

Fig. 1 SIMS-based Th contents vs. EPMA-based Th contents. From left to right, the red points represent Daibosatsu, TARA, CAP and TOBA samples. The Th contents of SQ-51 allanites are too low to be precisely analyzed by Electron Microprobe, therefore, it is not be illustrated.

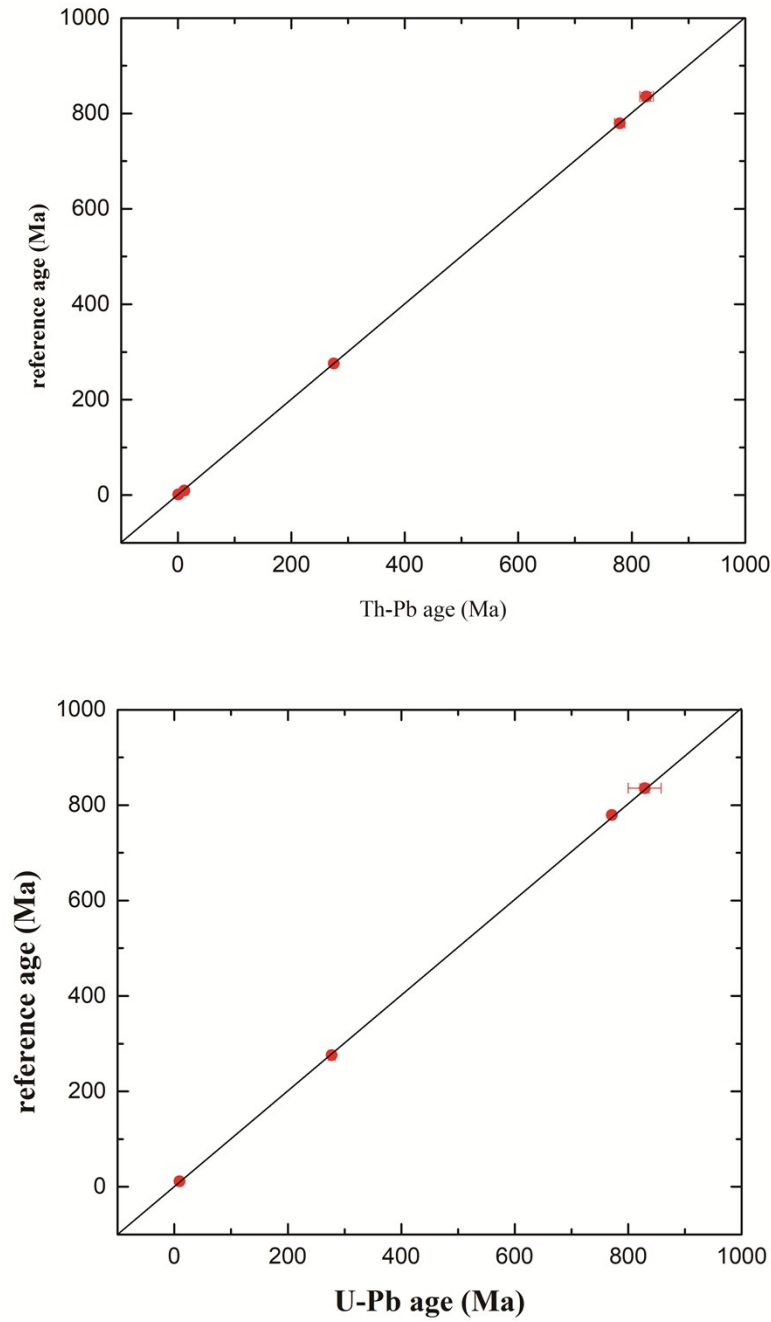


Fig. 2 U-Th-Pb ages vs. reference ages. **a** Th-Pb age validity. From left to right, the red points represent TOBA, Daibosatsu, CAP, main group of SQ-51 and older group of SQ-51 samples, respectively. The reference age of Daibosatsu allanites is substituted by the corresponding U-Pb age. **b** U-Pb age validity. From left to right, the red points represent Daibosatsu, CAP, main group of SQ-51 and older group of SQ-51 samples, respectively. The reference age of Daibosatsu allanites is substituted by the corresponding Th-Pb age.