

ESM Table 3: List of significant enriched KEGGs terms (adjusted p-value < 0.05) classified as up regulated in islets either overexpressing Pax4 or Pax4R129W.

| Pax4 versus Control | | Pax4R129W versus Control | |
|--|---------------------------|---|---------------------------|
| KEGG Term | -log10 (adjusted p-value) | KEGG Term | -log10 (adjusted p-value) |
| Protein processing in endoplasmic reticulum | 8.32 | Neuroactive ligand-receptor interaction | 7.85 |
| Lysosome | 6.43 | Cardiac muscle contraction | 2.62 |
| Steroid biosynthesis | 6.43 | Parkinson's disease | 1.49 |
| Cell cycle | 5.93 | Oxidative phosphorylation | 1.42 |
| Pyrimidine metabolism | 4.38 | | |
| Glycosylphosphatidylinositol (GPI)-anchor biosynthesis | 4.34 | | |
| B cell receptor signaling pathway | 3.69 | | |
| Antigen processing and presentation | 3.38 | | |
| Spliceosome | 3.38 | | |
| Aminoacyl-tRNA biosynthesis | 3.21 | | |
| DNA replication | 2.29 | | |
| Cysteine and methionine metabolism | 2.28 | | |
| Fc gamma R-mediated phagocytosis | 2.27 | | |
| Hepatitis C | 2.27 | | |
| Phagosome | 2.27 | | |
| MAPK signaling pathway | 2.27 | | |
| Glutathione metabolism | 2.19 | | |
| RNA transport | 2.08 | | |
| Biosynthesis of unsaturated fatty acids | 2.08 | | |
| Glycosaminoglycan degradation | 1.97 | | |
| Phenylalanine metabolism | 1.85 | | |
| Thyroid cancer | 1.85 | | |
| N-Glycan biosynthesis | 1.85 | | |
| Leishmaniasis | 1.76 | | |
| Fc epsilon RI signaling pathway | 1.73 | | |
| Prion diseases | 1.73 | | |
| One carbon pool by folate | 1.71 | | |
| Insulin signaling pathway | 1.68 | | |
| Endocytosis | 1.66 | | |
| Glycerophospholipid metabolism | 1.63 | | |
| Chronic myeloid leukemia | 1.63 | | |
| Wnt signaling pathway | 1.63 | | |
| Neurotrophin signaling pathway | 1.61 | | |
| Purine metabolism | 1.61 | | |
| Osteoclast differentiation | 1.61 | | |
| Rheumatoid arthritis | 1.56 | | |
| p53 signaling pathway | 1.55 | | |
| Drug metabolism - other enzymes | 1.50 | | |
| Toxoplasmosis | 1.47 | | |
| Proteasome | 1.43 | | |
| Glycolysis / Gluconeogenesis | 1.43 | | |
| Pentose phosphate pathway | 1.42 | | |
| Jak-STAT signaling pathway | 1.42 | | |
| Mismatch repair | 1.36 | | |
| Citrate cycle (TCA cycle) | 1.36 | | |
| Nucleotide excision repair | 1.35 | | |
| Acute myeloid leukemia | 1.35 | | |