Two contrasting Cretaceous granitoid plutons (O’hara and Ohgi plutons) are distributed side by side, west to Lake Biwa, southwest Japan. The O’hara pluton (4km × 1km) consists of a fine-medium-grained hornblende-biotite tonalite, exhibiting the adakitic geochemical characteristics, and belongs to the magnetite-series. Whereas, the Ohgi pluton (5km × 0.5~1km) consists of medium-grained hornblende-biotite quartz diorite, tonalite and granodiorite, including hornblende phenocrysts. It belongs to the calc-alkaline and ilmenite-series granitoids.

1 Geological outline

2 Petrography and geochronology

The O’hara pluton is not related to the formation of the Biwako Cauldron (modified after CRGGLB(2008)).

3 Whole-rock chemistry

4 Results and summary

Our petrological and geochronological investigations elucidate that a single granitic pluton (Kimura et al., 1988) consists of two contrasting granitic plutons of different petrochemical characters (Figs. 5, 6 and 7) and different ages (Table 1), with the mineralogical difference reported already by Nakano et al. (2014).

The O’hara adakitic pluton approximately of 100 Ma (Fig. 8 and Table 1) is situated in the easternmost part of the distribution area of adakitic rocks in the Kink district, southwestern Japan. This pluton is not related to the formation of the Biwako Cauldron and the ring complex around Lake Biwa.

In contrast, the Ohgi calc-alkaline pluton approximately of 70 Ma (Table 1) belongs to the members of the ring complex (Sawada et al., 1994), whose activity is also related to the formation of the cauldron shown in Fig. 1.