

Table S11. Disease and function networks identified by IPA.

Top five disease and function networks associated with differentially expressed genes as identified by IPA in the comparisons of datasets.

CKCS vs Normal
1. Cell death and survival, cell cycle, cellular movement 2. Cardiovascular development and function, cell morphology, organ morphology 3. Cardiovascular disease, cell death and survival, connective tissue disorders 4. DNA replication, recombination and repair, cellular movement, cellular assembly and organisation 5. Connective tissue disorders, organismal injury and abnormalities, skeletal and muscular disorders
CKCS vs non-CKCS
1. Skeletal and muscle disorders, developmental disorder, hereditary disorder 2. Carbohydrate metabolism, energy production, small molecule biochemistry 3. Lipid metabolism, small molecule biochemistry, molecular transport 4. Cellular development, cellular growth and proliferation, organ development 5. Cellular function and maintenance, cardiovascular health, hereditary disorder
All diseased vs Normal
1. Cancer, organismal injury and abnormalities, reproductive system disease 2. Dermatological diseases and conditions 3. Gastrointestinal disease 4. Skeletal and Muscular System Development and Function 5. Endocrine System Disorders
Non-CKCS vs Normal
1. Organismal injury and abnormalities, renal and urologic, behaviour 2. Cancer, organismal injury and abnormalities, reproductive system disease 3. Cell morphology, cellular movement, hair and skin development and function 4. Skeletal and muscular system development, cardiovascular system development and function, organ development 5. Cell-to-cell signalling and interaction, tissue development, cardiovascular disease

Figure S2. Graphical representation of a disease and function network detected by IPA. Diagram shows the *Skeletal and Muscular Disorders and Developmental Disorder and Hereditary Disorder* network detected when comparing CKCS and non-CKCS. Genes are shown in their protein cellular location with red indicating up-regulation, green down-regulation and un-coloured showing no change in the dataset.

