

### Supplementary Table captions

**Table S1** Typical LA-ICP-MS instrumental parameters for U-Pb dating and chemical mapping of columbite-group minerals

**Table S2** Chemical compositions of the studied homogenous samples by EPMA

**Table S3** Chemical compositions of the studied heterogeneous sample JEQ-2 by EPMA

**Table S4** U-Pb data for the studied homogenous samples corrected by Coltan139

**Table S5** U-Pb data for the studied heterogeneous sample JEQ-2 corrected by Coltan139

**Table S6** U-Pb data for the studied heterogeneous sample JEQ-2 corrected by CT1

