Supporting Table S1: Canonical pathways highly expressed in human and mouse CPE

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| **Major functionalities**  | **Components of major functionalities per species** |
|  | **Human** | **Mouse** | **Both** |
| **Actin cytoskeletal function** |  | - Actin cytoskeleton signaling- Regulation of actin-based motility by Rho- Actin nucleation by ARP-WASO complex | - RhoGDI signaling- RhoA signaling- Signaling by Rho family GTPase |
| **Epithelial junctions** |  | - Germ cell-sertoli cell junction signaling | - Remodeling of epithelial adherens junctions- Epithelial adherens junction signaling |
| **Vesicle mediated transport**  |  | - Clathrin-mediated endocytosis signaling | - Caveolar-mediated endocytosis signaling |
| **Oxidative stress** |  |  | - Mitochondrial dysfunction- NRF2-mediated oxidative stress response- Hypoxia signaling in the cardiovascular system |
| **Immunological function** | - Antigen presentation  |  | - Protein ubiquitination  |
| **Endocrine signaling/metabolism** |  | - Ephrin receptor signaling- Aldosterone signaling in epithelial cells- Estrogen receptor signaling- Androgen signaling- VEGF signaling- Fatty acid beta-oxidation I- TCA cycle II (Eukaryotic) | - Glucocorticoid receptor signaling- Protein kinase A signaling |
| **Basic cellular (dys)functions** | - Aryl hydrocarbon receptor signaling- Polyamine regulation in colon cancer | - PI3K/AKT signaling- PTEN signaling- ILK signaling- Integrin signaling- IGF-1 signaling- 14-3-3-mediated signaling- ERK/MAPK signaling- Huntington’s disease signaling | - EIF2 signaling- Regulation of eIF4 and p70S6K signaling- mTOR signaling- Breast cancer regulation by stathmin1 |
| **Development**  |  | - Mouse embryonic stem cell pluripotency |  |