

Table S1A: Congruent GO Pathways Upregulated for CTG-0331, CTG-0771 and Fuji 250mg/kg

PathwayID	PathwayName
GO:2001016	positive regulation of skeletal muscle cell differentiation
GO:2000648	positive regulation of stem cell proliferation
GO:2000352	negative regulation of endothelial cell apoptotic process
GO:2000351	regulation of endothelial cell apoptotic process
GO:2000147	positive regulation of cell motility
GO:2000146	negative regulation of cell motility
GO:2000145	regulation of cell motility
GO:2000021	regulation of ion homeostasis
GO:1903034	regulation of response to wounding
GO:1902533	positive regulation of intracellular signal transduction
GO:1902531	regulation of intracellular signal transduction
GO:1901701	cellular response to oxygen-containing compound
GO:1901700	response to oxygen-containing compound
GO:1901699	cellular response to nitrogen compound
GO:1901698	response to nitrogen compound
GO:1900542	regulation of purine nucleotide metabolic process
GO:0098647	collagen beaded filament
GO:0098644	complex of collagen trimers
GO:0098602	single organism cell adhesion
GO:0098552	side of membrane
GO:0098531	transcription factor activity, direct ligand regulated sequence-specific DNA binding
GO:0097485	neuron projection guidance
GO:0097306	cellular response to alcohol
GO:0090287	regulation of cellular response to growth factor stimulus
GO:0090257	regulation of muscle system process
GO:0090132	epithelium migration
GO:0090101	negative regulation of transmembrane receptor protein serine/threonine kinase signaling pathway
GO:0090092	regulation of transmembrane receptor protein serine/threonine kinase signaling pathway
GO:0090090	negative regulation of canonical Wnt signaling pathway
GO:0080134	regulation of response to stress
GO:0072577	endothelial cell apoptotic process
GO:0072511	divalent inorganic cation transport
GO:0072507	divalent inorganic cation homeostasis
GO:0072359	circulatory system development
GO:0072358	cardiovascular system development
GO:0072091	regulation of stem cell proliferation
GO:0072089	stem cell proliferation
GO:0072073	kidney epithelium development
GO:0072001	renal system development
GO:0071944	cell periphery
GO:0071774	response to fibroblast growth factor
GO:0071694	maintenance of protein location in extracellular region
GO:0071692	protein localization to extracellular region
GO:0071495	cellular response to endogenous stimulus
GO:0071417	cellular response to organonitrogen compound
GO:0071407	cellular response to organic cyclic compound
GO:0071396	cellular response to lipid
GO:0071363	cellular response to growth factor stimulus
GO:0071310	cellular response to organic substance
GO:0071300	cellular response to retinoic acid
GO:0071229	cellular response to acid chemical

GO:0070887 cellular response to chemical stimulus
GO:0070848 response to growth factor
GO:0070482 response to oxygen levels
GO:0070169 positive regulation of biomineral tissue development
GO:0070167 regulation of biomineral tissue development
GO:0065009 regulation of molecular function
GO:0061564 axon development
GO:0061448 connective tissue development
GO:0061061 muscle structure development
GO:0061053 somite development
GO:0061041 regulation of wound healing
GO:0061035 regulation of cartilage development
GO:0060828 regulation of canonical Wnt signaling pathway
GO:0060740 prostate gland epithelium morphogenesis
GO:0060575 intestinal epithelial cell differentiation
GO:0060562 epithelial tube morphogenesis
GO:0060560 developmental growth involved in morphogenesis
GO:0060541 respiratory system development
GO:0060538 skeletal muscle organ development
GO:0060537 muscle tissue development
GO:0060512 prostate gland morphogenesis
GO:0060485 mesenchyme development
GO:0060429 epithelium development
GO:0060402 calcium ion transport into cytosol
GO:0060401 cytosolic calcium ion transport
GO:0060349 bone morphogenesis
GO:0060348 bone development
GO:0060341 regulation of cellular localization
GO:0060291 long-term synaptic potentiation
GO:0060284 regulation of cell development
GO:0060173 limb development
GO:0060089 molecular transducer activity
GO:0060070 canonical Wnt signaling pathway
GO:0060047 heart contraction
GO:0060021 palate development
GO:0060004 reflex
GO:0055123 digestive system development
GO:0055117 regulation of cardiac muscle contraction
GO:0055074 calcium ion homeostasis
GO:0055002 striated muscle cell development
GO:0055001 muscle cell development
GO:0051960 regulation of nervous system development
GO:0051899 membrane depolarization
GO:0051716 cellular response to stimulus
GO:0051674 localization of cell
GO:0051336 regulation of hydrolase activity
GO:0051272 positive regulation of cellular component movement
GO:0051271 negative regulation of cellular component movement
GO:0051270 regulation of cellular component movement
GO:0051247 positive regulation of protein metabolic process
GO:0051241 negative regulation of multicellular organismal process
GO:0051239 regulation of multicellular organismal process
GO:0051216 cartilage development

GO:0051174 regulation of phosphorus metabolic process
GO:0051130 positive regulation of cellular component organization
GO:0051093 negative regulation of developmental process
GO:0051049 regulation of transport
GO:0051046 regulation of secretion
GO:0050920 regulation of chemotaxis
GO:0050878 regulation of body fluid levels
GO:0050839 cell adhesion molecule binding
GO:0050801 ion homeostasis
GO:0050795 regulation of behavior
GO:0050794 regulation of cellular process
GO:0050790 regulation of catalytic activity
GO:0050789 regulation of biological process
GO:0050769 positive regulation of neurogenesis
GO:0050767 regulation of neurogenesis
GO:0050730 regulation of peptidyl-tyrosine phosphorylation
GO:0050680 negative regulation of epithelial cell proliferation
GO:0050679 positive regulation of epithelial cell proliferation
GO:0050678 regulation of epithelial cell proliferation
GO:0050673 epithelial cell proliferation
GO:0048878 chemical homeostasis
GO:0048871 multicellular organismal homeostasis
GO:0048870 cell motility
GO:0048858 cell projection morphogenesis
GO:0048856 anatomical structure development
GO:0048839 inner ear development
GO:0048812 neuron projection morphogenesis
GO:0048771 tissue remodeling
GO:0048762 mesenchymal cell differentiation
GO:0048742 regulation of skeletal muscle fiber development
GO:0048738 cardiac muscle tissue development
GO:0048736 appendage development
GO:0048729 tissue morphogenesis
GO:0048706 embryonic skeletal system development
GO:0048705 skeletal system morphogenesis
GO:0048704 embryonic skeletal system morphogenesis
GO:0048701 embryonic cranial skeleton morphogenesis
GO:0048667 cell morphogenesis involved in neuron differentiation
GO:0048646 anatomical structure formation involved in morphogenesis
GO:0048598 embryonic morphogenesis
GO:0048589 developmental growth
GO:0048585 negative regulation of response to stimulus
GO:0048584 positive regulation of response to stimulus
GO:0048583 regulation of response to stimulus
GO:0048568 embryonic organ development
GO:0048562 embryonic organ morphogenesis
GO:0048545 response to steroid hormone
GO:0048534 hematopoietic or lymphoid organ development
GO:0048514 blood vessel morphogenesis
GO:0048468 cell development
GO:0048011 neurotrophin TRK receptor signaling pathway
GO:0048009 insulin-like growth factor receptor signaling pathway
GO:0046903 secretion

GO:0046889 positive regulation of lipid biosynthetic process
GO:0046849 bone remodeling
GO:0046649 lymphocyte activation
GO:0045937 positive regulation of phosphate metabolic process
GO:0045913 positive regulation of carbohydrate metabolic process
GO:0045834 positive regulation of lipid metabolic process
GO:0045785 positive regulation of cell adhesion
GO:0045765 regulation of angiogenesis
GO:0045732 positive regulation of protein catabolic process
GO:0045664 regulation of neuron differentiation
GO:0045661 regulation of myoblast differentiation
GO:0045637 regulation of myeloid cell differentiation
GO:0045598 regulation of fat cell differentiation
GO:0045597 positive regulation of cell differentiation
GO:0045596 negative regulation of cell differentiation
GO:0045444 fat cell differentiation
GO:0045321 leukocyte activation
GO:0045202 synapse
GO:0045121 membrane raft
GO:0044708 single-organism behavior
GO:0044707 single-multicellular organism process
GO:0044700 single organism signaling
GO:0044459 plasma membrane part
GO:0044425 membrane part
GO:0044420 extracellular matrix component
GO:0044304 main axon
GO:0044057 regulation of system process
GO:0043588 skin development
GO:0043583 ear development
GO:0043567 regulation of insulin-like growth factor receptor signaling pathway
GO:0043410 positive regulation of MAPK cascade
GO:0043408 regulation of MAPK cascade
GO:0043406 positive regulation of MAP kinase activity
GO:0043405 regulation of MAP kinase activity
GO:0043401 steroid hormone mediated signaling pathway
GO:0043112 receptor metabolic process
GO:0043062 extracellular structure organization
GO:0043034 costamere
GO:0043009 chordate embryonic development
GO:0042995 cell projection
GO:0042886 amide transport
GO:0042593 glucose homeostasis
GO:0042592 homeostatic process
GO:0042476 odontogenesis
GO:0042474 middle ear morphogenesis
GO:0042472 inner ear morphogenesis
GO:0042471 ear morphogenesis
GO:0042330 taxis
GO:0042327 positive regulation of phosphorylation
GO:0042221 response to chemical
GO:0042110 T cell activation
GO:0042063 gliogenesis
GO:0042060 wound healing

GO:0040017 positive regulation of locomotion
GO:0040013 negative regulation of locomotion
GO:0040012 regulation of locomotion
GO:0040011 locomotion
GO:0040008 regulation of growth
GO:0040007 growth
GO:0038179 neurotrophin signaling pathway
GO:0036477 somatodendritic compartment
GO:0035987 endodermal cell differentiation
GO:0035947 regulation of gluconeogenesis by regulation of transcription from RNA polymerase II promoter
GO:0035637 multicellular organismal signaling
GO:0035556 intracellular signal transduction
GO:0035295 tube development
GO:0035282 segmentation
GO:0035239 tube morphogenesis
GO:0035113 embryonic appendage morphogenesis
GO:0035108 limb morphogenesis
GO:0035107 appendage morphogenesis
GO:0035023 regulation of Rho protein signal transduction
GO:0033993 response to lipid
GO:0033500 carbohydrate homeostasis
GO:0032990 cell part morphogenesis
GO:0032989 cellular component morphogenesis
GO:0032940 secretion by cell
GO:0032879 regulation of localization
GO:0032870 cellular response to hormone stimulus
GO:0032844 regulation of homeostatic process
GO:0032526 response to retinoic acid
GO:0032501 multicellular organismal process
GO:0032331 negative regulation of chondrocyte differentiation
GO:0032330 regulation of chondrocyte differentiation
GO:0032319 regulation of Rho GTPase activity
GO:0032314 regulation of Rac GTPase activity
GO:0032270 positive regulation of cellular protein metabolic process
GO:0032101 regulation of response to external stimulus
GO:0031994 insulin-like growth factor I binding
GO:0031589 cell-substrate adhesion
GO:0031401 positive regulation of protein modification process
GO:0031346 positive regulation of cell projection organization
GO:0031344 regulation of cell projection organization
GO:0031331 positive regulation of cellular catabolic process
GO:0031329 regulation of cellular catabolic process
GO:0031325 positive regulation of cellular metabolic process
GO:0031226 intrinsic component of plasma membrane
GO:0031214 biomineral tissue development
GO:0031175 neuron projection development
GO:0031012 extracellular matrix
GO:0030888 regulation of B cell proliferation
GO:0030879 mammary gland development
GO:0030850 prostate gland development
GO:0030534 adult behavior
GO:0030510 regulation of BMP signaling pathway
GO:0030509 BMP signaling pathway

GO:0030501 positive regulation of bone mineralization
GO:0030500 regulation of bone mineralization
GO:0030425 dendrite
GO:0030336 negative regulation of cell migration
GO:0030335 positive regulation of cell migration
GO:0030334 regulation of cell migration
GO:0030326 embryonic limb morphogenesis
GO:0030324 lung development
GO:0030323 respiratory tube development
GO:0030282 bone mineralization
GO:0030278 regulation of ossification
GO:0030217 T cell differentiation
GO:0030198 extracellular matrix organization
GO:0030178 negative regulation of Wnt signaling pathway
GO:0030111 regulation of Wnt signaling pathway
GO:0030098 lymphocyte differentiation
GO:0030030 cell projection organization
GO:0023057 negative regulation of signaling
GO:0023056 positive regulation of signaling
GO:0023052 signaling
GO:0023051 regulation of signaling
GO:0023014 signal transduction by protein phosphorylation
GO:0022617 extracellular matrix disassembly
GO:0022612 gland morphogenesis
GO:0022610 biological adhesion
GO:0022604 regulation of cell morphogenesis
GO:0022603 regulation of anatomical structure morphogenesis
GO:0021954 central nervous system neuron development
GO:0021542 dentate gyrus development
GO:0021537 telencephalon development
GO:0019932 second-messenger-mediated signaling
GO:0019838 growth factor binding
GO:0019220 regulation of phosphate metabolic process
GO:0019216 regulation of lipid metabolic process
GO:0019199 transmembrane receptor protein kinase activity
GO:0018212 peptidyl-tyrosine modification
GO:0018108 peptidyl-tyrosine phosphorylation
GO:0016477 cell migration
GO:0016337 single organismal cell-cell adhesion
GO:0016055 Wnt signaling pathway
GO:0016049 cell growth
GO:0015833 peptide transport
GO:0014848 urinary tract smooth muscle contraction
GO:0014706 striated muscle tissue development
GO:0014031 mesenchymal cell development
GO:0010975 regulation of neuron projection development
GO:0010959 regulation of metal ion transport
GO:0010906 regulation of glucose metabolic process
GO:0010817 regulation of hormone levels
GO:0010811 positive regulation of cell-substrate adhesion
GO:0010810 regulation of cell-substrate adhesion
GO:0010769 regulation of cell morphogenesis involved in differentiation
GO:0010720 positive regulation of cell development

GO:0010676 positive regulation of cellular carbohydrate metabolic process
GO:0010675 regulation of cellular carbohydrate metabolic process
GO:0010648 negative regulation of cell communication
GO:0010647 positive regulation of cell communication
GO:0010646 regulation of cell communication
GO:0010634 positive regulation of epithelial cell migration
GO:0010632 regulation of epithelial cell migration
GO:0010631 epithelial cell migration
GO:0010629 negative regulation of gene expression
GO:0010604 positive regulation of macromolecule metabolic process
GO:0010595 positive regulation of endothelial cell migration
GO:0010594 regulation of endothelial cell migration
GO:0010562 positive regulation of phosphorus metabolic process
GO:0010464 regulation of mesenchymal cell proliferation
GO:0010463 mesenchymal cell proliferation
GO:0010243 response to organonitrogen compound
GO:0010033 response to organic substance
GO:0010001 glial cell differentiation
GO:0009986 cell surface
GO:0009968 negative regulation of signal transduction
GO:0009967 positive regulation of signal transduction
GO:0009966 regulation of signal transduction
GO:0009952 anterior/posterior pattern specification
GO:0009897 external side of plasma membrane
GO:0009896 positive regulation of catabolic process
GO:0009894 regulation of catabolic process
GO:0009893 positive regulation of metabolic process
GO:0009888 tissue development
GO:0009887 organ morphogenesis
GO:0009792 embryo development ending in birth or egg hatching
GO:0009790 embryo development
GO:0009755 hormone-mediated signaling pathway
GO:0009725 response to hormone
GO:0009719 response to endogenous stimulus
GO:0009653 anatomical structure morphogenesis
GO:0009611 response to wounding
GO:0009605 response to external stimulus
GO:0009214 cyclic nucleotide catabolic process
GO:0008285 negative regulation of cell proliferation
GO:0008201 heparin binding
GO:0008038 neuron recognition
GO:0008016 regulation of heart contraction
GO:0008015 blood circulation
GO:0007626 locomotory behavior
GO:0007610 behavior
GO:0007566 embryo implantation
GO:0007528 neuromuscular junction development
GO:0007519 skeletal muscle tissue development
GO:0007517 muscle organ development
GO:0007507 heart development
GO:0007492 endoderm development
GO:0007423 sensory organ development
GO:0007417 central nervous system development

GO:0007411 axon guidance
GO:0007389 pattern specification process
GO:0007369 gastrulation
GO:0007268 synaptic transmission
GO:0007267 cell-cell signaling
GO:0007266 Rho protein signal transduction
GO:0007178 transmembrane receptor protein serine/threonine kinase signaling pathway
GO:0007169 transmembrane receptor protein tyrosine kinase signaling pathway
GO:0007167 enzyme linked receptor protein signaling pathway
GO:0007166 cell surface receptor signaling pathway
GO:0007165 signal transduction
GO:0007155 cell adhesion
GO:0007154 cell communication
GO:0006942 regulation of striated muscle contraction
GO:0006937 regulation of muscle contraction
GO:0006935 chemotaxis
GO:0006928 movement of cell or subcellular component
GO:0006816 calcium ion transport
GO:0006140 regulation of nucleotide metabolic process
GO:0006112 energy reserve metabolic process
GO:0006109 regulation of carbohydrate metabolic process
GO:0005901 caveola
GO:0005887 integral component of plasma membrane
GO:0005886 plasma membrane
GO:0005615 extracellular space
GO:0005614 interstitial matrix
GO:0005604 basement membrane
GO:0005589 collagen type VI trimer
GO:0005578 proteinaceous extracellular matrix
GO:0005539 glycosaminoglycan binding
GO:0005520 insulin-like growth factor binding
GO:0005518 collagen binding
GO:0005509 calcium ion binding
GO:0005201 extracellular matrix structural constituent
GO:0005178 integrin binding
GO:0005158 insulin receptor binding
GO:0005109 frizzled binding
GO:0005102 receptor binding
GO:0004879 RNA polymerase II transcription factor activity, ligand-activated sequence-specific DNA binding
GO:0004871 signal transducer activity
GO:0004714 transmembrane receptor protein tyrosine kinase activity
GO:0004115 3',5'-cyclic-AMP phosphodiesterase activity
GO:0004114 3',5'-cyclic-nucleotide phosphodiesterase activity
GO:0004112 cyclic-nucleotide phosphodiesterase activity
GO:0003707 steroid hormone receptor activity
GO:0003015 heart process
GO:0003013 circulatory system process
GO:0003008 system process
GO:0003007 heart morphogenesis
GO:0003002 regionalization
GO:0002934 desmosome organization
GO:0002694 regulation of leukocyte activation
GO:0002682 regulation of immune system process

GO:0002520 immune system development
GO:0002286 T cell activation involved in immune response
GO:0002065 columnar/cuboidal epithelial cell differentiation
GO:0002062 chondrocyte differentiation
GO:0002053 positive regulation of mesenchymal cell proliferation
GO:0002028 regulation of sodium ion transport
GO:0002009 morphogenesis of an epithelium
GO:0001968 fibronectin binding
GO:0001965 G-protein alpha-subunit binding
GO:0001944 vasculature development
GO:0001935 endothelial cell proliferation
GO:0001934 positive regulation of protein phosphorylation
GO:0001837 epithelial to mesenchymal transition
GO:0001822 kidney development
GO:0001775 cell activation
GO:0001764 neuron migration
GO:0001756 somitogenesis
GO:0001755 neural crest cell migration
GO:0001706 endoderm formation
GO:0001704 formation of primary germ layer
GO:0001667 ameboidal-type cell migration
GO:0001655 urogenital system development
GO:0001654 eye development
GO:0001649 osteoblast differentiation
GO:0001568 blood vessel development
GO:0001558 regulation of cell growth
GO:0001525 angiogenesis
GO:0001503 ossification
GO:0001502 cartilage condensation
GO:0001501 skeletal system development
GO:0001227 transcriptional repressor activity, RNA polymerase II transcription regulatory region sequence-specific binding
GO:0001101 response to acid chemical
GO:0000982 transcription factor activity, RNA polymerase II core promoter proximal region sequence-specific binding
GO:0000904 cell morphogenesis involved in differentiation
GO:0000902 cell morphogenesis
GO:0000165 MAPK cascade
GO:0000122 negative regulation of transcription from RNA polymerase II promoter
GO:0060548 negative regulation of cell death
GO:0051246 regulation of protein metabolic process
GO:0051128 regulation of cellular component organization
GO:0048732 gland development
GO:0044763 single-organism cellular process
GO:0044699 single-organism process
GO:0043069 negative regulation of programmed cell death
GO:0043066 negative regulation of apoptotic process
GO:0042127 regulation of cell proliferation
GO:0016265 death
GO:0008283 cell proliferation
GO:2000113 negative regulation of cellular macromolecule biosynthetic process
GO:2000026 regulation of multicellular organismal development
GO:1902679 negative regulation of RNA biosynthetic process
GO:0097458 neuron part
GO:0097285 cell-type specific apoptotic process

GO:0072164 mesonephric tubule development
GO:0072163 mesonephric epithelium development
GO:0065008 regulation of biological quality
GO:0065007 biological regulation
GO:0051253 negative regulation of RNA metabolic process
GO:0051172 negative regulation of nitrogen compound metabolic process
GO:0051094 positive regulation of developmental process
GO:0050896 response to stimulus
GO:0050808 synapse organization
GO:0050793 regulation of developmental process
GO:0048869 cellular developmental process
GO:0048731 system development
GO:0048699 generation of neurons
GO:0048666 neuron development
GO:0048565 digestive tract development
GO:0048523 negative regulation of cellular process
GO:0048522 positive regulation of cellular process
GO:0048519 negative regulation of biological process
GO:0048518 positive regulation of biological process
GO:0048513 animal organ development
GO:0045934 negative regulation of nucleobase-containing compound metabolic process
GO:0045892 negative regulation of transcription, DNA-templated
GO:0045595 regulation of cell differentiation
GO:0044767 single-organism developmental process
GO:0043565 sequence-specific DNA binding
GO:0043005 neuron projection
GO:0042325 regulation of phosphorylation
GO:0032502 developmental process
GO:0031327 negative regulation of cellular biosynthetic process
GO:0031324 negative regulation of cellular metabolic process
GO:0030514 negative regulation of BMP signaling pathway
GO:0030182 neuron differentiation
GO:0030155 regulation of cell adhesion
GO:0030154 cell differentiation
GO:0022008 neurogenesis
GO:0019222 regulation of metabolic process
GO:0014070 response to organic cyclic compound
GO:0014033 neural crest cell differentiation
GO:0014032 neural crest cell development
GO:0010605 negative regulation of macromolecule metabolic process
GO:0010558 negative regulation of macromolecule biosynthetic process
GO:0009892 negative regulation of metabolic process
GO:0009890 negative regulation of biosynthetic process
GO:0008284 positive regulation of cell proliferation
GO:0008219 cell death
GO:0007409 axonogenesis
GO:0007399 nervous system development
GO:0007275 multicellular organism development
GO:0007162 negative regulation of cell adhesion
GO:0001936 regulation of endothelial cell proliferation
GO:0001932 regulation of protein phosphorylation
GO:0001823 mesonephros development
GO:0001657 ureteric bud development

GO:0001012 RNA polymerase II regulatory region DNA binding
GO:0000981 RNA polymerase II transcription factor activity, sequence-specific DNA binding
GO:0000977 RNA polymerase II regulatory region sequence-specific DNA binding