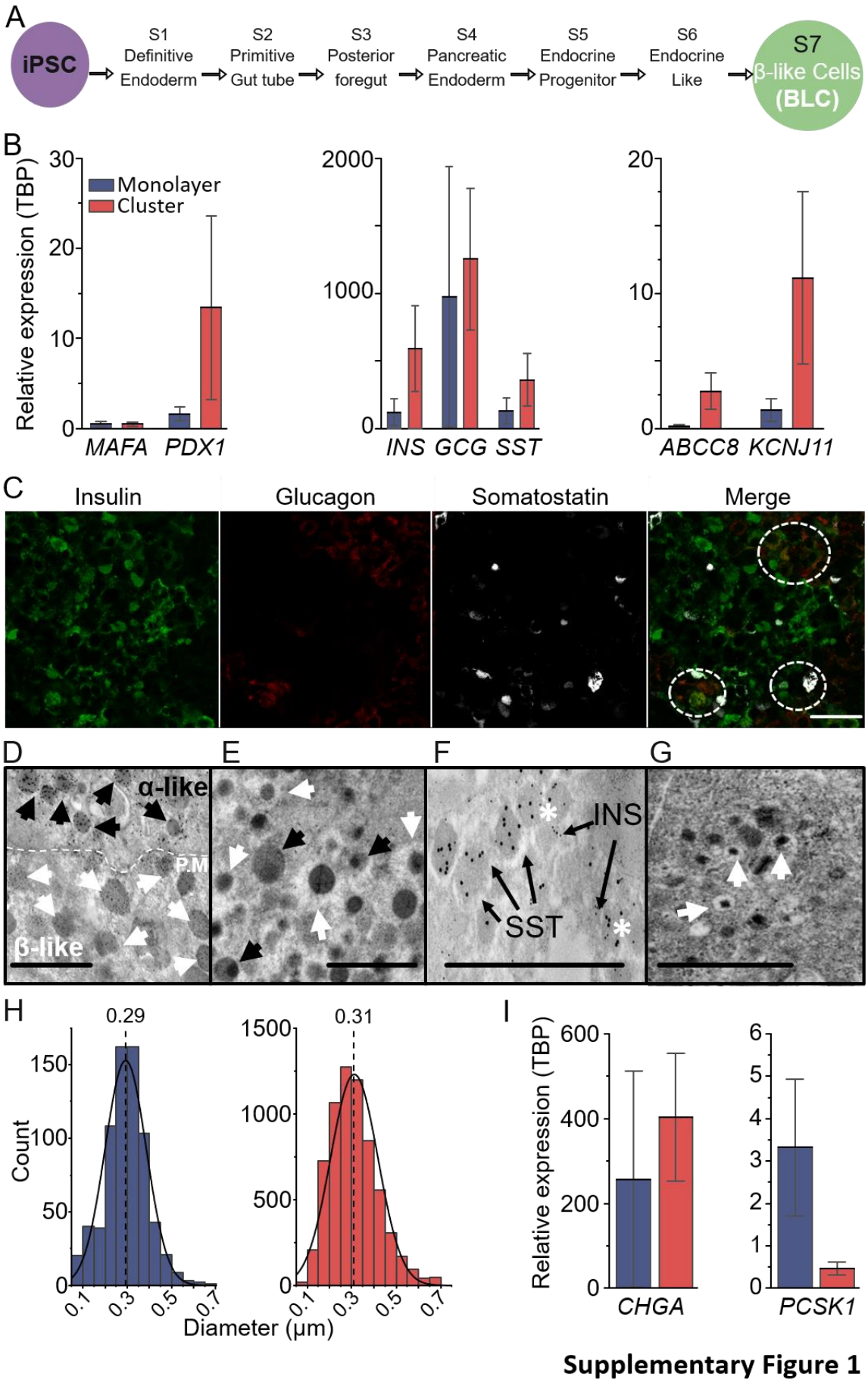

Supplementary Figure 1

Supplementary Figure 1: Overview of the characterisation of iPSC derived BLCs. A. iPSC were derived following the 25-day differentiation protocol. **B.** RT-qPCR data shows variability in the expressions of differentiation markers (left, n_{cl}=8, n_{mono}=4), pancreatic hormones (centre, n_{cl}=8, n_{mono}=4-5), and K_{ATP} channels subunits (right, n_{cl}=9, n_{mono}=4). **C.** Clusters (n=5) and monolayer (n=1) preparations were stained for pancreatic hormones: Insulin (green), Glucagon (red), and somatostatin (white). Polyhormonal cells are circled (dash circled) on the merge panel. Scale bar 50µm. **D-G**, ultrastructure of BLCs. **D.** Immunogold labelling of cells expressing either insulin (10nm gold particles, white arrowhead, BLC) or either glucagon (15nm gold particles, black arrowheads, α-like cell). PM, Plasma Membrane (dash line). **E.** Electron micrograph of a polyhormonal cell presenting heterogeneous vesicular structures, some typical of glucagon containing vesicles (black arrow heads) or of insulin containing vesicles (white arrowheads). **F.** Immunogold labelling of a polyhormonal cell positive for insulin (10nm gold particles) and somatostatin (SST, 15nm). The hormones could be detected in independent and within the same vesicles (white stars). **G.** Representative electron micrographs of cells containing structurally matured insulin vesicles (white arrows). Scale bar 1µm. **H.** Vesicle size distribution in clusters and monolayers (n_{mono}=713 and n_{cl}=6532 vesicles). **I.** BLCs express components of the trafficking pathway *CHGA* (left), component of insulin maturation *PCSK1*(right) (n_{cl}=6, n_{mono}=3).