Supplementary table 1: Settings for the instruments used in the geochronological Laboratory (GeoPlasmaLab Dresden) of the Senckenberg Naturhistorische Sammlungen Dresden, (Excimer Laser, ASI RESOlution SE S155) and (ICP-MS, Thermo Fisher, Element 2 XR).

ICP-MS	Finnigan Element 2 XR
Forward Power	1400 W
Gas flow rate	15.0 l min^{-1} (plasma) 1.07 l min^{-1} (aux)
Scan mode	E-scan
Scanned masses	202, 204, 206, 207, 208, 232, 235, 238
Mass resolution	300
Dead time	18 ns
Oxide UO^+/U^+	< 1%
Dwell time	4 ms
Settling time	≤ 1 ms/amu
Number of scans	1500
Background	15 s
Ablation time	30 s
Integration time	1.4 s (=25 scans)

Laser system	ASI RESOlution SE S155, excimer
Nominal spot diameter	35 µm (unknowns) 35 µm (standards)
Carrier gas	0.06 l min^{-1} N_2 0.56 l min^{-1} He 0.83 l min^{-1} Ar
Laser settings	6 Hz, 5 mJ, 1.8-2.1 J · cm^{-2}
Drill speed (DS) / Raster scan speed (RSS)	~ 0.5 µm/s (DS)
Effective cell volume	c. 1 cm^3
Sensitivity (GJ-1)	$6 \cdot 10^6$ counts/pg U