



Figure S1. BSE images of monazite textures in sample (a-c) EY152A-Shimokuhara granite and (d-g) EY140A-Namera granite. (a) Large monazite surrounded by Aln, Ap, Xtm and Th-U phase next to chlorite. Inset shows primary sector zoning. (b) Subhedral monazite in contact with Zrn and Th-U phase. Inset highlights the presence of cracks and holes at the rim. (c) Skeletal monazite intergrown with Ap, and peripheral Aln and Th-U phases. (d) Matrix monazite next to zoned zircon. Inset shows the primary oscillatory zoning cross-cut by BSE-dark secondary domains with inclusions and holes. (e) Matrix monazite with primary and secondary domains. (f) Monazite included in Kfs, with inclusions of Xtm and Zrn in the secondary domains. (g) Monazite inside Bt, with an Si-rich inclusion in the secondary domain.