

| Label | ID | partition | vector | AllDegree | WeightedAllDegree | AllclosenessCentrality | BetweennessCentrality | HubWeights | AuthorityWeights |
|------------------------------|-----|-----------|--------|-----------|-------------------|------------------------|-----------------------|-------------|------------------|
| inflammation | 1 | 1 | 2363 | 161 | 11957 | 1 | 0.004079848 | 0.496312134 | 0.496312193 |
| mitochondria | 2 | 3 | 2335 | 161 | 11648 | 1 | 0.004079848 | 0.483142349 | 0.483142297 |
| oxidative stress | 3 | 2 | 1650 | 161 | 8591 | 1 | 0.004079848 | 0.385957841 | 0.385957836 |
| apoptosis | 4 | 1 | 1017 | 161 | 5507 | 1 | 0.004079848 | 0.274757997 | 0.274757997 |
| activation | 5 | 1 | 747 | 160 | 4134 | 0.99382716 | 0.004049813 | 0.203889632 | 0.203889632 |
| expression | 6 | 1 | 675 | 161 | 3439 | 1 | 0.004079848 | 0.169876515 | 0.169876513 |
| nf-kappa-b | 7 | 2 | 423 | 159 | 2342 | 0.987730061 | 0.003959244 | 0.116678008 | 0.116678006 |
| dysfunction | 8 | 4 | 396 | 161 | 2205 | 1 | 0.004079848 | 0.11827609 | 0.118276089 |
| autophagy | 9 | 1 | 387 | 159 | 2191 | 0.987730061 | 0.003893561 | 0.109738303 | 0.109738302 |
| metabolism | 10 | 3 | 365 | 159 | 1928 | 0.987730061 | 0.003893062 | 0.099918037 | 0.099918038 |
| cells | 11 | 4 | 364 | 147 | 1791 | 0.92 | 0.003064897 | 0.099044716 | 0.099044715 |
| mechanisms | 12 | 4 | 326 | 157 | 1735 | 0.975757576 | 0.003762927 | 0.090685706 | 0.090685706 |
| inhibition | 13 | 1 | 312 | 157 | 1718 | 0.975757576 | 0.003698468 | 0.091990244 | 0.091990243 |
| cell-death | 14 | 5 | 306 | 148 | 1718 | 0.925287356 | 0.003189401 | 0.086398435 | 0.086398436 |
| mitochondrial dysfunction | 15 | 2 | 313 | 158 | 1640 | 0.981707317 | 0.003837851 | 0.079141316 | 0.079141315 |
| disease | 16 | 4 | 298 | 153 | 1503 | 0.952662722 | 0.003500575 | 0.078879472 | 0.078879472 |
| nitric-oxide | 17 | 2 | 284 | 154 | 1495 | 0.958333333 | 0.003595648 | 0.074871516 | 0.074871517 |
| obesity | 18 | 3 | 261 | 133 | 1471 | 0.851851852 | 0.002221724 | 0.073671204 | 0.073671204 |
| insulin-resistance | 19 | 3 | 273 | 142 | 1417 | 0.894444444 | 0.002695585 | 0.068507289 | 0.068507289 |
| reactive oxygen species | 20 | 2 | 245 | 150 | 1310 | 0.936046512 | 0.003236151 | 0.06709804 | 0.06709804 |
| injury | 21 | 4 | 219 | 146 | 1217 | 0.914772727 | 0.002931373 | 0.063266569 | 0.063266569 |
| mice | 22 | 4 | 231 | 155 | 1185 | 0.964071856 | 0.003628536 | 0.059790619 | 0.059790619 |
| cancer | 23 | 1 | 214 | 145 | 1072 | 0.90960452 | 0.002782719 | 0.056977004 | 0.056977003 |
| damage | 24 | 4 | 193 | 143 | 1039 | 0.899441341 | 0.002689428 | 0.055776942 | 0.055776942 |
| gene-expression | 25 | 3 | 222 | 152 | 1022 | 0.947058824 | 0.003427402 | 0.049494189 | 0.049494189 |
| stress | 26 | 1 | 187 | 147 | 1003 | 0.92 | 0.002967459 | 0.050399366 | 0.050399366 |
| protein | 27 | 1 | 200 | 147 | 981 | 0.92 | 0.003210766 | 0.046600634 | 0.046600634 |
| nlrp3 inflammasome | 28 | 1 | 183 | 136 | 974 | 0.865591398 | 0.002504668 | 0.044970281 | 0.044970282 |
| death | 29 | 1 | 179 | 135 | 967 | 0.860926567 | 0.002375084 | 0.050620282 | 0.050620282 |
| skeletal-muscle | 30 | 3 | 182 | 134 | 932 | 0.856382979 | 0.002382784 | 0.047803434 | 0.047803435 |
| mitophagy | 31 | 1 | 145 | 135 | 883 | 0.860926567 | 0.002489017 | 0.043383428 | 0.043383427 |
| in-vitro | 32 | 1 | 184 | 142 | 859 | 0.894444444 | 0.00277636 | 0.046115 | 0.046115 |
| pathway | 33 | 1 | 152 | 131 | 847 | 0.842931937 | 0.002229131 | 0.045963558 | 0.045963558 |
| in-vivo | 34 | 2 | 173 | 145 | 837 | 0.90960452 | 0.003144606 | 0.042538789 | 0.042538789 |
| protects | 35 | 4 | 128 | 133 | 818 | 0.851851852 | 0.002195401 | 0.043509584 | 0.043509584 |
| liver | 36 | 4 | 148 | 133 | 816 | 0.851851852 | 0.002352928 | 0.041453994 | 0.041453994 |
| sepsis | 37 | 4 | 138 | 121 | 801 | 0.800995025 | 0.001731481 | 0.040393577 | 0.040393577 |
| endoplasmic-reticulum stress | 38 | 5 | 148 | 132 | 779 | 0.847368421 | 0.002305927 | 0.037567579 | 0.037567579 |
| ros | 39 | 1 | 138 | 137 | 774 | 0.87027027 | 0.002547326 | 0.040383251 | 0.040383251 |
| macrophages | 40 | 1 | 137 | 133 | 770 | 0.851851852 | 0.002316395 | 0.037897205 | 0.037897205 |
| nitric-oxide synthase | 41 | 2 | 147 | 125 | 750 | 0.817258883 | 0.00185814 | 0.034491621 | 0.034491621 |
| antioxidant | 42 | 2 | 130 | 133 | 744 | 0.851851852 | 0.002339943 | 0.040984665 | 0.040984665 |
| aging | 43 | 3 | 133 | 133 | 744 | 0.851851852 | 0.002386202 | 0.039744255 | 0.039744255 |
| alzheimers-disease | 44 | 2 | 135 | 120 | 736 | 0.797029703 | 0.001770161 | 0.037046719 | 0.037046719 |
| brain | 45 | 2 | 144 | 128 | 733 | 0.829896907 | 0.002220845 | 0.037917237 | 0.037917237 |
| atherosclerosis | 46 | 3 | 125 | 129 | 682 | 0.834196891 | 0.002103671 | 0.035663982 | 0.035663981 |
| receptor | 47 | 1 | 134 | 128 | 672 | 0.829896907 | 0.001978142 | 0.03470684 | 0.03470684 |
| model | 48 | 4 | 125 | 127 | 659 | 0.825641026 | 0.001953177 | 0.03670938 | 0.03670938 |
| necrosis-factor-alpha | 49 | 3 | 128 | 129 | 647 | 0.834196891 | 0.002242427 | 0.033363807 | 0.033363807 |
| neurodegeneration | 50 | 2 | 119 | 116 | 638 | 0.781553398 | 0.001588919 | 0.032902208 | 0.032902208 |
| pathogenesis | 51 | 4 | 116 | 133 | 622 | 0.851851852 | 0.002278004 | 0.032870061 | 0.032870061 |
| activated protein-kinase | 52 | 3 | 121 | 129 | 618 | 0.834196891 | 0.00213906 | 0.029024246 | 0.029024246 |
| cytochrome-c | 53 | 1 | 117 | 124 | 615 | 0.813131313 | 0.001868235 | 0.03217766 | 0.03217766 |
| rats | 54 | 4 | 111 | 125 | 606 | 0.817258883 | 0.001915784 | 0.033058626 | 0.033058626 |
| tnf-alpha | 55 | 5 | 111 | 133 | 604 | 0.851851852 | 0.002190468 | 0.028611541 | 0.028611541 |
| adipose-tissue | 56 | 3 | 115 | 99 | 587 | 0.721973094 | 8.99E-04 | 0.031129196 | 0.031129196 |
| ischemia-reperfusion injury | 57 | 5 | 112 | 114 | 583 | 0.774038462 | 0.001432372 | 0.031342837 | 0.031342837 |
| mouse model | 58 | 2 | 120 | 121 | 573 | 0.800995025 | 0.001882684 | 0.031795024 | 0.031795024 |
| hypoxia | 59 | 5 | 102 | 125 | 572 | 0.817258883 | 0.001997425 | 0.030042302 | 0.030042302 |
| cytokines | 60 | 1 | 104 | 124 | 571 | 0.813131313 | 0.001915251 | 0.031073544 | 0.031073544 |
| heart | 61 | 5 | 102 | 122 | 571 | 0.805 | 0.001750095 | 0.032400453 | 0.032400453 |
| induced apoptosis | 62 | 1 | 111 | 129 | 567 | 0.834196891 | 0.00214609 | 0.025435142 | 0.025435142 |
| tumor-necrosis-factor | 63 | 2 | 108 | 128 | 546 | 0.829896907 | 0.002187025 | 0.027441405 | 0.027441405 |
| metabolic syndrome | 64 | 3 | 93 | 111 | 540 | 0.763033175 | 0.001213845 | 0.026445043 | 0.026445043 |
| induction | 65 | 1 | 100 | 114 | 534 | 0.774038462 | 0.001435383 | 0.027893427 | 0.027893427 |
| dna-damage | 66 | 5 | 102 | 123 | 534 | 0.809045226 | 0.001709146 | 0.028639665 | 0.028639665 |
| diabetes | 67 | 3 | 86 | 117 | 526 | 0.785365854 | 0.001601466 | 0.026232679 | 0.026232679 |
| lipopolysaccharide | 68 | 4 | 85 | 121 | 523 | 0.800995025 | 0.001719267 | 0.026048579 | 0.026048579 |
| proliferation | 69 | 1 | 102 | 112 | 517 | 0.766666667 | 0.001441412 | 0.029789246 | 0.029789246 |
| neuroinflammation | 70 | 2 | 92 | 102 | 515 | 0.731818182 | 9.79E-04 | 0.025141991 | 0.025141992 |
| microglia | 71 | 2 | 86 | 104 | 514 | 0.73853211 | 0.001213665 | 0.026961916 | 0.026961915 |
| reactive oxygen | 72 | 2 | 100 | 122 | 512 | 0.805 | 0.001776767 | 0.026854481 | 0.026854481 |
| glutathione | 73 | 4 | 88 | 112 | 503 | 0.766666667 | 0.001473079 | 0.027295427 | 0.027295427 |
| inflammasome | 74 | 1 | 81 | 112 | 500 | 0.766666667 | 0.001287044 | 0.022928868 | 0.022928869 |
| phosphorylation | 75 | 1 | 90 | 130 | 492 | 0.838541667 | 0.002180688 | 0.02594008 | 0.02594008 |
| kappa-b | 76 | 4 | 86 | 134 | 490 | 0.856382979 | 0.002357769 | 0.024424473 | 0.024424473 |
| antioxidants | 77 | 2 | 86 | 117 | 485 | 0.785365854 | 0.001633534 | 0.024485766 | 0.024485766 |
| nf-kappa b | 78 | 1 | 74 | 120 | 478 | 0.797029703 | 0.001638622 | 0.025155965 | 0.025155965 |
| insulin resistance | 79 | 3 | 79 | 99 | 476 | 0.721973094 | 9.77E-04 | 0.022732789 | 0.022732789 |
| er stress | 80 | 5 | 83 | 117 | 470 | 0.785365854 | 0.001570475 | 0.022526811 | 0.022526811 |
| nadph oxidase | 81 | 2 | 81 | 107 | 464 | 0.748837209 | 0.001250376 | 0.023214469 | 0.023214469 |
| melatonin | 82 | 2 | 74 | 111 | 458 | 0.763033175 | 0.001364993 | 0.026449918 | 0.026449918 |
| fibrosis | 83 | 4 | 91 | 117 | 455 | 0.785365854 | 0.001435607 | 0.02434674 | 0.02434674 |
| innate immunity | 84 | 1 | 94 | 115 | 454 | 0.777777778 | 0.001604837 | 0.021062991 | 0.021062991 |
| nitric oxide | 85 | 2 | 78 | 107 | 452 | 0.748837209 | 0.001249916 | 0.023540448 | 0.023540448 |
| mechanism | 86 | 1 | 81 | 118 | 446 | 0.789215686 | 0.001662916 | 0.023597751 | 0.023597751 |
| neuroprotection | 87 | 2 | 81 | 105 | 446 | 0.741935484 | 0.001039308 | 0.024299504 | 0.024299504 |
| alzheimers disease | 88 | 2 | 81 | 95 | 441 | 0.709251101 | 8.70E-04 | 0.023671071 | 0.023671071 |
| lipid-peroxidation | 89 | 2 | 96 | 104 | 440 | 0.73853211 | 0.001261862 | 0.024492798 | 0.024492798 |
| toxicity | 90 | 4 | 81 | 93 | 435 | 0.703056769 | 8.15E-04 | 0.024582918 | 0.024582918 |
| growth | 91 | 1 | 83 | 107 | 434 | 0.748837209 | 0.001274243 | 0.022861944 | 0.022861943 |
| release | 92 | 1 | 77 | 104 | 428 | 0.73853211 | 0.00114401 | 0.021627736 | 0.021627736 |
| mitochondrial biogenesis | 93 | 3 | 70 | 118 | 412 | 0.789215686 | 0.001638768 | 0.018961982 | 0.018961981 |
| differentiation | 94 | 3 | 80 | 106 | 400 | 0.74537037 | 0.00118793 | 0.020862226 | 0.020862227 |
| superoxide | 95 | 2 | 71 | 106 | 394 | 0.74537037 | 0.001301748 | 0.021030839 | 0.021030839 |
| endothelial dysfunction | 96 | 2 | 69 | 103 | 392 | 0.735159817 | 0.001057991 | 0.018870674 | 0.018870675 |
| exercise | 97 | 3 | 69 | 93 | 391 | 0.703056769 | 8.58E-04 | 0.019906208 | 0.019906208 |
| endothelial-cells | 98 | 2 | 77 | 118 | 388 | 0.789215686 | 0.001750376 | 0.01892774 | 0.01892774 |
| macrophage | 99 | 1 | 72 | 110 | 387 | 0.759433962 | 0.001298514 | 0.018444961 | 0.018444961 |
| pathways | 100 | 1 | 66 | 104 | 387 | 0.73853211 | 0.00120135 | 0.018804362 | 0.018804362 |
| exposure | 101 | 4 | 72 | 92 | 384 | 0.7 | 7.92E-04 | 0.022346666 | 0.022346665 |
| biogenesis | 102 | 3 | 69 | 101 | 379 | 0.728506787 | 0.001134227 | 0.019244362 | 0.019244362 |
| acute kidney injury | 103 | 4 | 67 | 97 | 378 | 0.715555556 | 9.72E-04 | 0.020666587 | 0.020666588 |
| dna | 104 | 1 | 82 | 104 | 374 | 0.73853211 | 0.001114197 | 0.01977596 | 0.01977596 |
| gene | 105 | 1 | 79 | 110 | 371 | 0.759433962 | 0.00136229 | 0.0181819 | 0.018181901 |
| up-regulation | 106 | 2 | 74 | 108 | 370 | 0.752364449 | 0.001335717 | 0.017344771 | 0.017344771 |
| calcium | 107 | 5 | 70 | 105 | 367 | 0.741935484 | 0.00114321 | 0.019174426 | 0.019174426 |
| parkinsons-disease | 108 | 2 | 67 | 94 | 366 | 0.706140351 | 7.91E-04 | 0.017635931 | 0.017635931 |
| responses | 109 | 1 | 74 | 96 | 363 | 0.712389381 | 9.22E-04 | 0.019160242 | 0.019160242 |
| necrosis | 110 | 5 | 63 | 105 | | | | | |

| | | | | | | | | | |
|-----------------------------------|-----|---|----|-----|-----|-------------|-------------|-------------|-------------|
| kidney | 122 | 4 | 57 | 94 | 333 | 0.706140351 | 7.63E-04 | 0.017642108 | 0.017642108 |
| mitochondrial permeability transi | 123 | 5 | 66 | 94 | 331 | 0.706140351 | 9.42E-04 | 0.016812739 | 0.016812739 |
| signaling pathway | 124 | 5 | 55 | 109 | 331 | 0.755868545 | 0.001337968 | 0.017899017 | 0.017899017 |
| rat | 125 | 4 | 59 | 103 | 330 | 0.735159817 | 0.001283379 | 0.016320193 | 0.016320193 |
| epithelial-cells | 126 | 1 | 72 | 108 | 328 | 0.752336449 | 0.001286666 | 0.017897918 | 0.017897917 |
| free radicals | 127 | 2 | 50 | 110 | 327 | 0.759433962 | 0.001436418 | 0.015029677 | 0.015029677 |
| association | 128 | 3 | 70 | 98 | 323 | 0.71875 | 0.001016395 | 0.017781991 | 0.017781991 |
| reperfusion injury | 129 | 5 | 62 | 91 | 321 | 0.696969697 | 7.65E-04 | 0.016268004 | 0.016268004 |
| cardiovascular-disease | 130 | 3 | 64 | 91 | 318 | 0.696969697 | 9.25E-04 | 0.017085819 | 0.017085818 |
| infection | 131 | 1 | 69 | 92 | 316 | 0.7 | 7.62E-04 | 0.016451326 | 0.016451326 |
| ischemia | 132 | 5 | 62 | 87 | 314 | 0.685106383 | 8.12E-04 | 0.017283406 | 0.017283406 |
| identification | 133 | 1 | 73 | 90 | 313 | 0.693965517 | 8.04E-04 | 0.018570066 | 0.018570066 |
| heart-failure | 134 | 5 | 56 | 100 | 312 | 0.725225225 | 8.83E-04 | 0.016915896 | 0.016915896 |
| permeability transition pore | 135 | 5 | 58 | 106 | 311 | 0.74537037 | 0.001543423 | 0.015256616 | 0.015256616 |
| muscle | 136 | 3 | 58 | 92 | 310 | 0.7 | 7.03E-04 | 0.016556938 | 0.016556938 |
| risk | 137 | 3 | 70 | 91 | 308 | 0.696969697 | 7.58E-04 | 0.016341791 | 0.016341791 |
| skeletal muscle | 138 | 3 | 53 | 88 | 307 | 0.688034188 | 8.07E-04 | 0.015647175 | 0.015647176 |
| acid | 139 | 4 | 65 | 98 | 307 | 0.71875 | 9.73E-04 | 0.016364597 | 0.016364597 |
| fatty liver disease | 140 | 3 | 60 | 79 | 306 | 0.66255144 | 5.02E-04 | 0.015584074 | 0.015584074 |
| fission | 141 | 1 | 56 | 85 | 303 | 0.679324895 | 6.91E-04 | 0.015974873 | 0.015974873 |
| glycolysis | 142 | 1 | 51 | 89 | 302 | 0.690987124 | 8.38E-04 | 0.016558495 | 0.016558495 |
| nrf2 | 143 | 2 | 52 | 96 | 299 | 0.712389381 | 9.55E-04 | 0.016287563 | 0.016287563 |
| parkinsons disease | 144 | 2 | 54 | 76 | 299 | 0.654471545 | 4.84E-04 | 0.014435688 | 0.014435688 |
| cell death | 145 | 5 | 51 | 102 | 299 | 0.731818182 | 0.0011838 | 0.015227629 | 0.015227629 |
| permeability transition | 146 | 5 | 62 | 97 | 299 | 0.715555556 | 9.19E-04 | 0.014944349 | 0.014944349 |
| fatty-acid oxidation | 147 | 3 | 58 | 93 | 296 | 0.703056769 | 8.79E-04 | 0.013659645 | 0.013659645 |
| life-span | 148 | 3 | 59 | 97 | 296 | 0.715555556 | 9.17E-04 | 0.014242647 | 0.014242647 |
| smooth-muscle-cells | 149 | 2 | 59 | 85 | 295 | 0.679324895 | 7.19E-04 | 0.014792442 | 0.014792442 |
| resistance | 150 | 1 | 58 | 94 | 292 | 0.706140351 | 8.63E-04 | 0.013993737 | 0.013993737 |
| central-nervous-system | 151 | 2 | 62 | 74 | 291 | 0.649193548 | 4.64E-04 | 0.014449328 | 0.014449328 |
| mitochondrial | 152 | 1 | 51 | 109 | 290 | 0.755868545 | 0.001601742 | 0.014599234 | 0.014599234 |
| oxidative damage | 153 | 2 | 57 | 96 | 286 | 0.712389381 | 0.001010459 | 0.013864255 | 0.013864256 |
| proteins | 154 | 1 | 58 | 100 | 282 | 0.725225225 | 0.001100344 | 0.014831735 | 0.014831735 |
| signaling pathways | 155 | 3 | 50 | 101 | 277 | 0.728506787 | 0.001143501 | 0.013490852 | 0.013490852 |
| unfolded protein response | 156 | 5 | 58 | 82 | 270 | 0.670833333 | 5.73E-04 | 0.013441646 | 0.013441646 |
| immunity | 157 | 1 | 51 | 94 | 264 | 0.706140351 | 9.47E-04 | 0.013008496 | 0.013008495 |
| hepatic steatosis | 158 | 3 | 50 | 84 | 253 | 0.676470588 | 6.82E-04 | 0.011367239 | 0.011367239 |
| cytochrome-c release | 159 | 5 | 51 | 85 | 252 | 0.679324895 | 7.85E-04 | 0.013363108 | 0.013363109 |
| neutrophils | 160 | 1 | 50 | 81 | 247 | 0.668049793 | 5.92E-04 | 0.013908542 | 0.013908542 |
| energy-metabolism | 161 | 3 | 53 | 91 | 245 | 0.696969697 | 9.23E-04 | 0.011761585 | 0.011761586 |
| dendritic cells | 162 | 1 | 53 | 79 | 223 | 0.66255144 | 5.27E-04 | 0.011056947 | 0.011056947 |