**Stage 2 Genes Upregulated**

DTHD1, also called Death Domain Containing 1, is a gene that plays a role in the creation of complexes in signaling pathways and those for programmed cell death.

EMILIN2, or Elastin Microfibril Interfacer 2, is a gene whose functional product may be in charge of the anchorage of smooth muscle cells to elastic fibers, and may also participate in the process of forming these elastic fibers, and in the regulation of vessel assembly.

PI16, known as Peptidase Inhibitor 16, is a gene speculated to be involved in the downregulation of peptidase activity. Its functional product may serve as a marker after prostatectomy for prostate cancer.

C4orf45, known as Chromosome 4 Open Reading Frame 45, is a protein-coding gene with an unclear biological function. It is speculated to be involved in cellular processes based on computational annotations but lacks experimental validation. Its expression and potential roles in disease or normal physiology have not been characterized.

FAM180B, called Family With Sequence Similarity 180 Member B, is a Protein Coding gene which is predicted to be an integral membrane protein, and is associated with Borderline Leprosy and Mosaic Variegated Aneuploidy Syndrome.

POU3F4, known as POU Class 3 Homeobox 4, is a gene that codes for a POU-III neural transcription factor class member. Its functional product is believed to be take part in inducing the differentiation of striatal neuron-precursors by mediating epigenetic signals.

**Stage 2 Genes Downregulated**

TBX5, or T-Box Transcription Factor TBX5, is a gene whose functional product is involved in regulating the transcription of various genes and is plays a role in the formation of the heart and limb patterns.

IFITM1, or Interferon Induced Transmembrane Protein 1, is a Protein Coding gene that helps IFN-gamma inhibit proliferation by stopping the Map Kinase/ERK from being activated or by preventing the growth of the cell in G1 phase with help from p53.

TNN, or Tenascin N, is a gene whose expression is predicted to promote binding of integrin.

COL13A1, or Collagen Type XIII Alpha 1 Chain, is a gene that is important in the binding of one cell to another, and cells to the extracellular matrix.

IFITM3, or Interferon Induced Transmembrane Protein 3, is a Protein Coding gene whose gene product inhibits the entry of viruses to the host cell cytoplasm by preventing viral fusion with cholesterol depleted endosomes. The gene product may inactivate new enveloped viruses which buds out of the infected cell, by letting them go out with a cholesterol depleted membrane.

LAMC3, or Laminin Subunit Gamma 3, is a protein-coding gene whose gene product bind to cells via a high affinity receptor, and is thought to mediate the attachment, migration and organization of cells into tissues during embryonic development by interacting with other extracellular matrix components.