Supporting Text S3: The potential importance of ubiquitin ligases in reticulocyte development

Cullin-RING complexes constitute the largest class of ubiquitin ligases [1], and ubiquitylation is known to play an important role in mitophagy of damaged mitochondria, which involves recruitment of the E3 ubiquitin ligase PARK2 (parkin) [2]. While the role of ubiquitylation appears less well-studied in reticulocyte development, it is known to involve the ubiquitin-like protein LC3 [2], encoded by the gene MAP1LC3A. The DMAP dataset did not contain measurements for PARK2, nor for MAP1LC3A. However, LC3 is known to directly interact with SQSTM [3], one of the genes in the autophagy signature. The 18 genes in the ULC signature discovered by GO-PCA could therefore provide an opportunity for further research into the role of ubiquitin ligases in mitophagy.

References