

## Petrogenesis and magmatic process of the Ikoma gabbroic complex in Kinki district, southwest Japan

Naoko Koizumi<sup>1\*</sup>, Takamoto OKUDAIRA<sup>1</sup>, Daisuke OGAWA<sup>1</sup>

<sup>1</sup>Osaka City University

The Ikoma gabbroic complex is one of the largest Cretaceous mafic pluton in SW Japan are exposed at Ikoma mountains, consisting of mafic rocks (the Ikoma gabbroic rocks) and intermediate to felsic rocks, the Fukihata tonalites and the Kyuanji quartz diorites. These rocks show two modes in whole-rock compositional relation, (1) as mafic rocks with SiO<sub>2</sub> <48wt.%, major oxide contents change widely for constant SiO<sub>2</sub> contents, and (2) as intermediate rocks with SiO<sub>2</sub> >48wt.%, major oxide contents show linear trends with respect to SiO<sub>2</sub> contents. On the compositional variation diagrams, plagioclase compositions included in mafic rocks is located to the end-member on the trend of mafic rocks. Moreover, some samples show cumulus structures and their plagioclase mode are shown by a positive trend with respect to the variation of CaO contents. It suggests that the Ikoma gabbroic rocks were associated with the accumulation and/or fractionation of plagioclase. On the other hand, whole-rock compositions of intermediate rocks vary linearly with increasing SiO<sub>2</sub> contents, and their <sup>87</sup>Sr/<sup>87</sup>Sr initial ratios at 82 Ma show a positive trend with variation of SiO<sub>2</sub> contents. These characteristics suggest a mixing of mafic and felsic magmas. The mafic end-member is plagioclase-poor mafic rocks. Granitoids occurred at the same time of the activity of the Ikoma gabbroic complex are plotted on the extrapolation of the compositional trend of intermediate rocks, suggesting that the granitoids may be the felsic end-member in a magma mixing.

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