

## **The Paleoproterozoic granite and Cretaceous rocks in the Southwestern coastal region of the South Korea**

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Paleoproterozoic to Phanerozoic plutonic and volcanic rocks are occurs in the the southwestern part of the Yeongnam massif. These magmatic rocks consist of Paleoproterozoic granite and Cretaceous andesitic to rhyolitic tuffs, rhyolite, andesite and granite. The Paleoproterozoic granite is intensely foliated trending NE-SW with dip to the NW or SE. The granite has total alkali content of 3.98–7.51 wt.%, and the compositional range belonging to granodiorite–granite in TAS diagram. Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, and P<sub>2</sub>O<sub>5</sub> contents of the granite tends to decrease with increasing SiO<sub>2</sub> content, whereas other major element contents show no correlation in major element variation diagrams. Weighted mean of SHRIMP zircon <sup>207</sup>Pb/<sup>206</sup>U ages for two different samples are 1874.4 ± 3.2 Ma (n=3) and 1872.4 ± 4.6 Ma (n=16). Cretaceous volcanic rocks are basaltic andesite, andesite, dacite and rhyolite, and belong to sub-alkaline series. Most of sub-alkaline series volcanic rock samples belong to High- to Medium-K calc-alkaline regions in SiO<sub>2</sub> vs. K<sub>2</sub>O plot. Most of major element contents except K<sub>2</sub>O and Na<sub>2</sub>O decrease as SiO<sub>2</sub> content increases. K–Ar whole-rock ages of rhyolitic to andesitic tuffs are 86.6 ± 1.7 Ma and 73.3 ± 1.5 Ma, whereas that of basaltic andesite is 110.9 ± 2.2 Ma. Cretaceous granite belongs to diorite–granodiorite in TAS diagram, and has total alkali content of 4.76–7.21 wt.%. Major element contents except for K<sub>2</sub>O and Na<sub>2</sub>O tend to decrease as SiO<sub>2</sub> content increases. Weighted mean of SHRIMP zircon <sup>206</sup>Pb/<sup>238</sup>U age is 82.3 ± 0.9 Ma (n=13).