part of Korea, there are several occurrences of the ultramafic rocks and serpentinites. In the field occurrences, their distribution directions are mainly related to the normal fault or thrust, show strike dipping fault with adjacent Precambrian gneiss complex and metasediment. Geochemically, they are characterized by high magnesium number(=Mg/(Mg+Fe), >87), transitional element (mainly, Ni>1700 ppm, Cr>2000 ppm) and low alkali element(mainly K₂O<0.09 wt %, Na₂O<0.73 wt %) content and wide range of the incompatible element content (Ba=2-138 ppm, Sr=1-61 ppm). They also show high LFS/HFS and LREE/HREE ratios. The ultramafic rocks are harzburgites and dunites, and have experienced several stage of alteration and metamorphism. Petrographically, they show protogranular, equigranular-mosaic or -tabular, and also show porphyroclastic, schistose and recrystallized textures. Mineralogically, they contain olivine (>Fo₈₈), orthopyroxene (>En₈₈), spinel(chromite to spinel) and amphibole (Ca-amphibole) with minor clinopyroxene (diopsidic to augitic). These results are similar to Alpine type ultramafic rocks exposed by the orogenic movements during Earth histories.