**Supplemental Table S13.** Functional enrichment analysis of DE genes in subpopulation four

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| GO-Description | P-value | Corrected P | Number of genesa |
| Multicellular organismal development | 5.2 x 10-7 | 9.1 x 10-5 | 306 |
| System development | 5.7 x 10-7 | 9.5 x 10-5 | 257 |
| Nervous system development | 3.2 x 10-6 | 4.9 x 10-5 | 136 |
| Respiratory tube development | 2.7 x 10-5 | 2.8 x 10-3 | 22 |
| Developmental process | 2.7 x 10-5 | 2.8 x 10-3 | 317 |
| Respiratory system development | 2.9 x 10-5 | 2.9 x 10-3 | 23 |
| Gland development | 2.9 x 10-5 | 2.9 x 10-3 | 33 |
| Organ development | 4.0 x 10-5 | 3.6 x 10-3 | 189 |
| Anatomical structure morphogenesis | 4.3 x 10-5 | 3.7 x 10-3 | 136 |
| Lung development | 5.4 x 10-5 | 4.5 x 10-3 | 21 |
| Signaling | 8.8 x 10-5 | 7.3 x 10-3 | 304 |
| Regulation of developmental process | 1.3 x 10-4 | 9.8 x 10-3 | 93 |
| Cell differentiation | 1.5 x 10-4 | 1.2 x 10-2 | 174 |
| Gastrulation | 1.8 x 10-4 | 1.3 x 10-2 | 17 |
| Mesoderm formation | 1.8 x 10-4 | 1.3 x 10-2 | 11 |
| Establishment or maintenance of cell polarity | 1.9 x 10-4 | 1.3 x 10-2 | 13 |
| Organ morphogenesis | 1.9 x 10-4 | 1.3 x 10-2 | 77 |
| Negative regulation of activin receptor signaling pathway | 2.0 x 10-4 | 1.4 x 10-2 | 4 |
| Formation of primary germ layer | 2.1 x 10-4 | 1.4 x 10-2 | 12 |
| Skeletal system development | 2.2 x 10-4 | 1.4 x 10-2 | 46 |
| Cellular developmental process | 2.3 x 10-4 | 1.4 x 10-2 | 177 |
| Neurogenesis | 2.3 x 10-4 | 1.4 x 10-2 | 77 |
| Morphogenesis of a branching structure | 2.5 x 10-4 | 1.5 x 10-2 | 22 |
| Embryonic development | 2.6 x 10-4 | 1.5 x 10-2 | 73 |
| Cell development | 2.8 x 10-4 | 1.6 x 10-2 | 76 |
| Regulation of activin receptor signaling pathway | 2.9 x 10-4 | 1.6 x 10-2 | 6 |
| Anatomical structure formation involved in morphogenesis | 2.9 x 10-4 | 1.6 x 10-2 | 50 |
| Mesoderm morphogenesis | 3.0 x 10-4 | 1.6 x 10-2 | 11 |
| Regulation of anatomical structure morphogenesis | 6.4 x 10-4 | 3.0 x 10-2 | 41 |
| Vasculature development | 6.6 x 10-4 | 3.0 x 10-2 | 38 |
| Branching morphogenesis of a tube | 7.7 x 10-4 | 3.4 x 10-2 | 17 |
| Blood vessel morphogenesis | 8.0 x 10-4 | 3.5 x 10-2 | 32 |
| Heart development | 8.7 x 10-4 | 3.7 x 10-2 | 32 |
| Generation of neurons | 8.9 x 10-4 | 3.8 x 10-2 | 70 |
| Tube development | 9.3 x 10-4 | 3.8 x 10-2 | 40 |
| Kidney development | 9.9 x 10-4 | 4.0 x 10-2 | 18 |
| Cell morphogenesis involved in differentiation | 1.1 x 10-4 | 4.0 x 10-2 | 34 |
| Pattern specification process | 1.1 x 10-4 | 4.2 x 10-2 | 37 |
| Blood vessel development | 1.4 x 10-4 | 4.7 x 10-2 | 36 |
| Renal system development | 1.4 x 10-3 | 4.7 x 10-2 | 18 |
| Tissue morphogenesis | 1.4 x 10-3 | 4.8 x 10-2 | 37 |
| Protein amino acid autophosphorylation | 1.5 x 10-3 | 4.8 x 10-2 | 15 |
| Muscle organ development | 1.5 x 10-3 | 4.9 x 10-2 | 31 |
| Anterior/posterior pattern formation | 1.6 x 10-3 | 5.0 x 10-2 | 23 |

aNumber of genes (from 1,160 DE genes) found in pathways