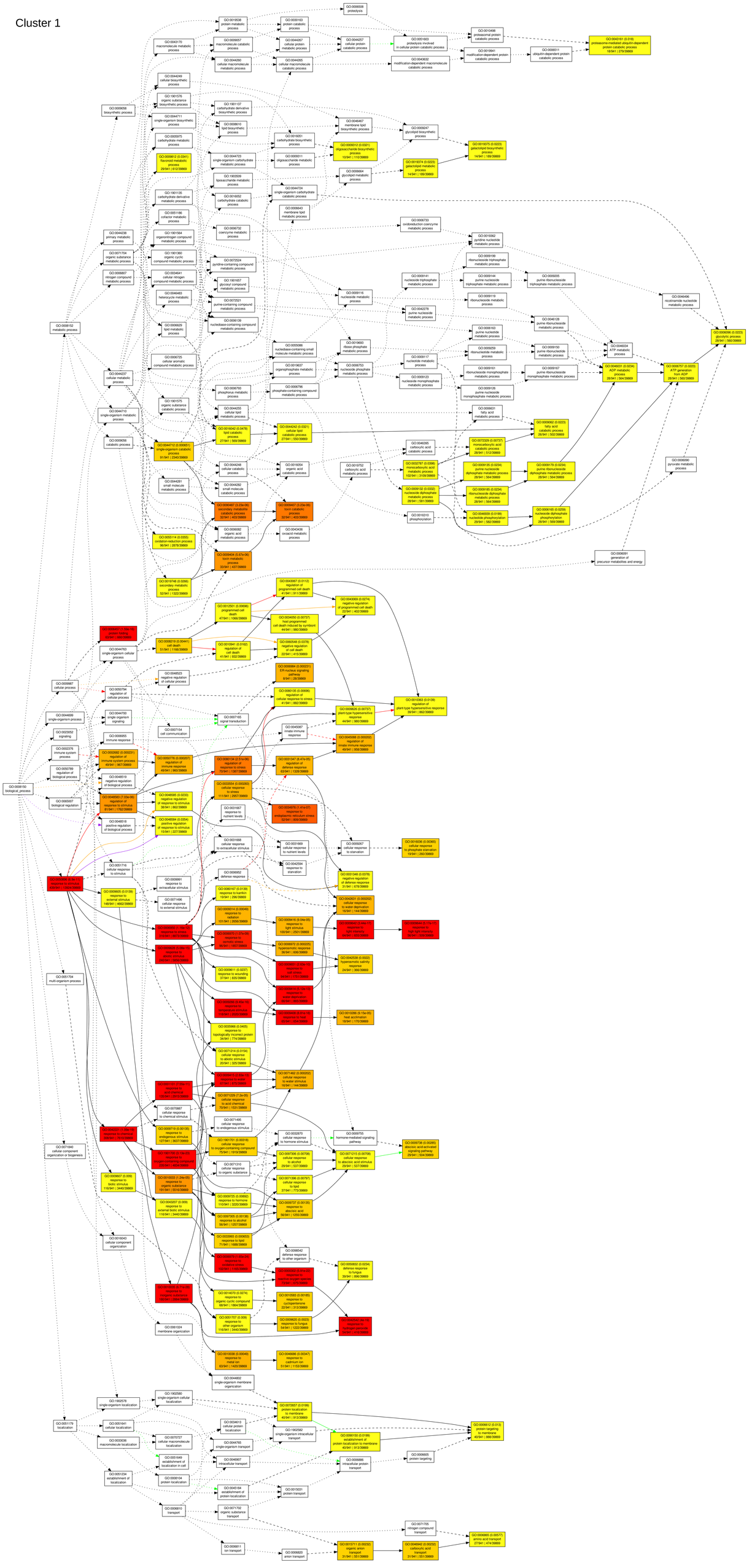
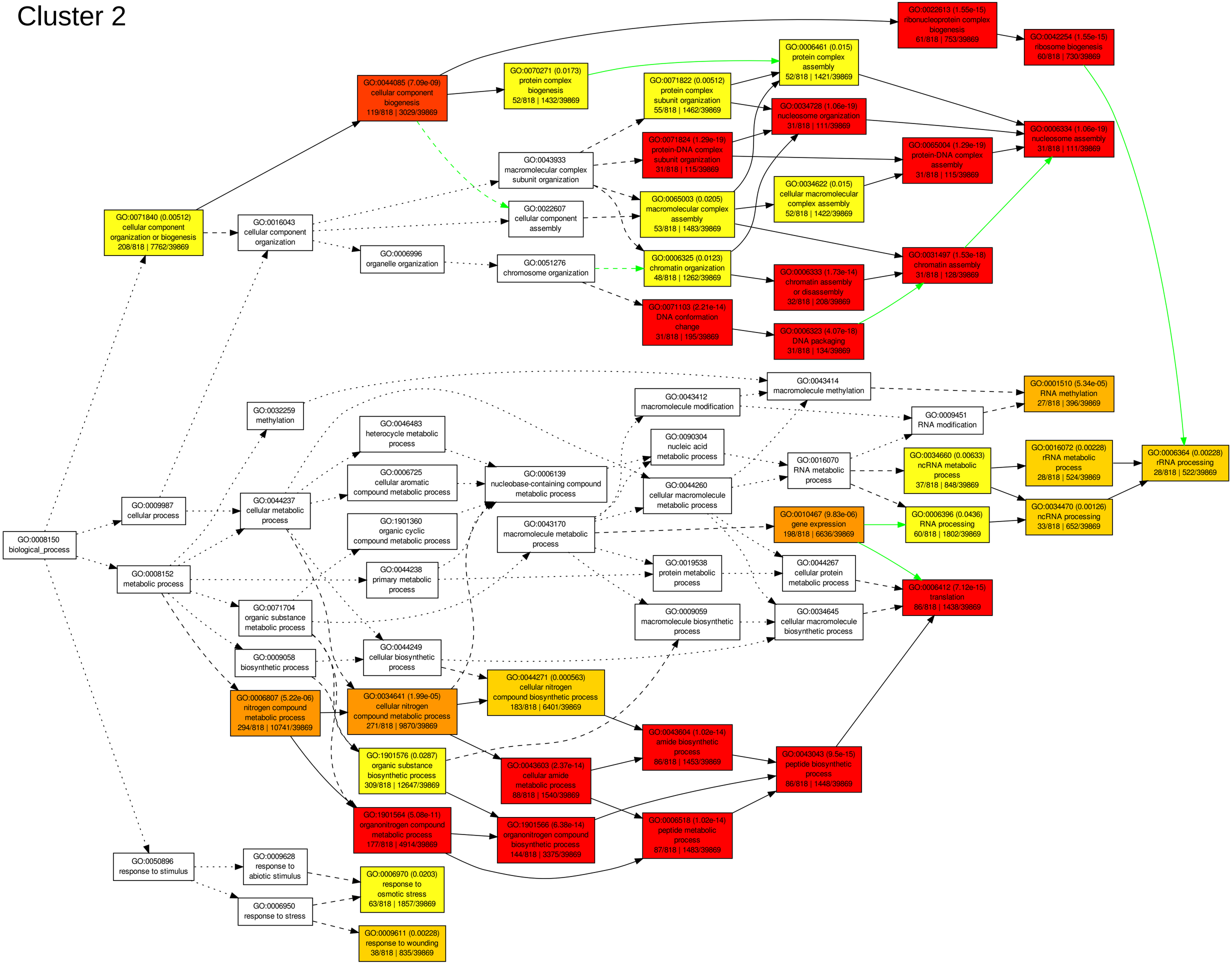
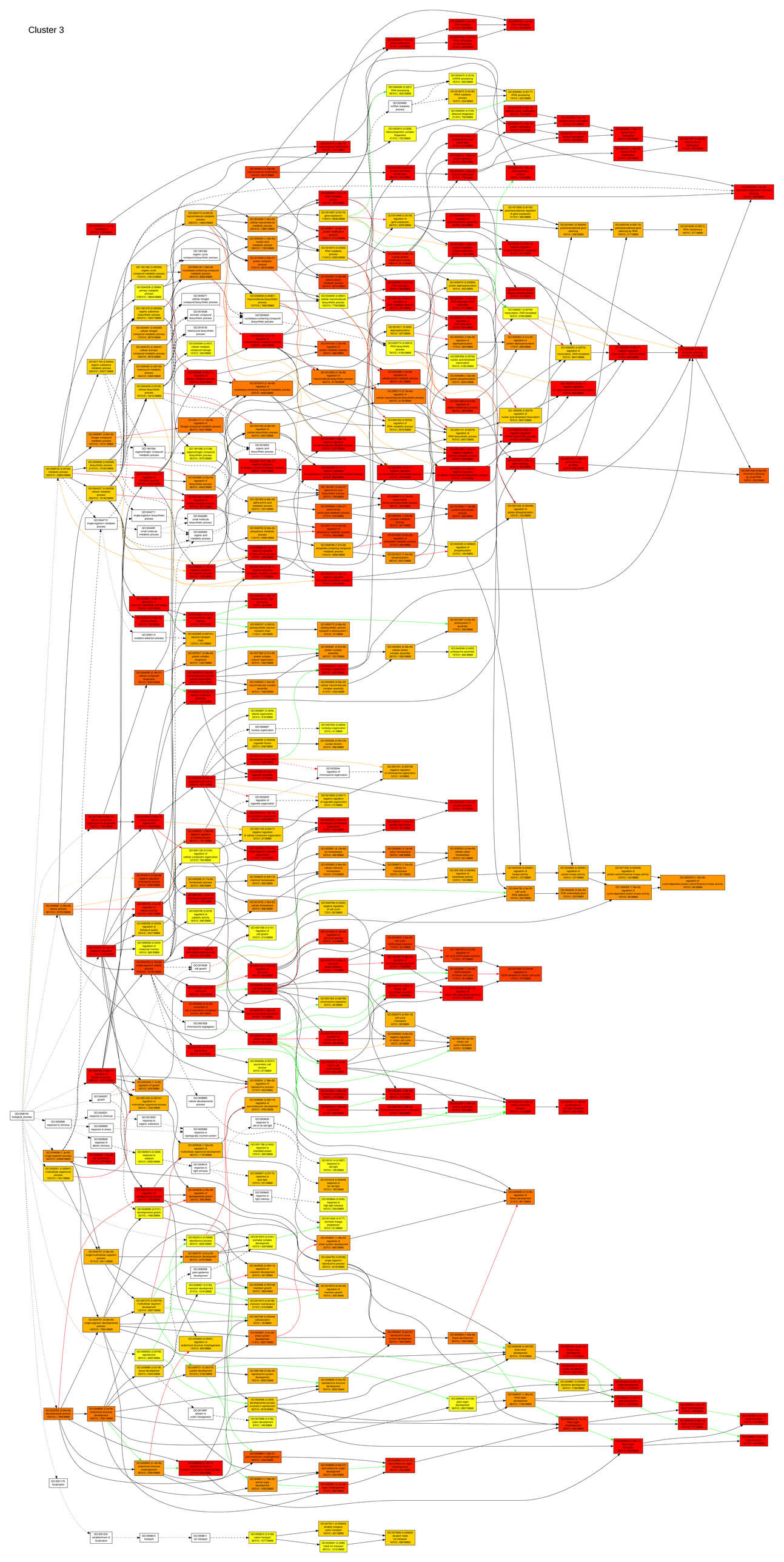
Cluster 1


GO:0008150 biological_process
GO:0008152 metabolic process
GO:0009058 biosynthetic process
GO:0044238 primary metabolic process
GO:0071704 organic substance metabolic process
GO:0006807 nitrogen compound metabolic process
GO:0044237 cellular metabolic process
GO:0044710 single-organism metabolic process
GO:0009056 catabolic process
GO:0044712 (0.00661) single-organism catabolic process 91/941 | 2340/39669
GO:0044763 single-organism cellular process
GO:0009987 cellular process
GO:0044699 single-organism process
GO:0032502 signaling
GO:0002376 immune system process
GO:0050789 regulation of biological process
GO:0065007 biological regulation
GO:0051179 multi-organism process
GO:0071840 cellular component organization or biogenesis
GO:0016043 cellular component organization
GO:0065008 regulation of biological quality
GO:0051704 multi-organism process
GO:0051641 cellular localization
GO:0033036 macromolecule localization
GO:0051234 establishment of localization
GO:0006810 transport
GO:0015711 (0.00230) organic anion transport 31/941 | 551/39669
GO:0006820 anion transport
GO:0006811 ion transport
GO:0006865 (0.00577) amino acid transport 27/941 | 479/39669
GO:0006612 (0.013) protein targeting to membrane 40/941 | 889/39669
GO:0006605 protein targeting
GO:0006886 intracellular protein transport
GO:0006913 nucleocytoplasmic transport
GO:0006606 (0.0223) glycolytic process 28/941 | 560/39669
GO:0006757 (0.0223) ATP generation from ADP 28/941 | 560/39669
GO:0046031 (0.0234) ADP metabolic process 28/941 | 564/39669
GO:0006090 pyruvate metabolic process
GO:0006091 generation of precursor metabolites and energy
GO:0006950 response to stress 1519/941 | 36373/39669
GO:0006979 (2.56e-11) response to oxidative stress 35/941 | 1150/39669
GO:0006970 (1.07e-09) response to osmotic stress 45/941 | 1957/39669
GO:0006928 (3.09e-15) movement of cell or subcellular component 369/941 | 9555/39669
GO:0009628 (2.51e-09) response to abiotic stimulus 369/941 | 9555/39669
GO:0009605 (0.0139) response to external stimulus 148/941 | 4602/39669
GO:0009991 response to extracellular stimulus
GO:0071496 cellular response to external stimulus
GO:0051716 cellular response to stimulus
GO:0050896 response to stimulus
GO:0006952 defense response
GO:0006810 transport
GO:0015031 protein transport
GO:0045184 establishment of protein localization
GO:0008104 protein localization
GO:0051649 establishment of localization in cell
GO:0070727 cellular macromolecule localization
GO:0006605 protein targeting
GO:0006886 intracellular protein transport
GO:0006612 (0.013) protein targeting to membrane 40/941 | 889/39669
GO:0006886 intracellular protein transport
GO:0006605 protein targeting
GO:0006886 intracellular protein transport
GO:0006886 intracellular protein transport
GO:0006886 intracellular protein transport

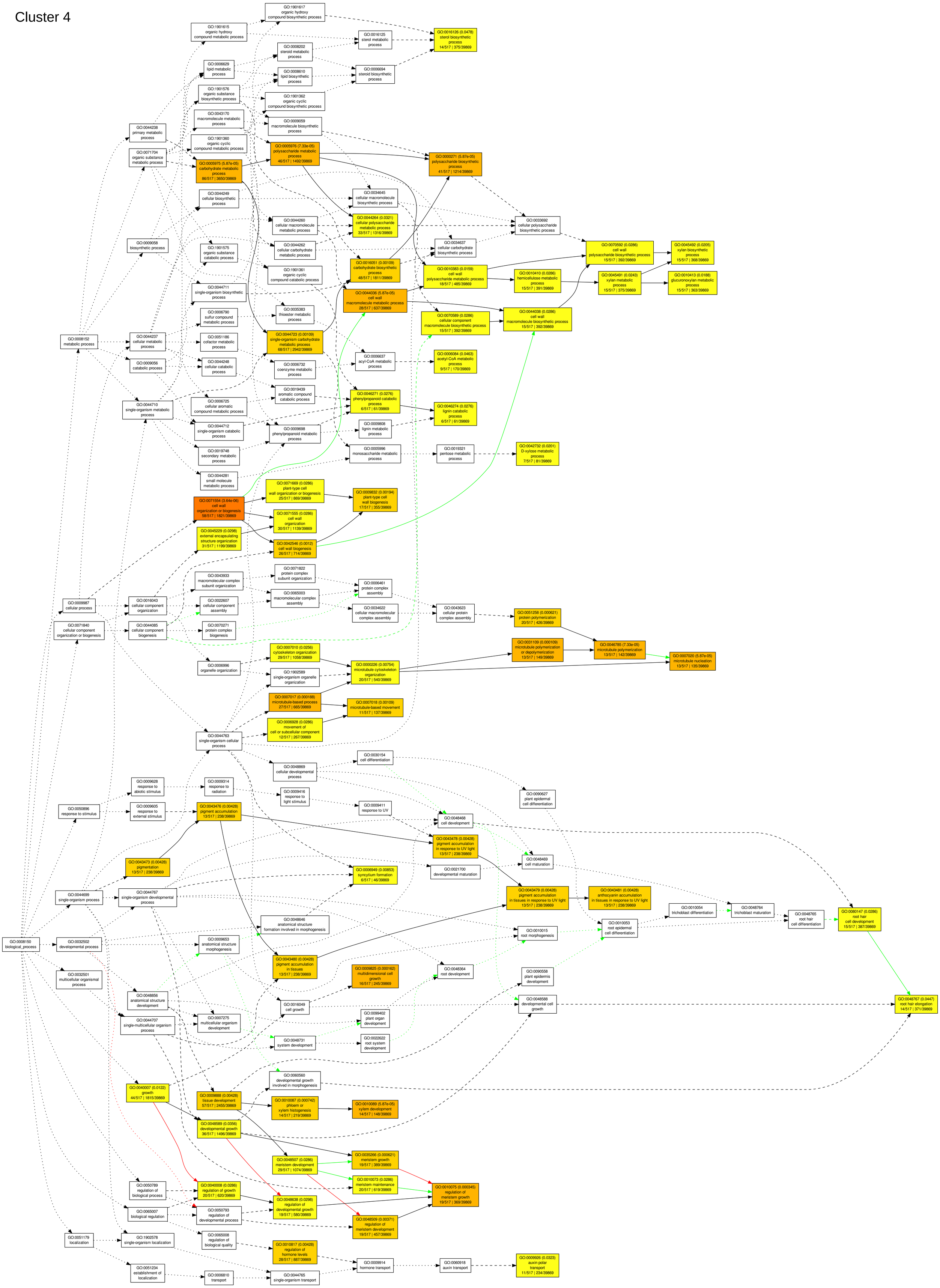
Cluster 2


GO:0022613 (1.55e-15) ribonucleoprotein complex biogenesis 61/818 | 753/39869
GO:0042254 (1.55e-15) ribosome biogenesis 60/818 | 730/39869
GO:0044085 (7.09e-09) cellular component biogenesis 119/818 | 3029/39869
GO:0070271 (0.0173) protein complex biogenesis 52/818 | 1432/39869
GO:0006461 (0.015) protein complex assembly 52/818 | 1421/39869
GO:0071822 (0.00512) protein complex subunit organization 55/818 | 1462/39869
GO:0034728 (1.06e-19) nucleosome organization 31/818 | 111/39869
GO:0006334 (1.06e-19) nucleosome assembly 31/818 | 111/39869
GO:0071824 (1.29e-19) protein-DNA complex subunit organization 31/818 | 115/39869
GO:0065004 (1.29e-19) protein-DNA complex assembly 31/818 | 115/39869
GO:0043933 macromolecular complex subunit organization
GO:0034622 (0.015) cellular macromolecular complex assembly 52/818 | 1422/39869
GO:0065003 (0.0205) macromolecular complex assembly 53/818 | 1483/39869
GO:0071840 (0.00512) cellular component organization or biogenesis 208/818 | 7762/39869
GO:0016043 cellular component organization
GO:0022607 cellular component assembly
GO:0006996 organelle organization
GO:0051276 chromosome organization
GO:0006325 (0.0123) chromatin organization 48/818 | 1262/39869
GO:0031497 (1.53e-18) chromatin assembly 31/818 | 128/39869
GO:0006333 (1.73e-14) chromatin assembly or disassembly 32/818 | 208/39869
GO:0071103 (2.21e-14) DNA conformation change 31/818 | 195/39869
GO:0006323 (4.07e-18) DNA packaging 31/818 | 134/39869
GO:0043414 macromolecule methylation
GO:0001510 (5.34e-05) RNA methylation 27/818 | 396/39869
GO:0043412 macromolecule modification
GO:0032259 methylation
GO:0009451 RNA modification
GO:0046483 heterocycle metabolic process
GO:0090304 nucleic acid metabolic process
GO:0016070 RNA metabolic process
GO:0034660 (0.00633) ncRNA metabolic process 37/818 | 848/39869
GO:0016072 (0.00228) rRNA metabolic process 28/818 | 524/39869
GO:0006364 (0.00228) rRNA processing 28/818 | 522/39869
GO:0006725 cellular aromatic compound metabolic process
GO:0006139 nucleobase-containing compound metabolic process
GO:0044260 cellular macromolecule metabolic process
GO:0009987 cellular process
GO:0044237 cellular metabolic process
GO:0006396 (0.0436) RNA processing 60/818 | 1802/39869
GO:0034470 (0.00126) ncRNA processing 33/818 | 652/39869
GO:1901360 organic cyclic compound metabolic process
GO:0043170 macromolecule metabolic process
GO:0010467 (9.83e-06) gene expression 198/818 | 6636/39869
GO:0008150 biological_process
GO:0044238 primary metabolic process
GO:0019538 protein metabolic process
GO:0044267 cellular protein metabolic process
GO:0008152 metabolic process
GO:0006412 (7.12e-15) translation 86/818 | 1438/39869
GO:0071704 organic substance metabolic process
GO:0009059 macromolecule biosynthetic process
GO:0034645 cellular macromolecule biosynthetic process
GO:0044249 cellular biosynthetic process
GO:0009058 biosynthetic process
GO:0044271 (0.000563) cellular nitrogen compound biosynthetic process 183/818 | 6401/39869
GO:0006807 (5.22e-06) nitrogen compound metabolic process 294/818 | 10741/39869
GO:0034641 (1.99e-05) cellular nitrogen compound metabolic process 271/818 | 9870/39869
GO:0043604 (1.02e-14) amide biosynthetic process 86/818 | 1453/39869
GO:1901576 (0.0287) organic substance biosynthetic process 309/818 | 12647/39869
GO:0043603 (2.37e-14) cellular amide metabolic process 88/818 | 1540/39869
GO:0043043 (9.5e-15) peptide biosynthetic process 86/818 | 1448/39869
GO:1901564 (5.08e-11) organonitrogen compound metabolic process 177/818 | 4914/39869
GO:1901566 (6.38e-14) organonitrogen compound biosynthetic process 144/818 | 3375/39869
GO:0006518 (1.02e-14) peptide metabolic process 87/818 | 1483/39869
GO:0050896 response to stimulus
GO:0009628 response to abiotic stimulus
GO:0006970 (0.0203) response to osmotic stress 63/818 | 1857/39869
GO:0006950 response to stress
GO:0009611 (0.00228) response to wounding 38/818 | 835/39869

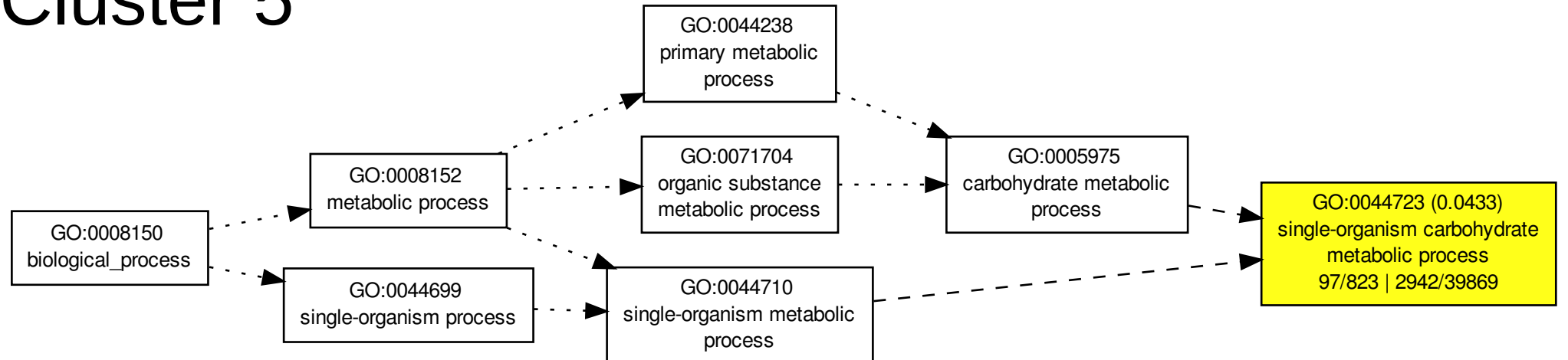
Cluster 3



Cluster 4


GO:1901617 organic hydroxy compound biosynthetic process
GO:1901615 organic hydroxy compound metabolic process
GO:0016126 (0.0478) sterol biosynthetic process 14/517 | 375/39869
GO:0016125 sterol metabolic process
GO:0008202 steroid metabolic process
GO:0006629 lipid metabolic process
GO:0008610 lipid biosynthetic process
GO:0006694 steroid biosynthetic process
GO:1901576 organic substance biosynthetic process
GO:1901362 organic cyclic compound biosynthetic process
GO:0043170 macromolecule metabolic process
GO:0009059 macromolecule biosynthetic process
GO:0044238 primary metabolic process
GO:1901360 organic cyclic compound metabolic process
GO:0071704 organic substance metabolic process
GO:0005976 (7.33e-05) polysaccharide metabolic process 46/517 | 1492/39869
GO:0000271 (5.87e-05) polysaccharide biosynthetic process 41/517 | 1214/39869
GO:0005975 (5.87e-05) carbohydrate metabolic process 86/517 | 3650/39869
GO:0044249 cellular biosynthetic process
GO:0034645 cellular macromolecule biosynthetic process
GO:0044260 cellular macromolecule metabolic process
GO:0044264 (0.0321) cellular polysaccharide metabolic process 33/517 | 1316/39869
GO:0033692 cellular polysaccharide biosynthetic process
GO:0009058 biosynthetic process
GO:0044262 cellular carbohydrate metabolic process
GO:0034637 cellular carbohydrate biosynthetic process
GO:0070592 (0.0286) cell wall polysaccharide biosynthetic process 15/517 | 392/39869
GO:0045492 (0.0205) xylan biosynthetic process 15/517 | 368/39869
GO:1901575 organic substance catabolic process
GO:0016051 (0.00109) carbohydrate biosynthetic process 48/517 | 1811/39869
GO:1901361 organic cyclic compound catabolic process
GO:0010383 (0.0159) cell wall polysaccharide metabolic process 18/517 | 485/39869
GO:0010410 (0.0286) hemicellulose metabolic process 15/517 | 391/39869
GO:0045491 (0.0243) xylan metabolic process 15/517 | 375/39869
GO:0010413 (0.0188) glucuronoxylan metabolic process 15/517 | 363/39869
GO:0044711 single-organism biosynthetic process
GO:0044036 (5.87e-05) cell wall macromolecule metabolic process 28/517 | 637/39869
GO:0006790 sulfur compound metabolic process
GO:0035383 thioester metabolic process
GO:0070589 (0.0286) cellular component macromolecule biosynthetic process 15/517 | 392/39869
GO:0044038 (0.0286) cell wall macromolecule biosynthetic process 15/517 | 392/39869
GO:0008152 metabolic process
GO:0044237 cellular metabolic process
GO:0051186 cofactor metabolic process
GO:0044723 (0.00109) single-organism carbohydrate metabolic process 68/517 | 2942/39869
GO:0009056 catabolic process
GO:0044248 cellular catabolic process
GO:0006637 acyl-CoA metabolic process
GO:0006084 (0.0463) acetyl-CoA metabolic process 9/517 | 170/39869
GO:0006732 coenzyme metabolic process
GO:0019439 aromatic compound catabolic process
GO:0046271 (0.0276) phenylpropanoid catabolic process 6/517 | 61/39869
GO:0044710 single-organism metabolic process
GO:0006725 cellular aromatic compound metabolic process
GO:0046274 (0.0276) lignin catabolic process 6/517 | 61/39869
GO:0044712 single-organism catabolic process
GO:0009698 phenylpropanoid metabolic process
GO:0009808 lignin metabolic process
GO:0019748 secondary metabolic process
GO:0005996 monosaccharide metabolic process
GO:0019321 pentose metabolic process
GO:0042732 (0.0201) D-xylose metabolic process 7/517 | 81/39869
GO:0044281 small molecule metabolic process
GO:0071669 (0.0286) plant-type cell wall organization or biogenesis 25/517 | 869/39869
GO:0009832 (0.00194) plant-type cell wall biogenesis 17/517 | 355/39869
GO:0071554 (3.64e-06) cell wall organization or biogenesis 58/517 | 1821/39869
GO:0071555 (0.0286) cell wall organization 30/517 | 1139/39869
GO:0045229 (0.0298) external encapsulating structure organization 31/517 | 1199/39869
GO:0042546 (0.0012) cell wall biogenesis 26/517 | 714/39869
GO:0071822 protein complex subunit organization
GO:0043933 macromolecular complex subunit organization
GO:0006461 protein complex assembly
GO:0065003 macromolecular complex assembly
GO:0009987 cellular process
GO:0016043 cellular component organization
GO:0022607 cellular component assembly
GO:0034622 cellular macromolecular complex assembly
GO:0043623 cellular protein complex assembly
GO:0051258 (0.000621) protein polymerization 20/517 | 426/39869
GO:0071840 cellular component organization or biogenesis
GO:0044085 cellular component biogenesis
GO:0070271 protein complex biogenesis
GO:0031109 (0.000109) microtubule polymerization or depolymerization 13/517 | 149/39869
GO:0046785 (7.33e-05) microtubule polymerization 13/517 | 142/39869
GO:0007020 (5.87e-05) microtubule nucleation 13/517 | 135/39869
GO:0007010 (0.0256) cytoskeleton organization 29/517 | 1058/39869
GO:0006996 organelle organization
GO:0000226 (0.00754) microtubule cytoskeleton organization 20/517 | 540/39869
GO:1902589 single-organism organelle organization
GO:0007017 (0.000188) microtubule-based process 27/517 | 665/39869
GO:0007018 (0.00109) microtubule-based movement 11/517 | 137/39869
GO:0006928 (0.0286) movement of cell or subcellular component 12/517 | 267/39869
GO:0044763 single-organism cellular process
GO:0030154 cell differentiation
GO:0048869 cellular developmental process
GO:0090627 plant epidermal cell differentiation
GO:0009628 response to abiotic stimulus
GO:0009314 response to radiation
GO:0009416 response to light stimulus
GO:0050896 response to stimulus
GO:0009605 response to external stimulus
GO:0043476 (0.00428) pigment accumulation 13/517 | 238/39869
GO:0009411 response to UV
GO:0048468 cell development
GO:0043478 (0.00428) pigment accumulation in response to UV light 13/517 | 238/39869
GO:0043473 (0.00428) pigmentation 13/517 | 238/39869
GO:0048469 cell maturation
GO:0006949 (0.00853) syncytium formation 6/517 | 46/39869
GO:0021700 developmental maturation
GO:0044699 single-organism process
GO:0044767 single-organism developmental process
GO:0043479 (0.00428) pigment accumulation in tissues in response to UV light 13/517 | 238/39869
GO:0043481 (0.00428) anthocyanin accumulation in tissues in response to UV light 13/517 | 238/39869
GO:0010054 trichoblast differentiation
GO:0048764 trichoblast maturation
GO:0048765 root hair cell differentiation
GO:0080147 (0.0286) root hair cell development 15/517 | 387/39869
GO:0048646 anatomical structure formation involved in morphogenesis
GO:0010053 root epidermal cell differentiation
GO:0008150 biological_process
GO:0032502 developmental process
GO:0009653 anatomical structure morphogenesis
GO:0010015 root morphogenesis
GO:0043480 (0.00428) pigment accumulation in tissues 13/517 | 238/39869
GO:0009825 (0.000162) multidimensional cell growth 16/517 | 245/39869
GO:0048364 root development
GO:0090558 plant epidermis development
GO:0032501 multicellular organismal process
GO:0048856 anatomical structure development
GO:0016049 cell growth
GO:0048588 developmental cell growth
GO:0048767 (0.0447) root hair elongation 14/517 | 371/39869
GO:0044707 single-multicellular organism process
GO:0007275 multicellular organism development
GO:0099402 plant organ development
GO:0048731 system development
GO:0022622 root system development
GO:0060560 developmental growth involved in morphogenesis
GO:0040007 (0.0122) growth 44/517 | 1815/39869
GO:0009888 (0.00428) tissue development 57/517 | 2455/39869
GO:0010087 (0.000742) phloem or xylem histogenesis 14/517 | 219/39869
GO:0010089 (5.87e-05) xylem development 14/517 | 148/39869
GO:0048589 (0.0356) developmental growth 36/517 | 1496/39869
GO:0035266 (0.000621) meristem growth 19/517 | 389/39869
GO:0048507 (0.0286) meristem development 29/517 | 1074/39869
GO:0010073 (0.0286) meristem maintenance 20/517 | 619/39869
GO:0010075 (0.000345) regulation of meristem growth 19/517 | 369/39869
GO:0050789 regulation of biological process
GO:0040008 (0.0286) regulation of growth 20/517 | 620/39869
GO:0048638 (0.0298) regulation of developmental growth 19/517 | 580/39869
GO:0065007 biological regulation
GO:0050793 regulation of developmental process
GO:0048509 (0.00371) regulation of meristem development 19/517 | 457/39869
GO:0051179 localization
GO:1902578 single-organism localization
GO:0065008 regulation of biological quality
GO:0010817 (0.00428) regulation of hormone levels 28/517 | 887/39869
GO:0009914 hormone transport
GO:0060918 auxin transport
GO:0009926 (0.0323) auxin polar transport 11/517 | 234/39869
GO:0051234 establishment of localization
GO:0006810 transport
GO:0044765 single-organism transport

Cluster 5


GO:0044238
primary metabolic
process
GO:0008152
metabolic process
GO:0071704
organic substance
metabolic process
GO:0005975
carbohydrate metabolic
process
GO:0008150
biological_process
GO:0044723 (0.0433)
single-organism carbohydrate
metabolic process
97/823 | 2942/39869
GO:0044699
single-organism process
GO:0044710
single-organism metabolic
process

Cluster 6

GO:0050794 regulation of cellular process
GO:0050789 regulation of biological process
GO:0065007 biological regulation
GO:0008150 biological_process
GO:0065008 regulation of biological quality
GO:0051179 localization
GO:0051234 establishment of localization
GO:0051641 cellular localization
GO:0044237 cellular metabolic process
GO:0044238 primary metabolic process
GO:0071704 organic substance metabolic process
GO:0006807 nitrogen compound metabolic process
GO:0044260 cellular macromolecule metabolic process
GO:0043170 macromolecule metabolic process
GO:0044267 cellular protein metabolic process
GO:0019538 protein metabolic process
GO:0006412 translation
GO:0006518 peptide metabolic process
GO:0043412 macromolecule modification
GO:0006464 cellular protein modification process
GO:0036211 protein modification process
GO:0006457 protein folding
GO:0051604 protein maturation
GO:0006508 proteolysis
GO:0006511 ubiquitin-dependent protein catabolic process
GO:0019941 modification-dependent protein catabolic process
GO:0043632 modification-dependent macromolecule catabolic process
GO:0044265 cellular macromolecule catabolic process
GO:0044257 cellular protein catabolic process
GO:0019538 protein metabolic process
GO:0044267 cellular protein metabolic process
GO:0044260 cellular macromolecule metabolic process
GO:0044237 cellular metabolic process
GO:0006139 nucleobase-containing compound metabolic process
GO:0006725 cellular aromatic compound metabolic process
GO:0046483 heterocycle metabolic process
GO:0006807 nitrogen compound