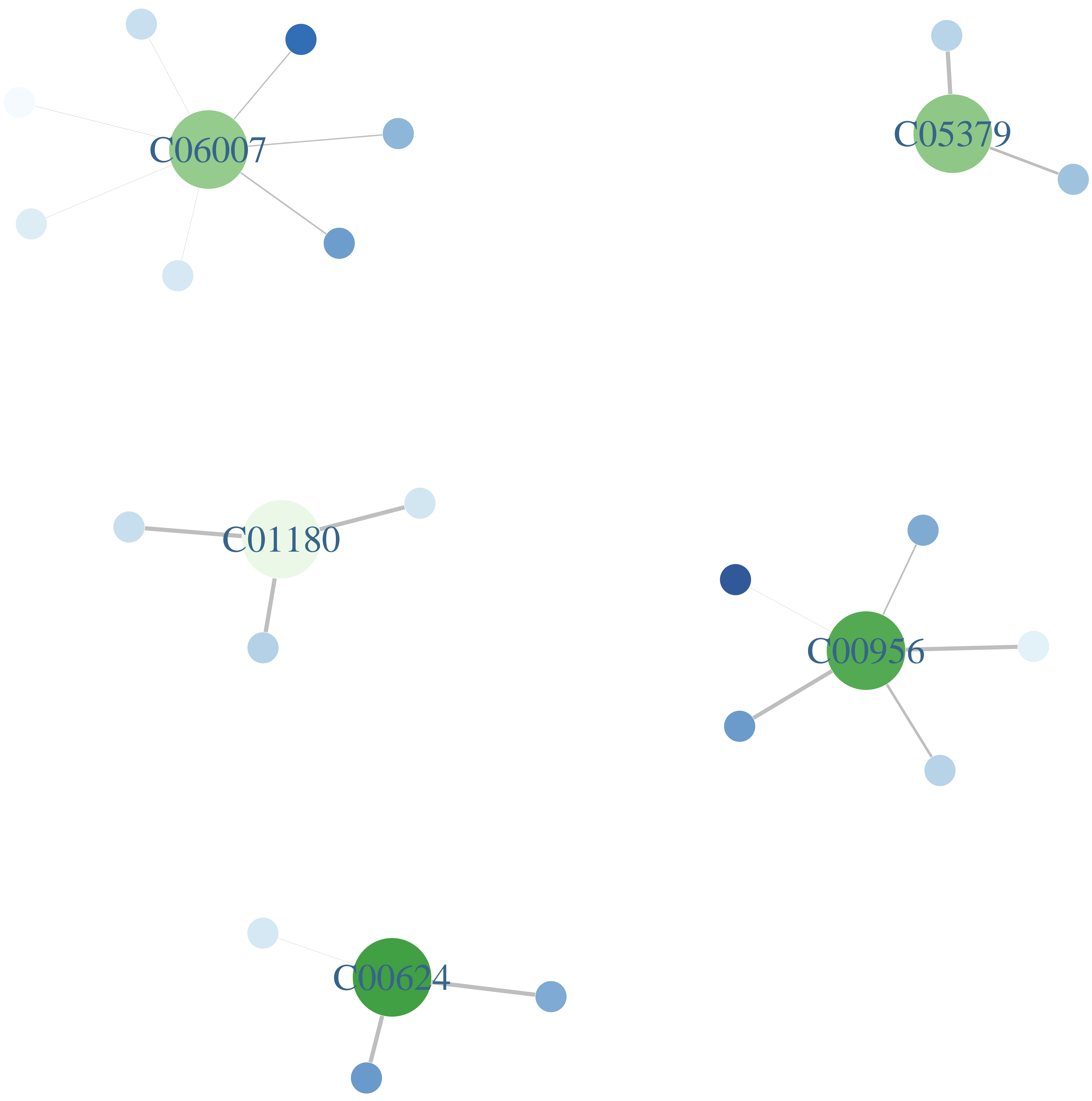
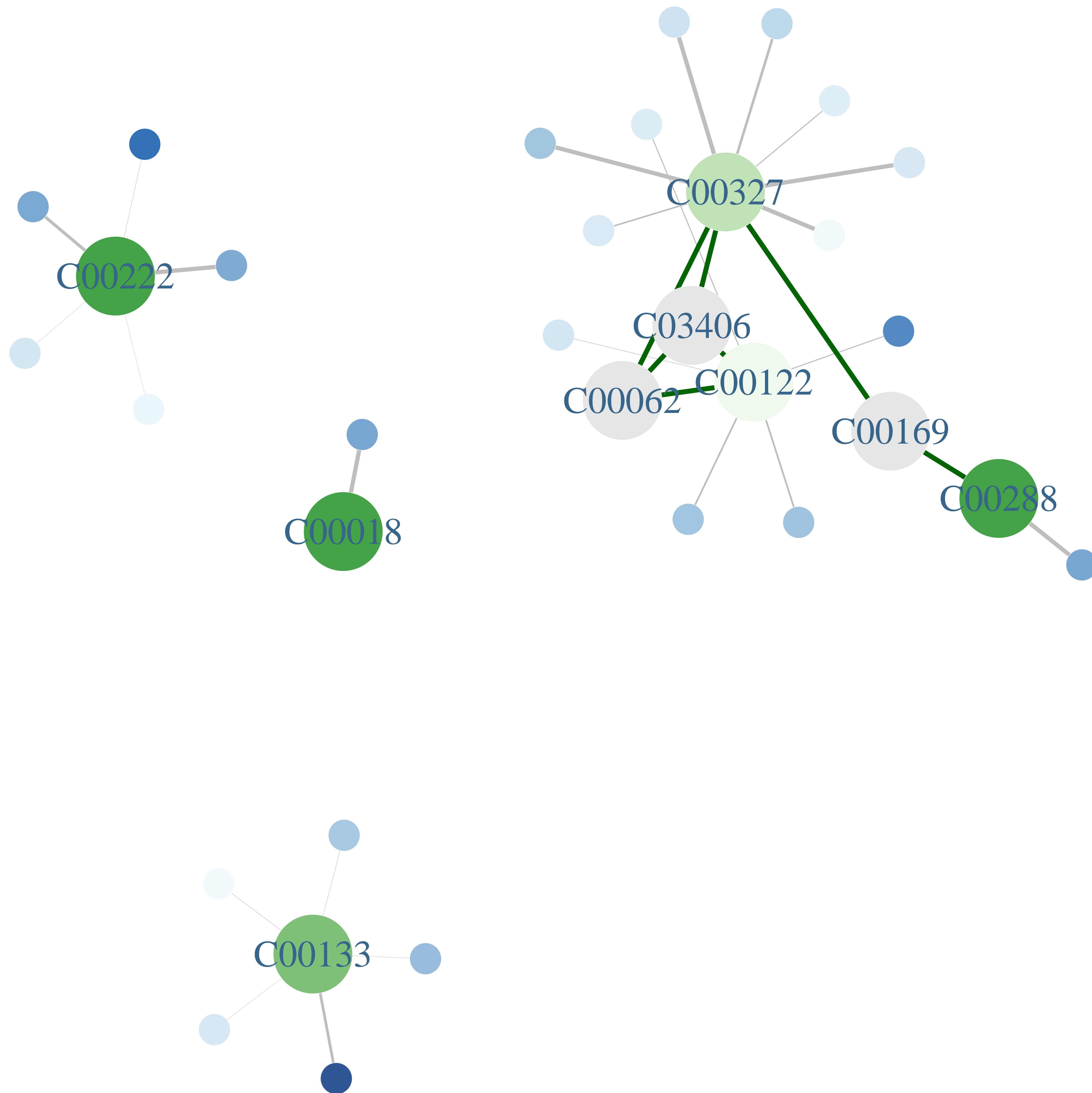


COVID-19 Metabolomics Data Pathway Plots

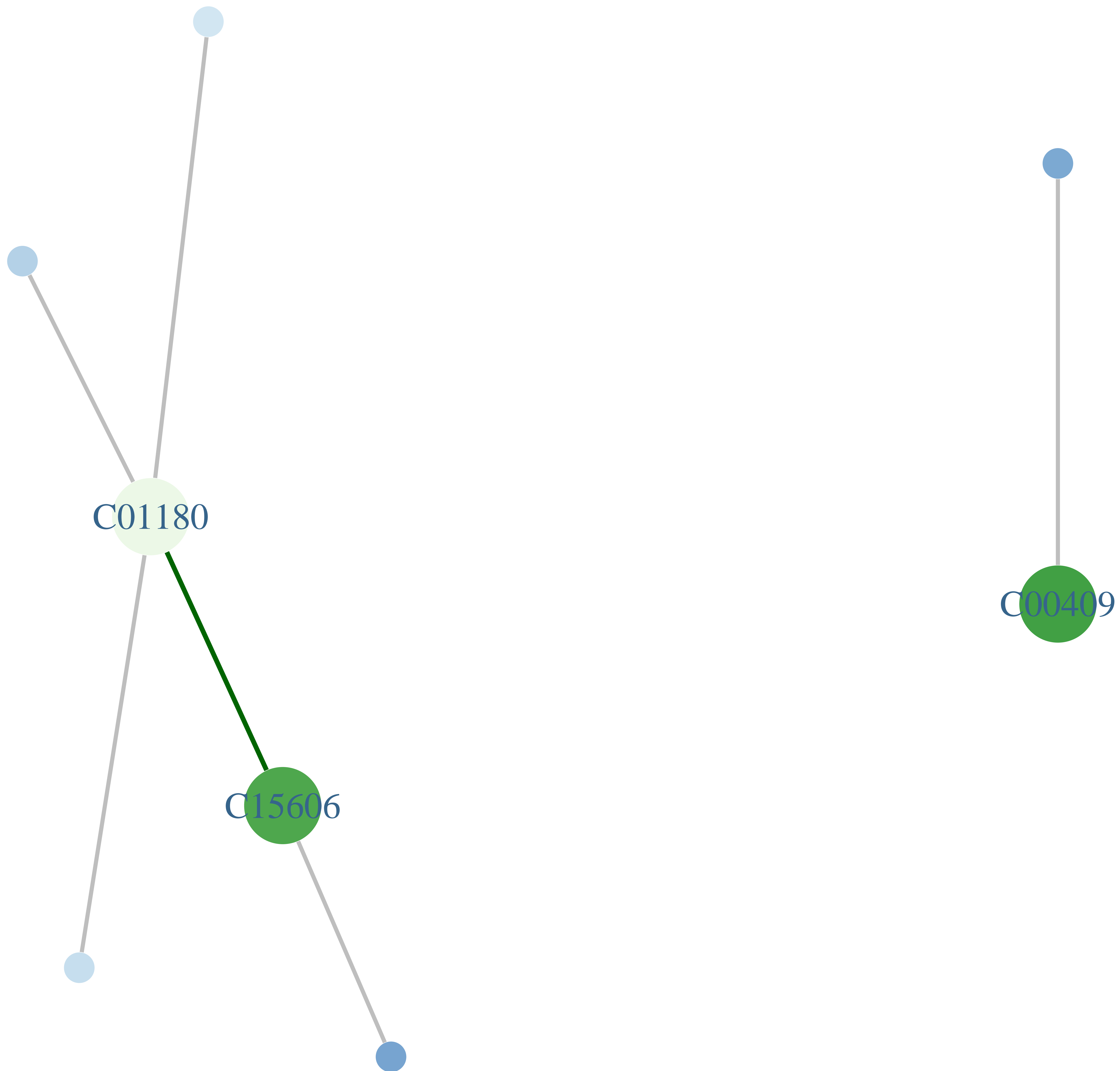
2-oxocarboxylic acid metabolism ; p-value: 0.176



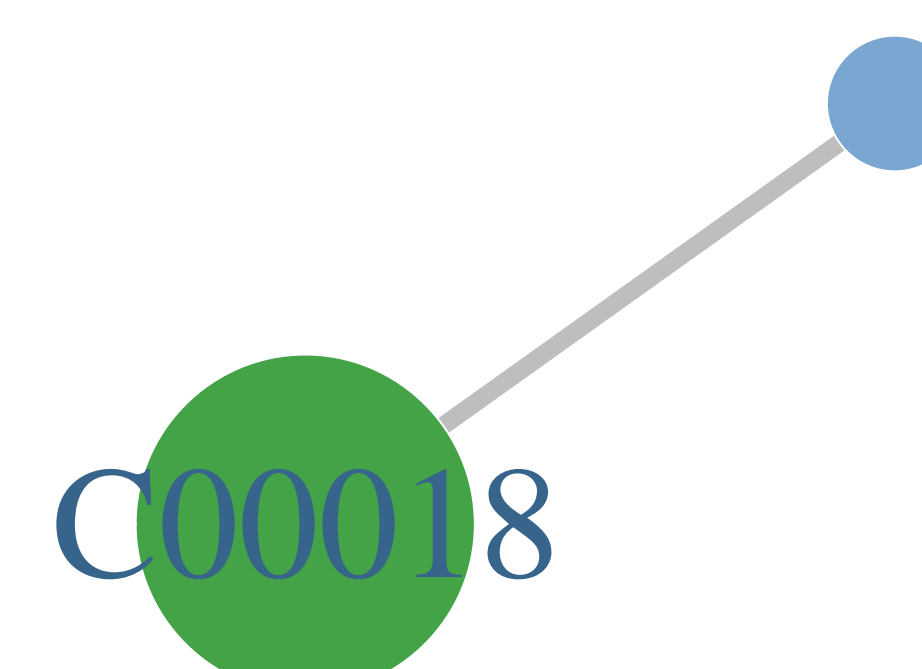
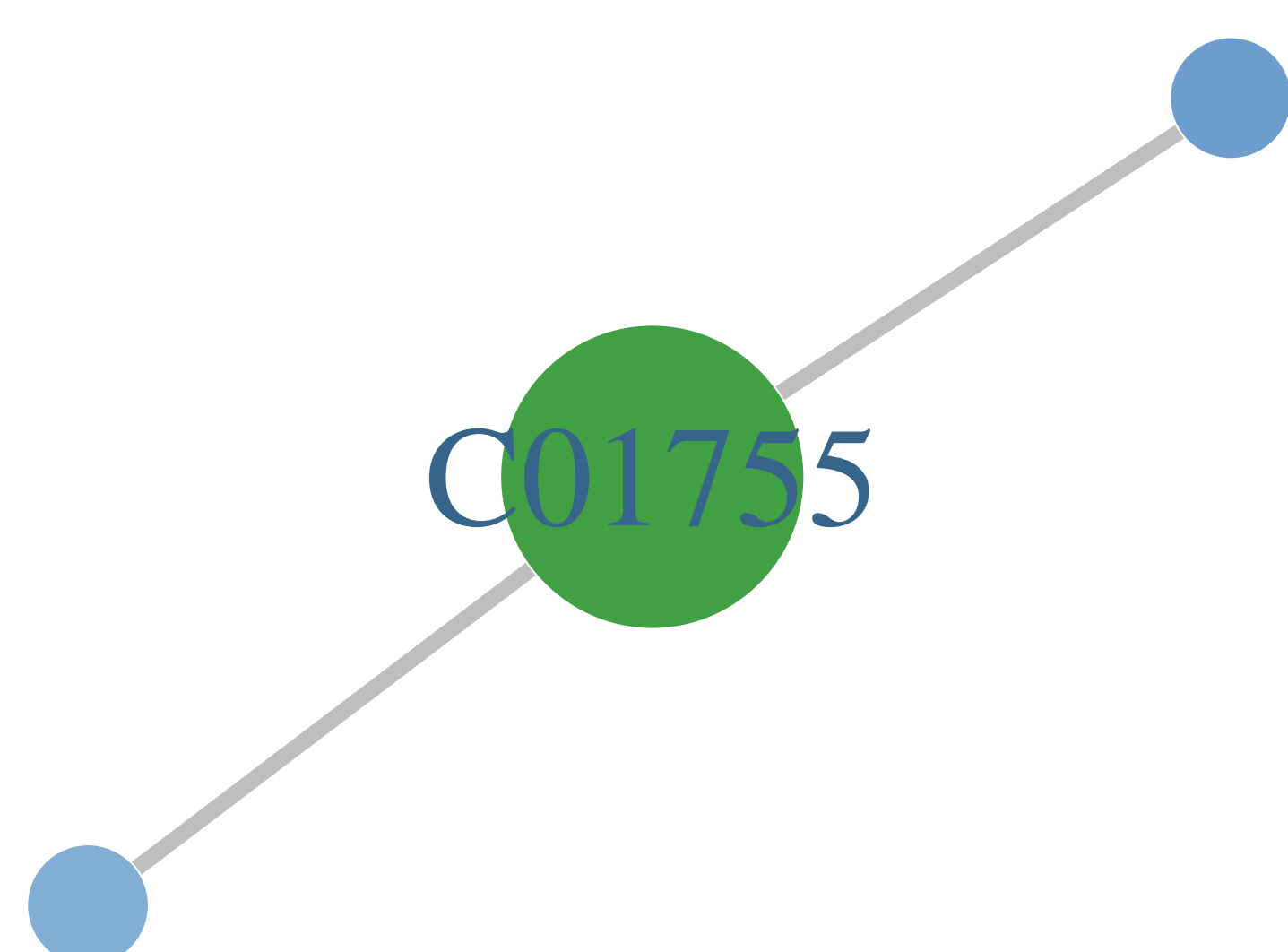
alanine and aspartate metabolism ; p-value: 0.014



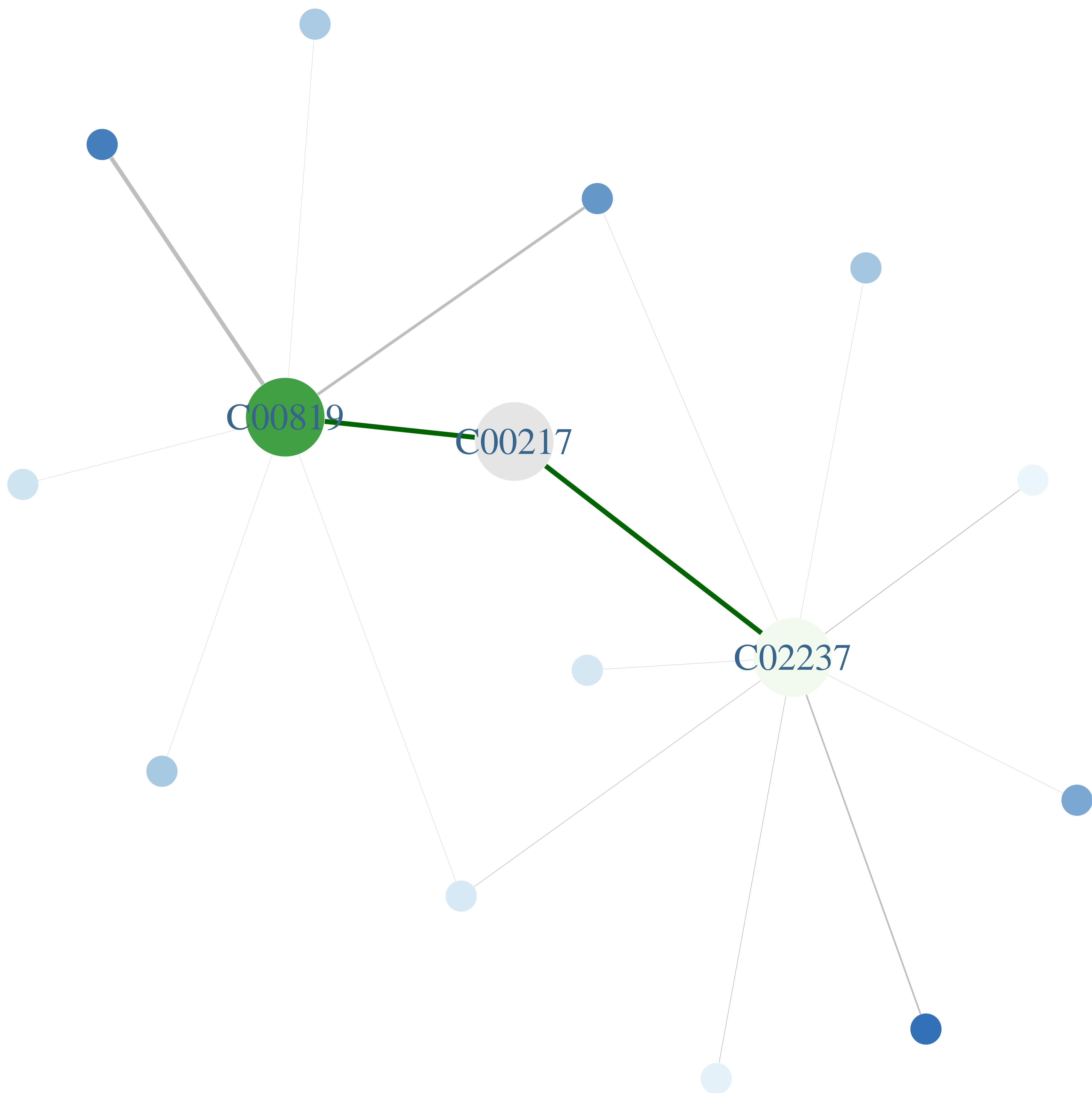
cysteine and methionine metabolism ; p-value: 0.377



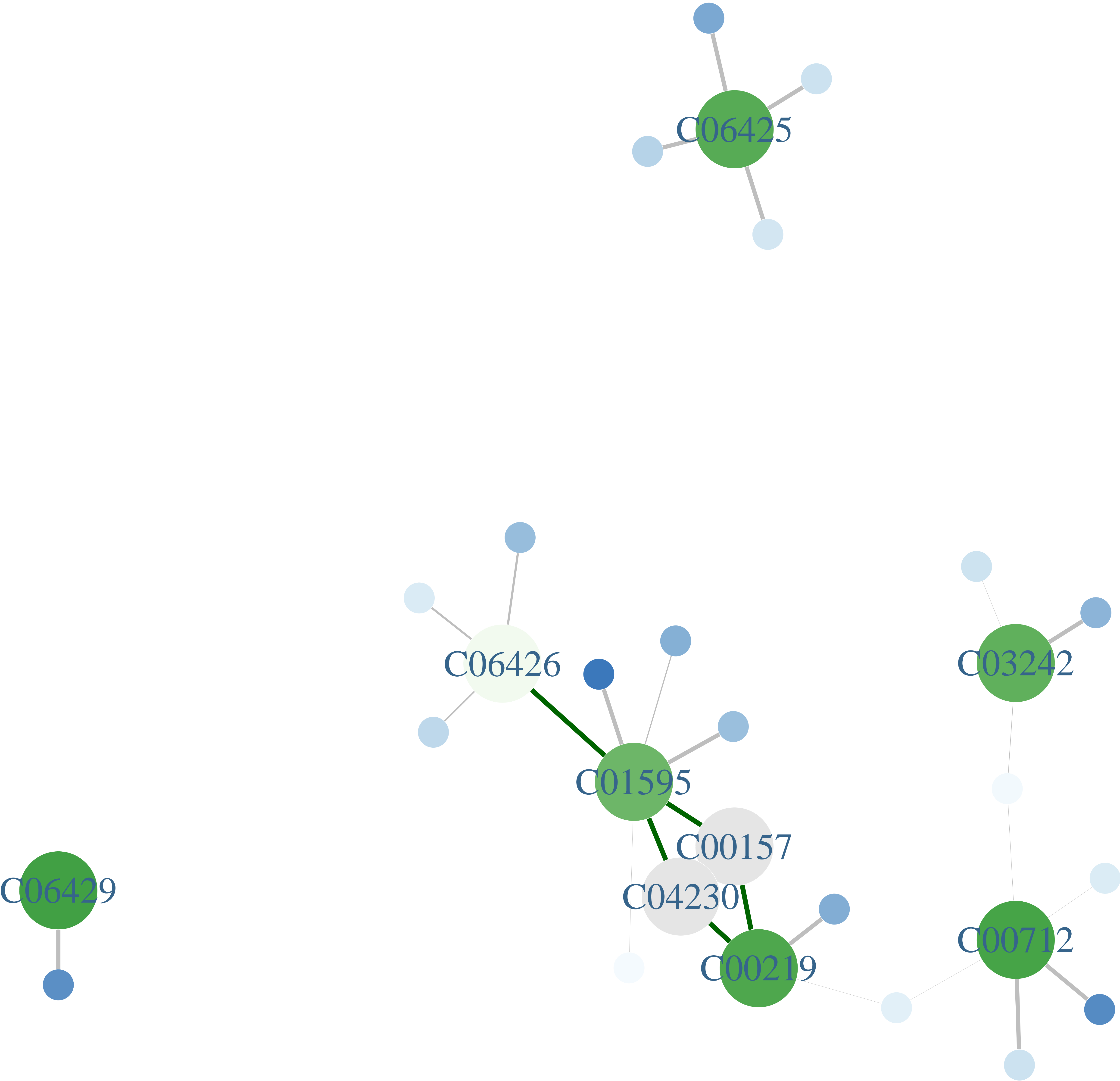
cysteine metabolism ; p-value: 0.23



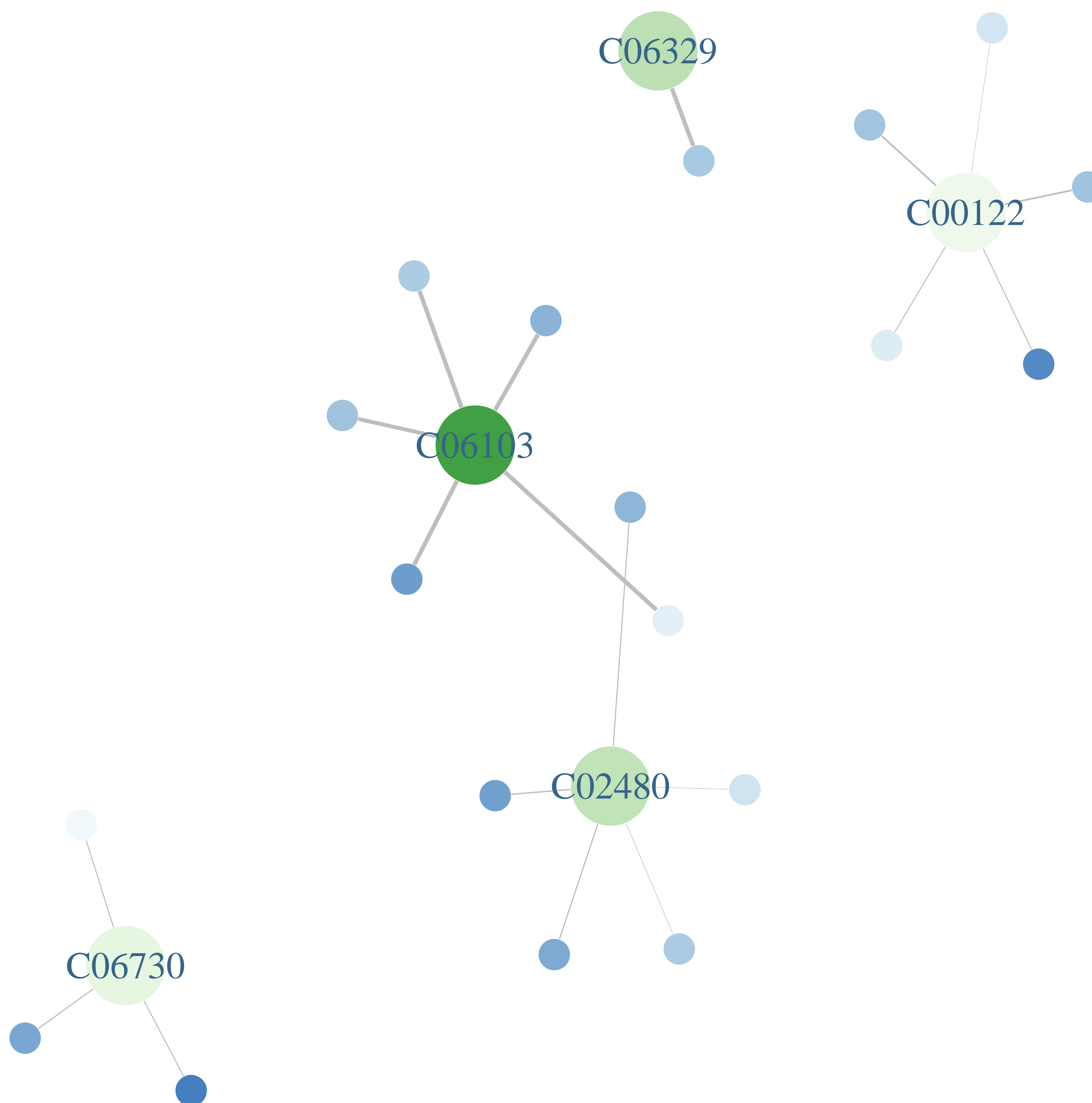
d-glutamine and d-glutamate metabolism ; p-value: 0.023



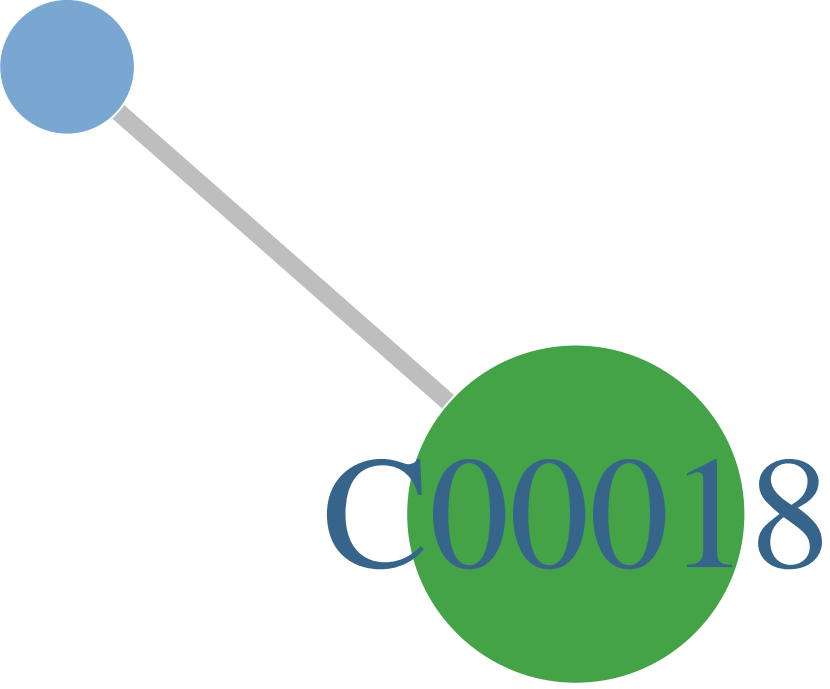
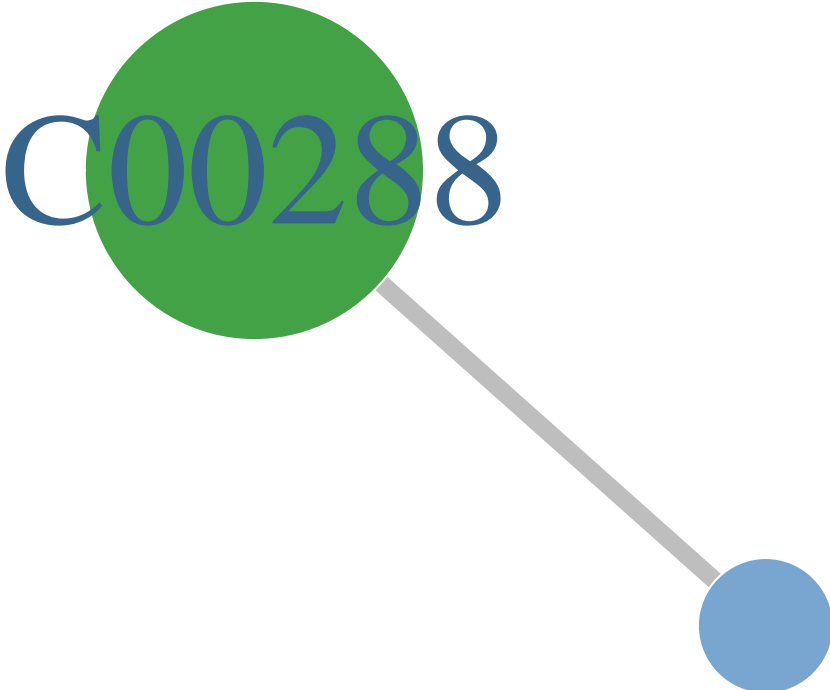
de novo fatty acid biosynthesis ; p-value: 0.007



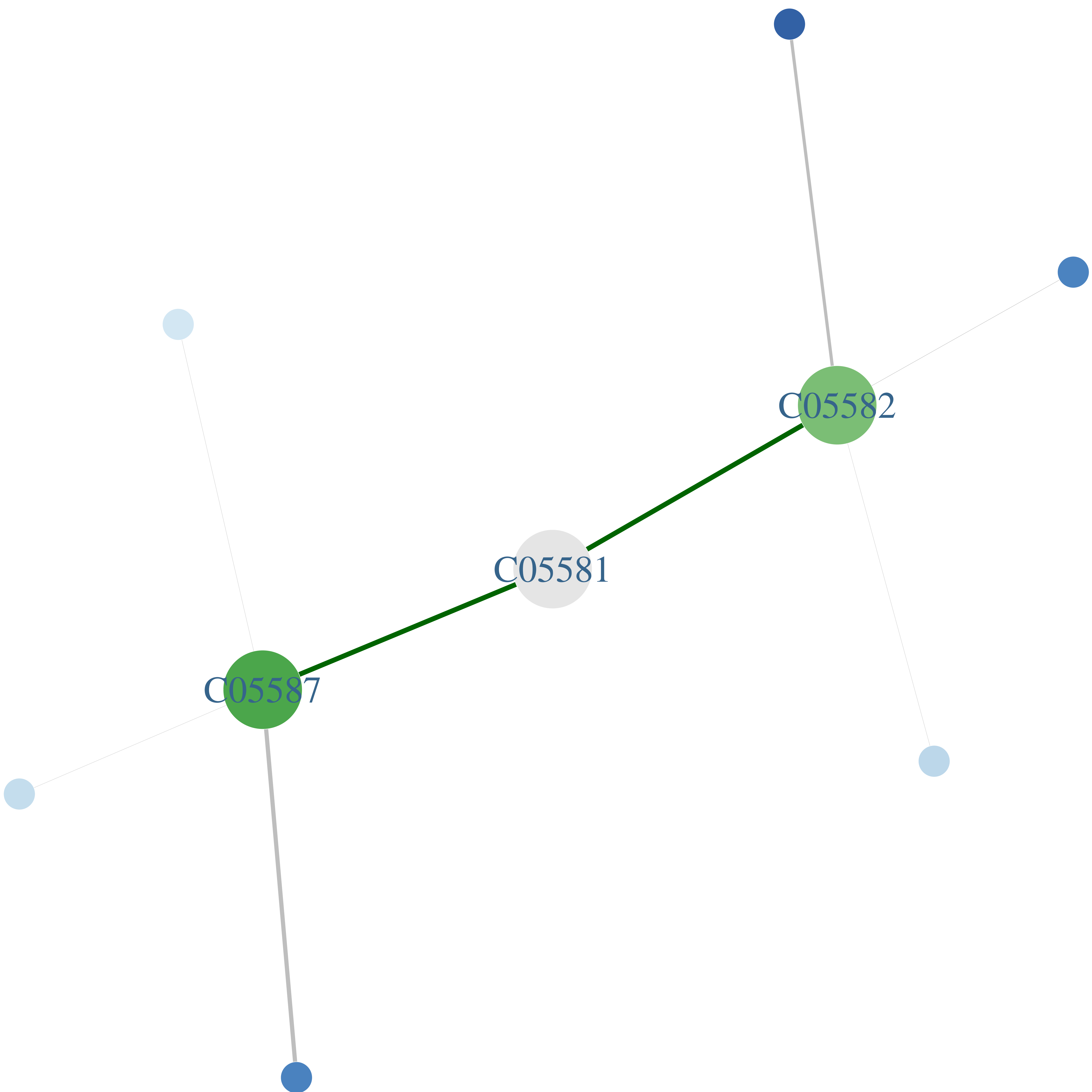
degradation of aromatic compounds ; p-value: 0.071



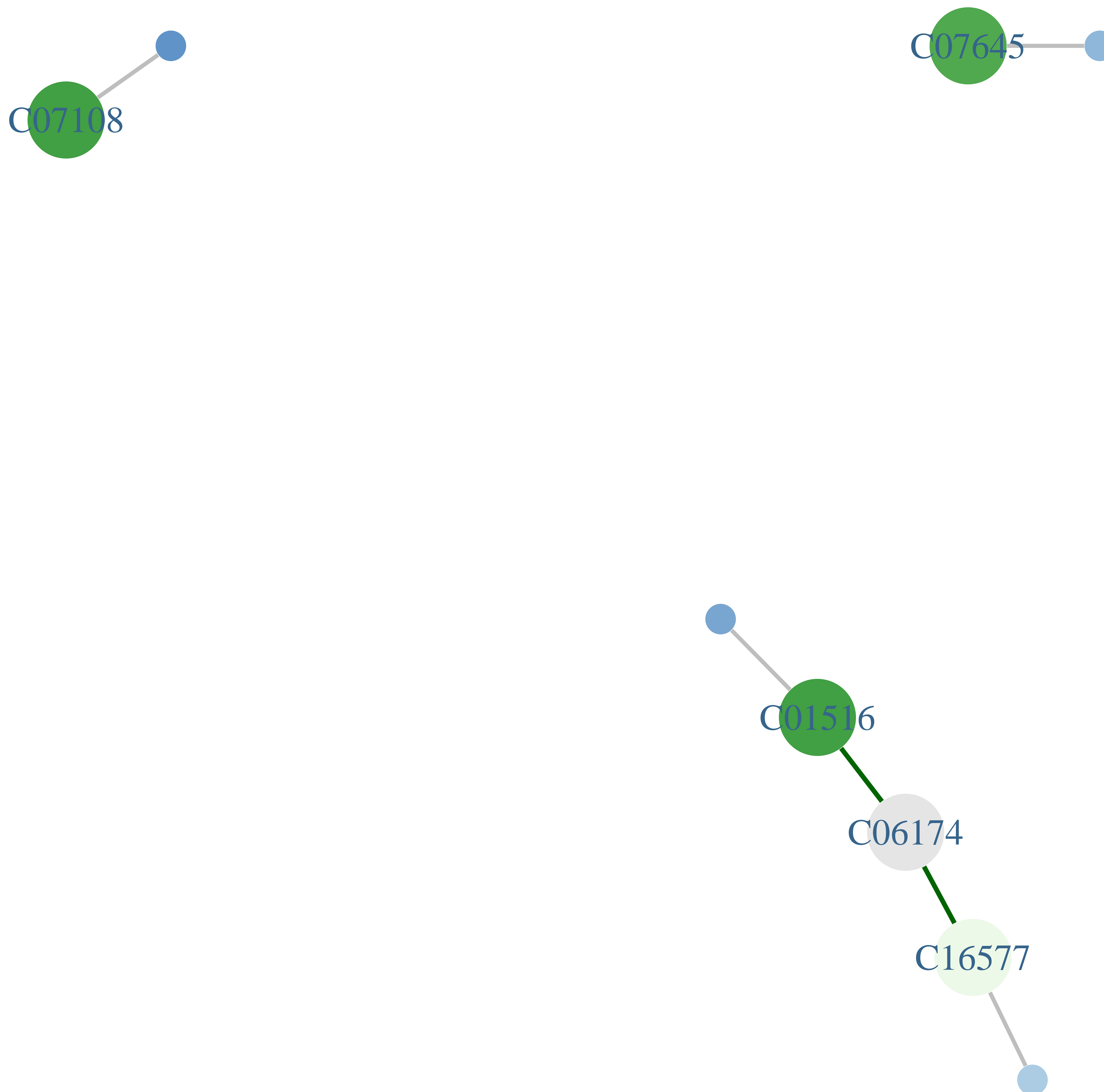
alanine metabolism ; p-value: 0.097



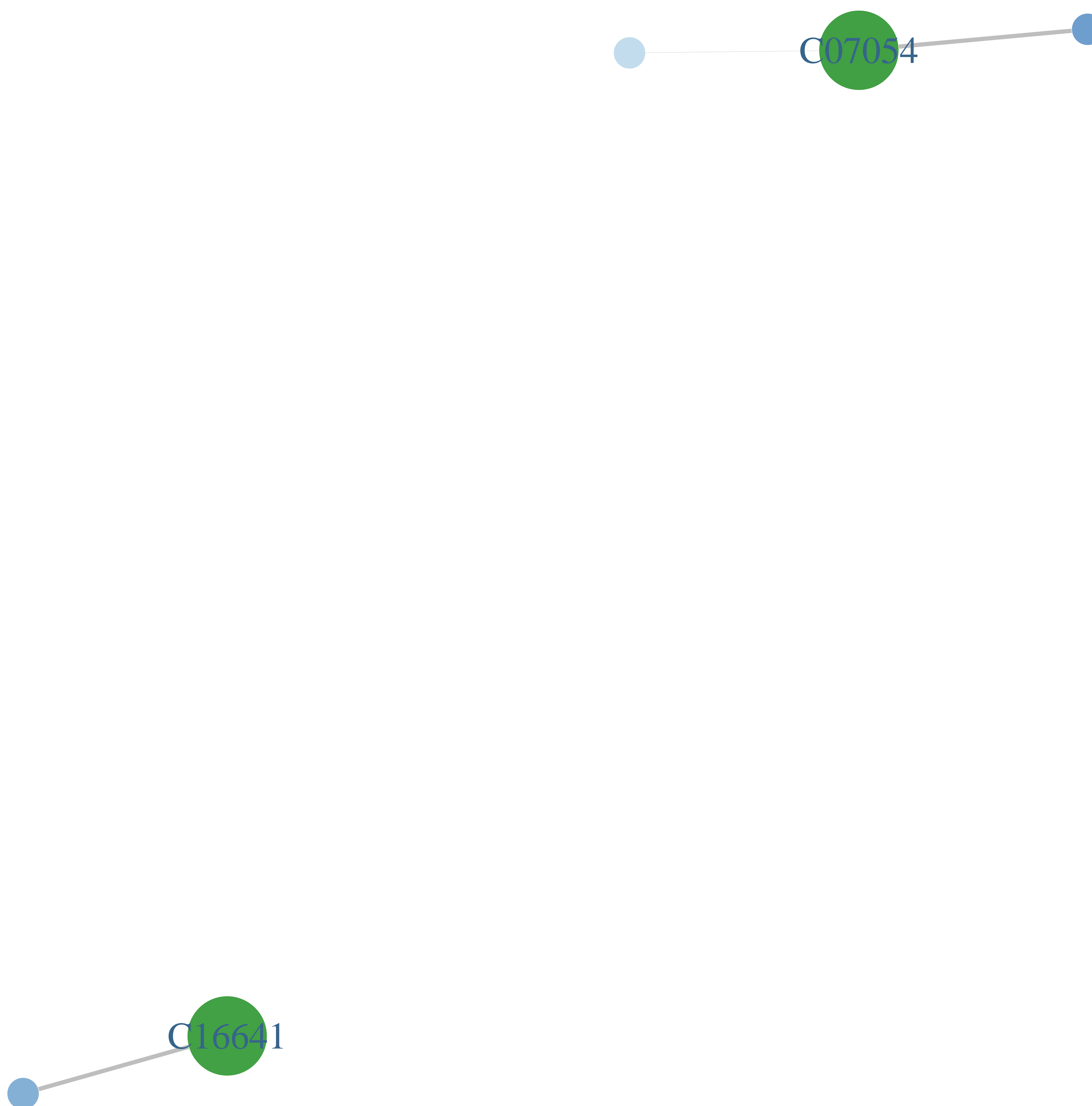
dopaminergic synapse ; p-value: 0.128



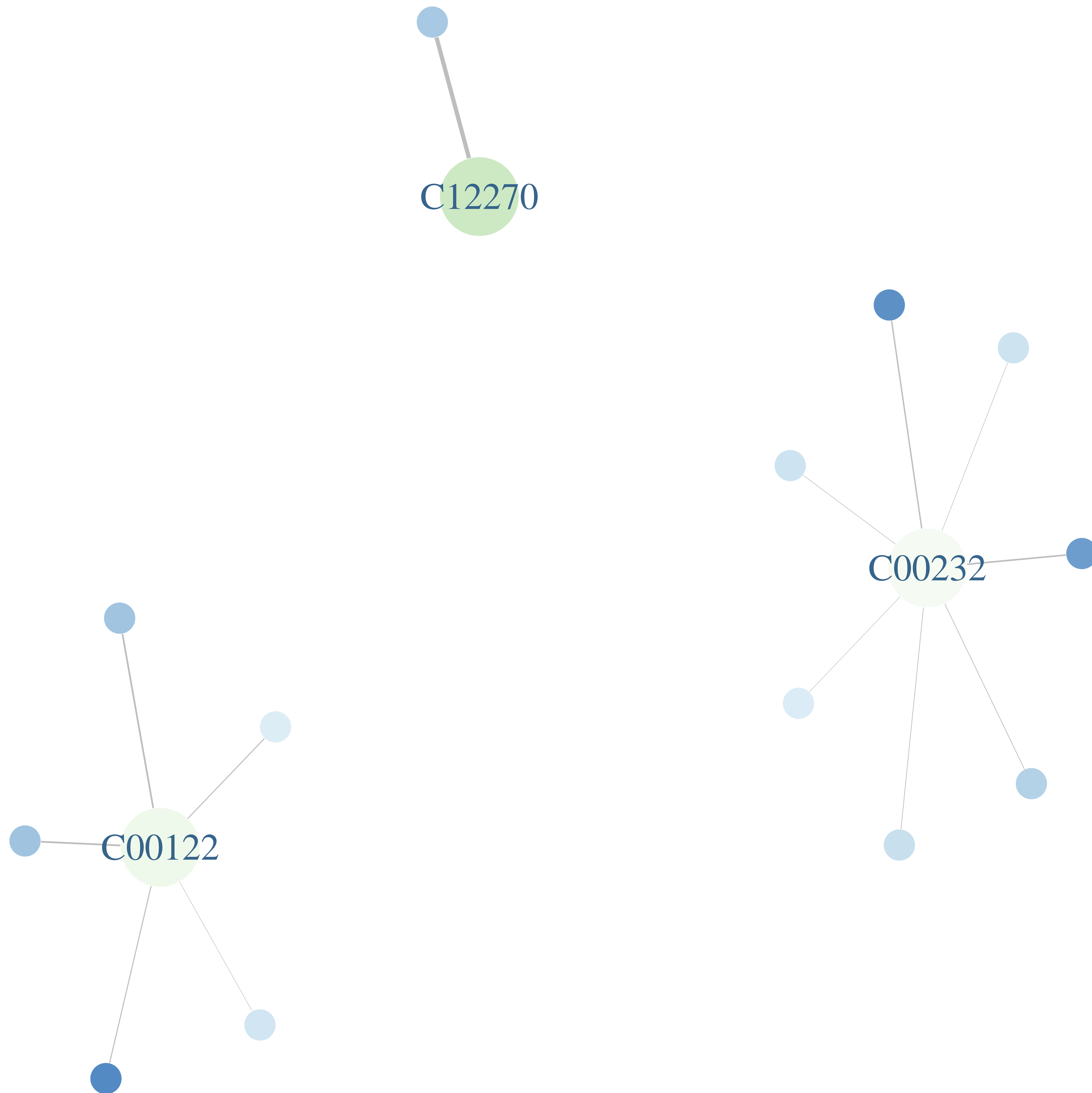
drug metabolism – cytochrome p450 ; p-value: 0.208



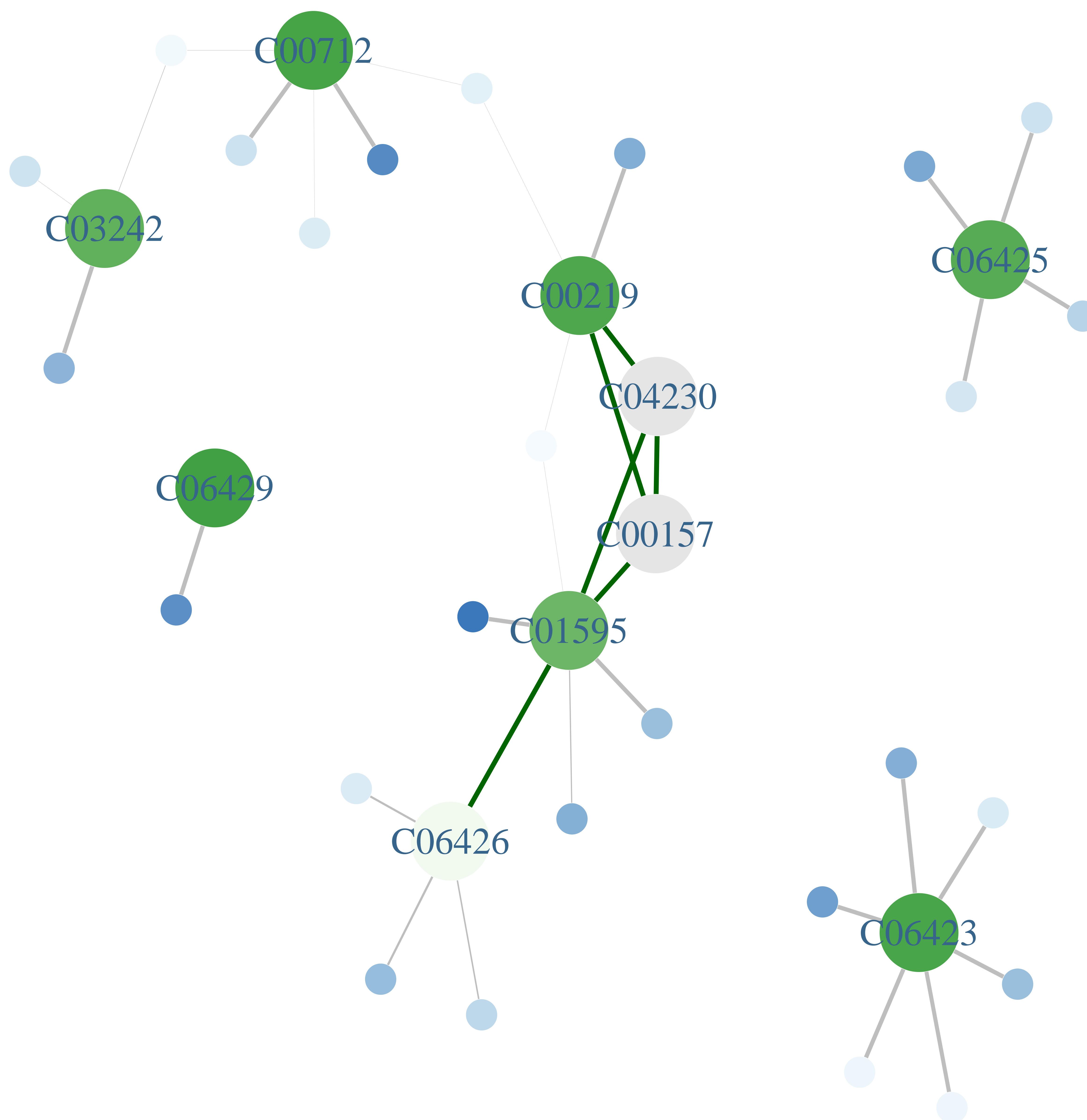
drug metabolism – other enzymes ; p-value: 0.721



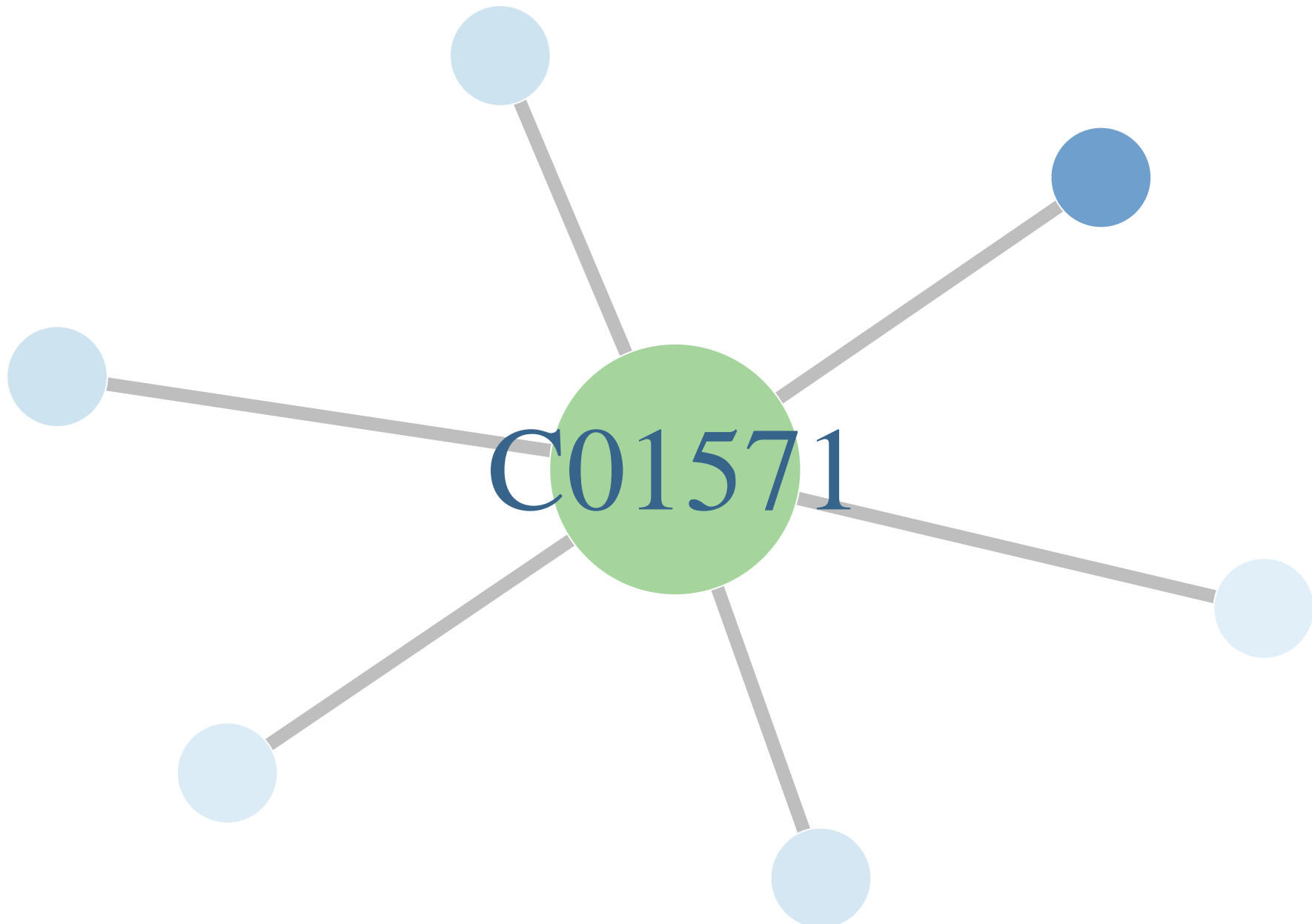
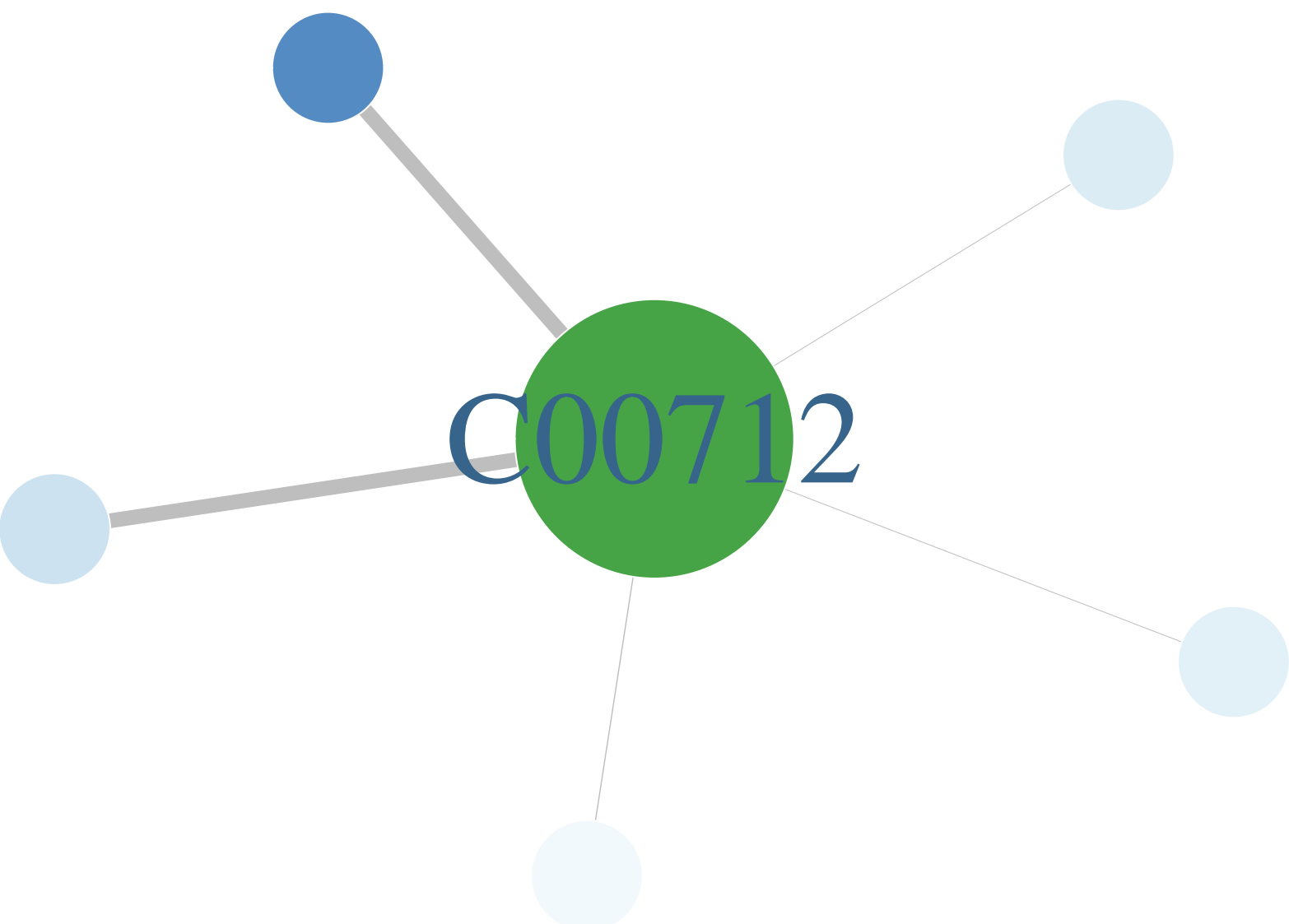
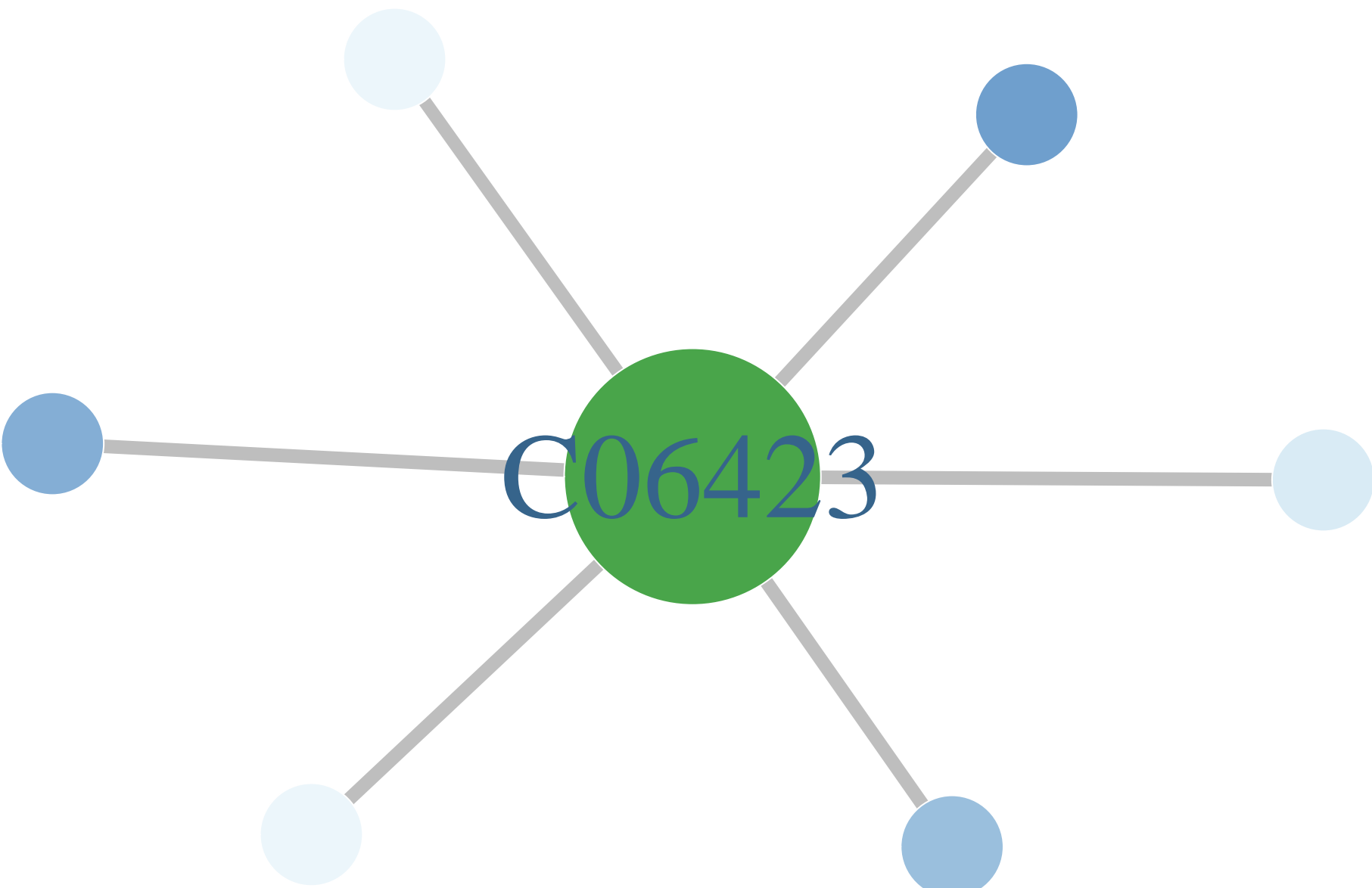
alanine, aspartate and glutamate metabolism ; p-value: 0.222



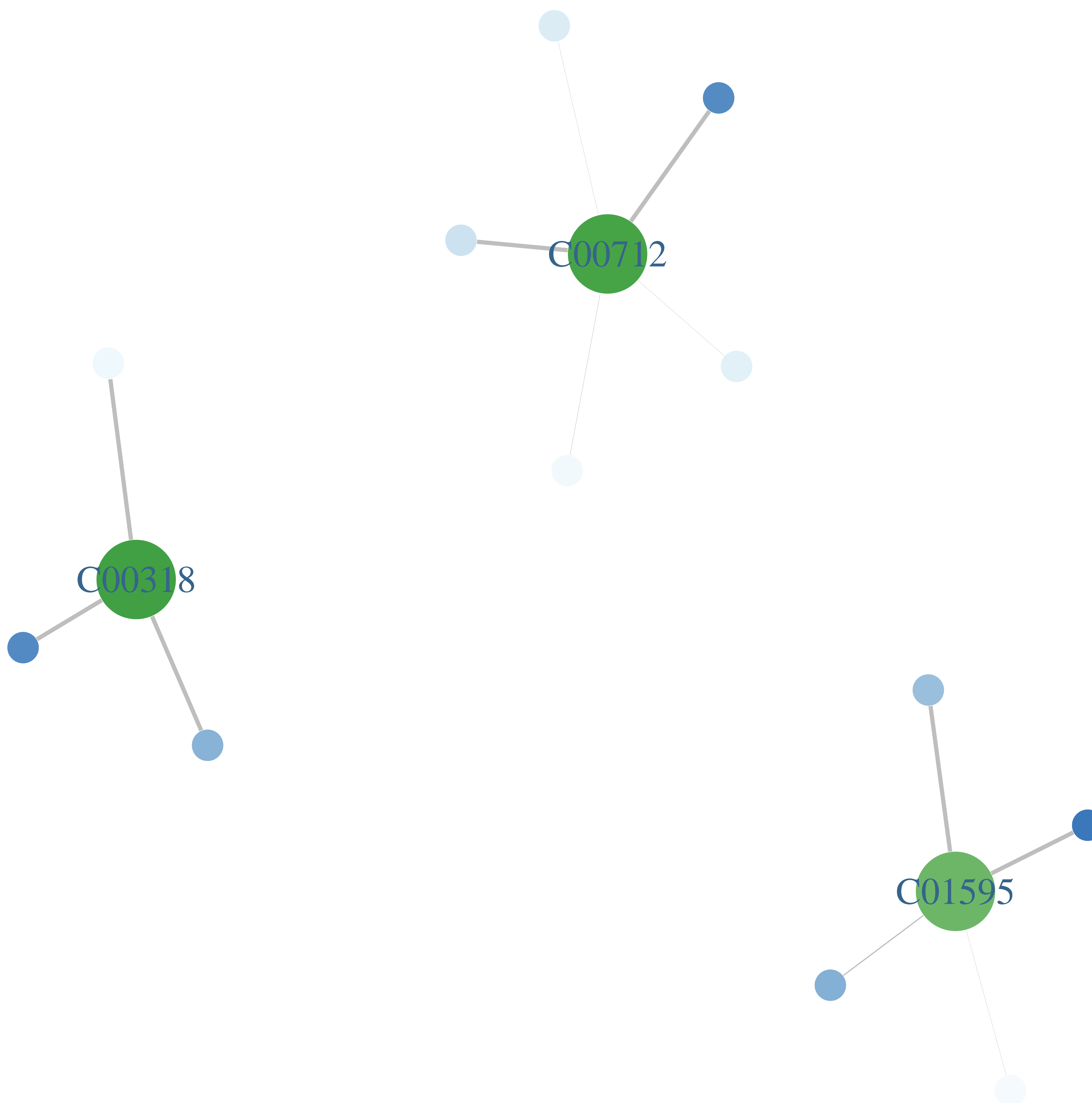
fatty acid activation ; p-value: 0.002



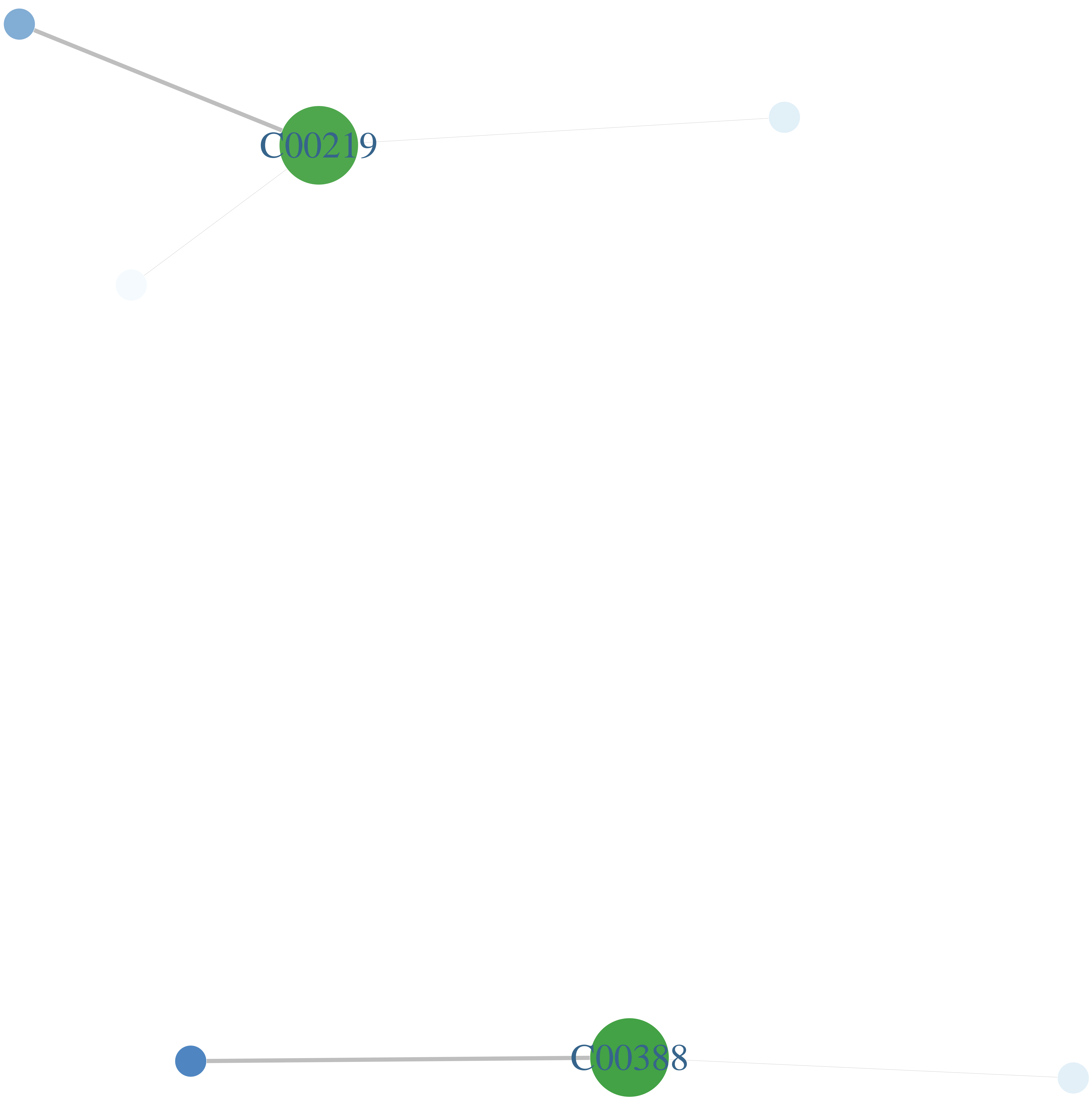
fatty acid biosynthesis ; p-value: 0.108



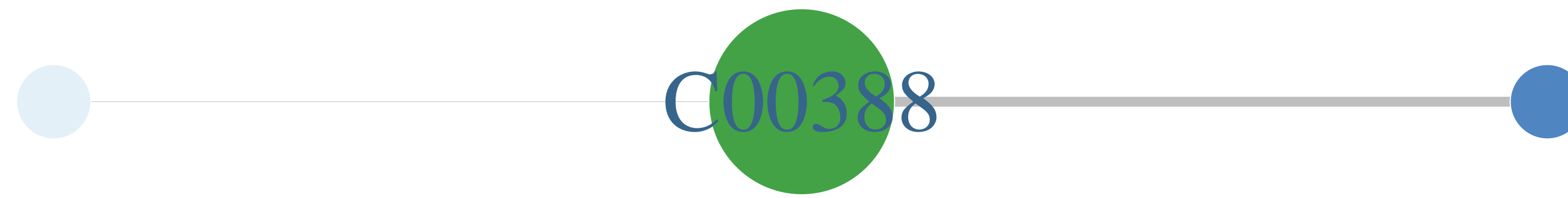
fatty acid metabolism ; p-value: 0.868



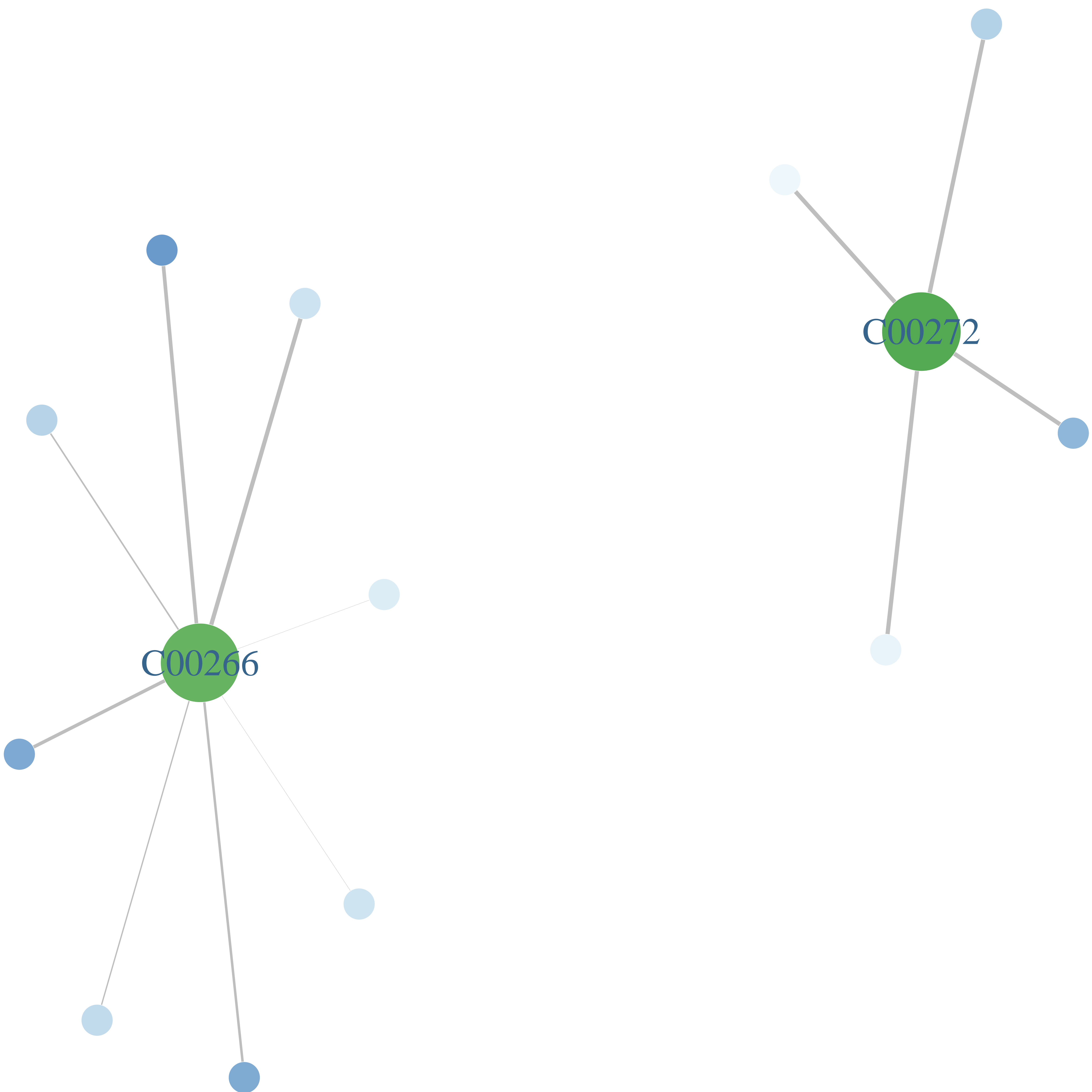
fc epsilon receptor i signaling in mast cells ; p-value: 0.161



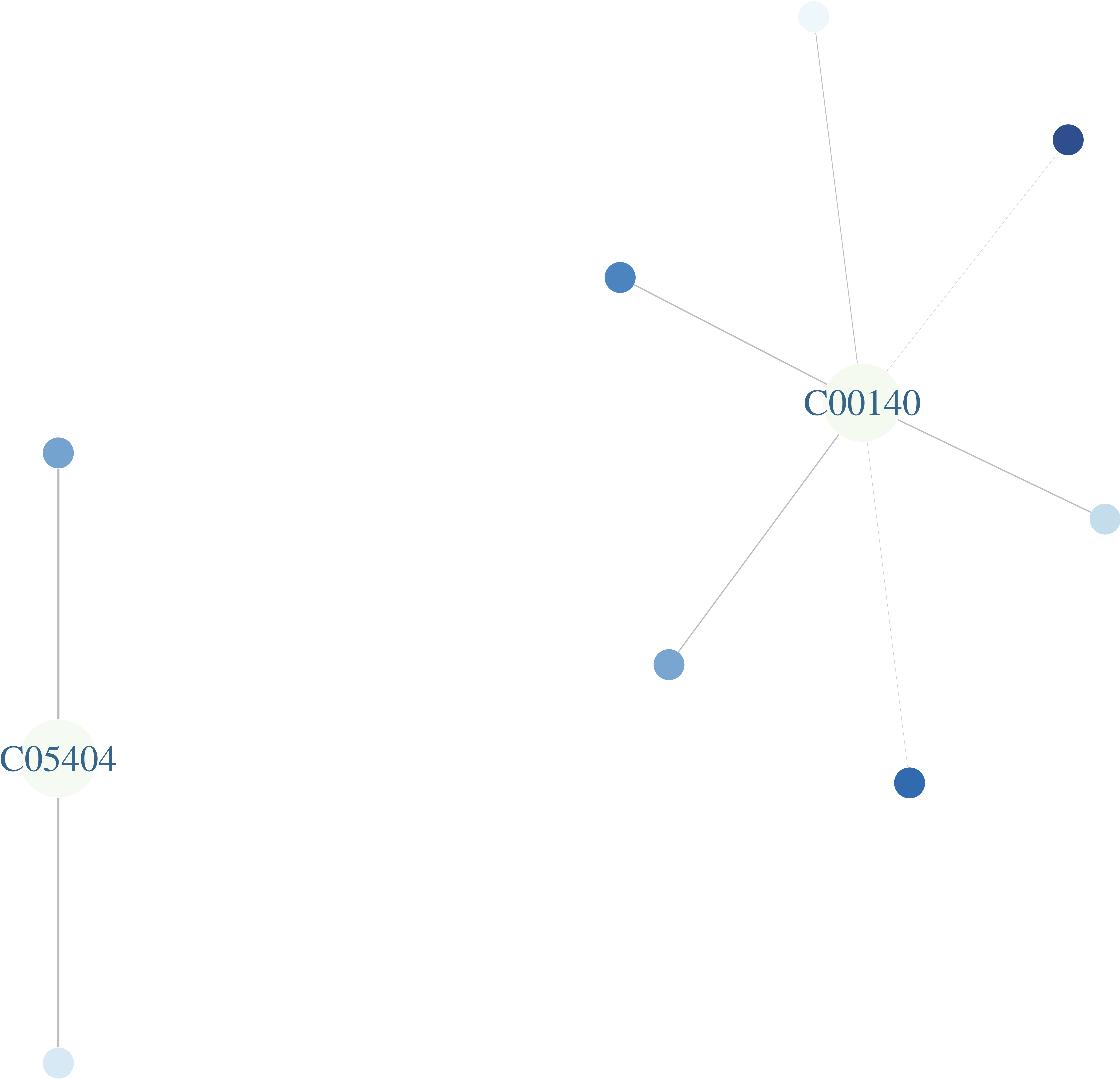
fc epsilon ri signaling pathway ; p-value: 0.128



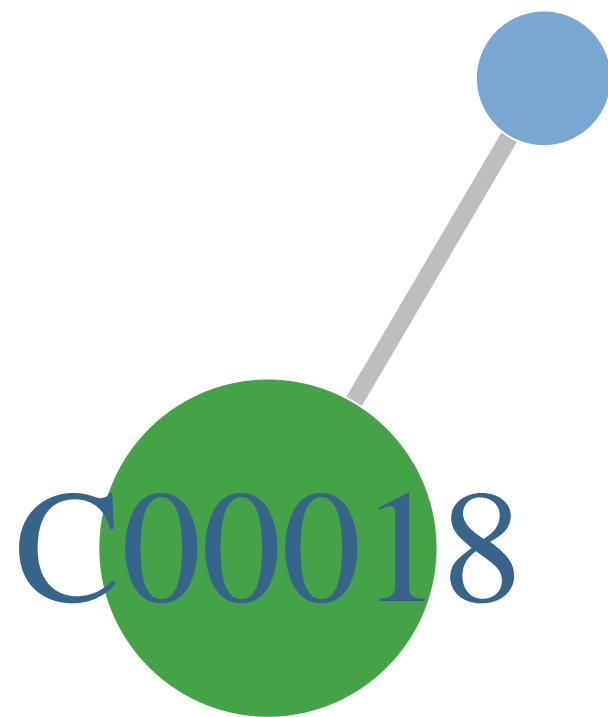
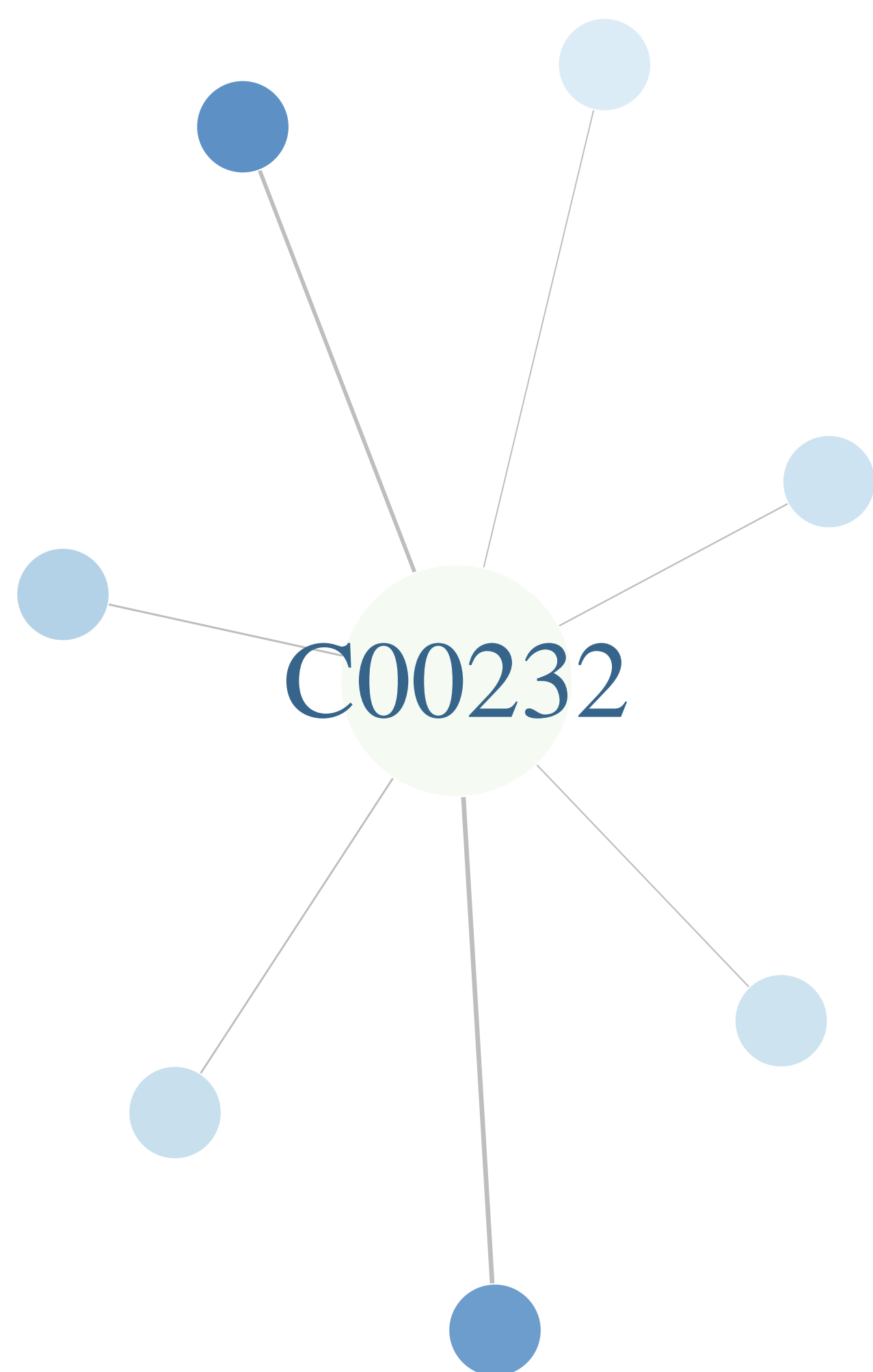
folate biosynthesis ; p-value: 0.403



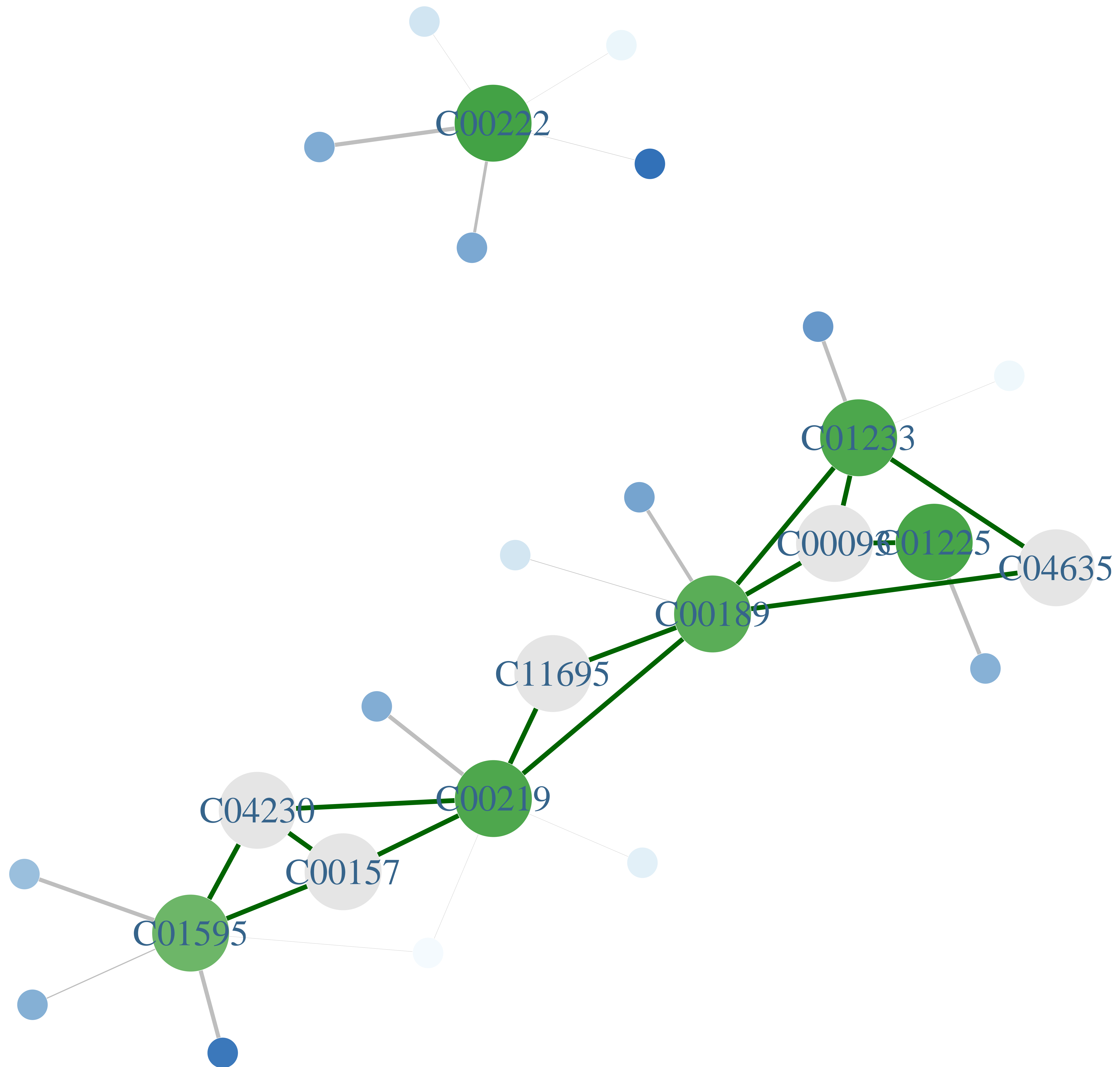
galactose metabolism ; p-value: 0.805



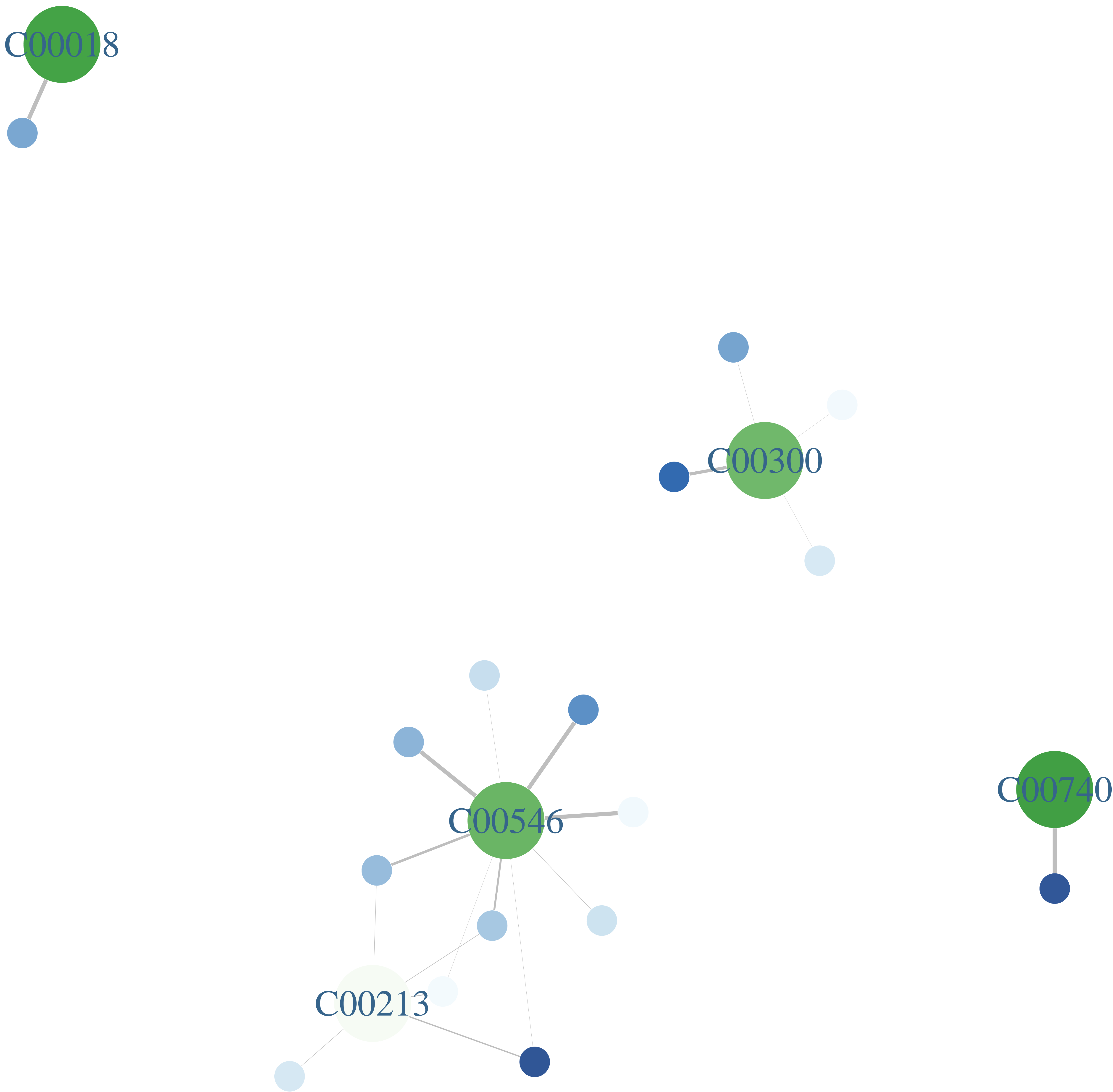
glutamate metabolism ; p-value: 0.584



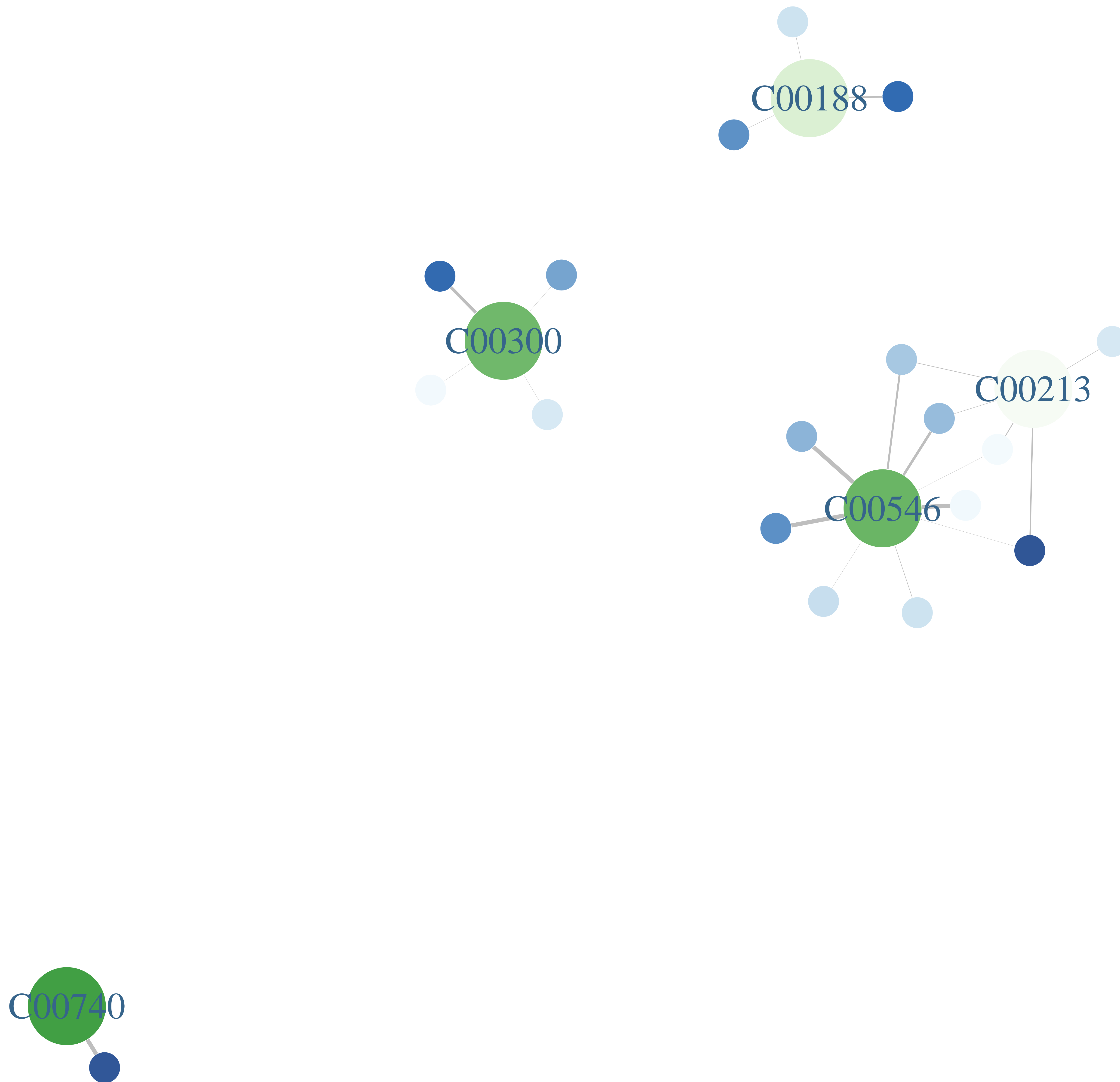
glycerophospholipid metabolism ; p-value: 0.302



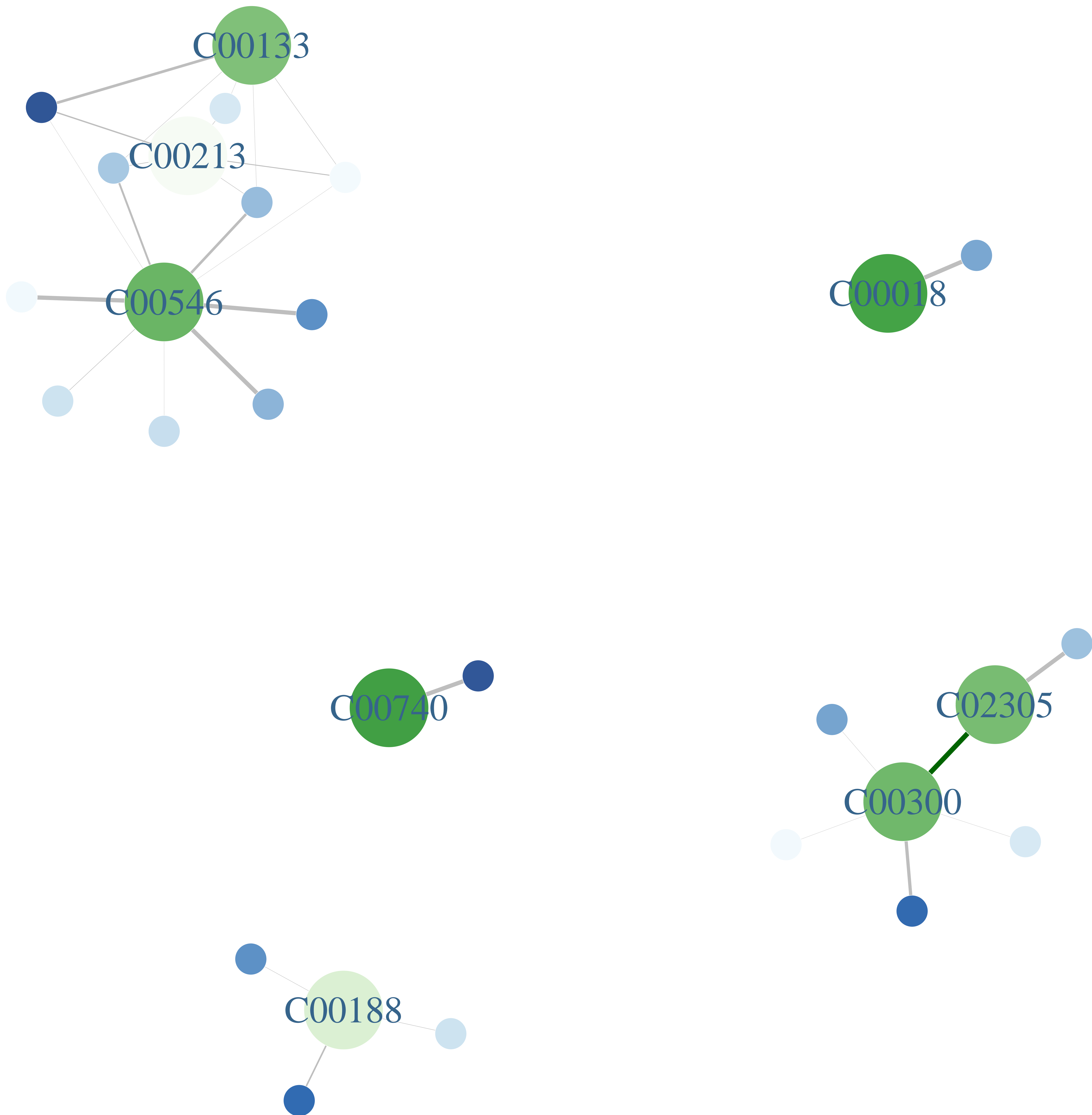
glycine and serine metabolism ; p-value: 0.061



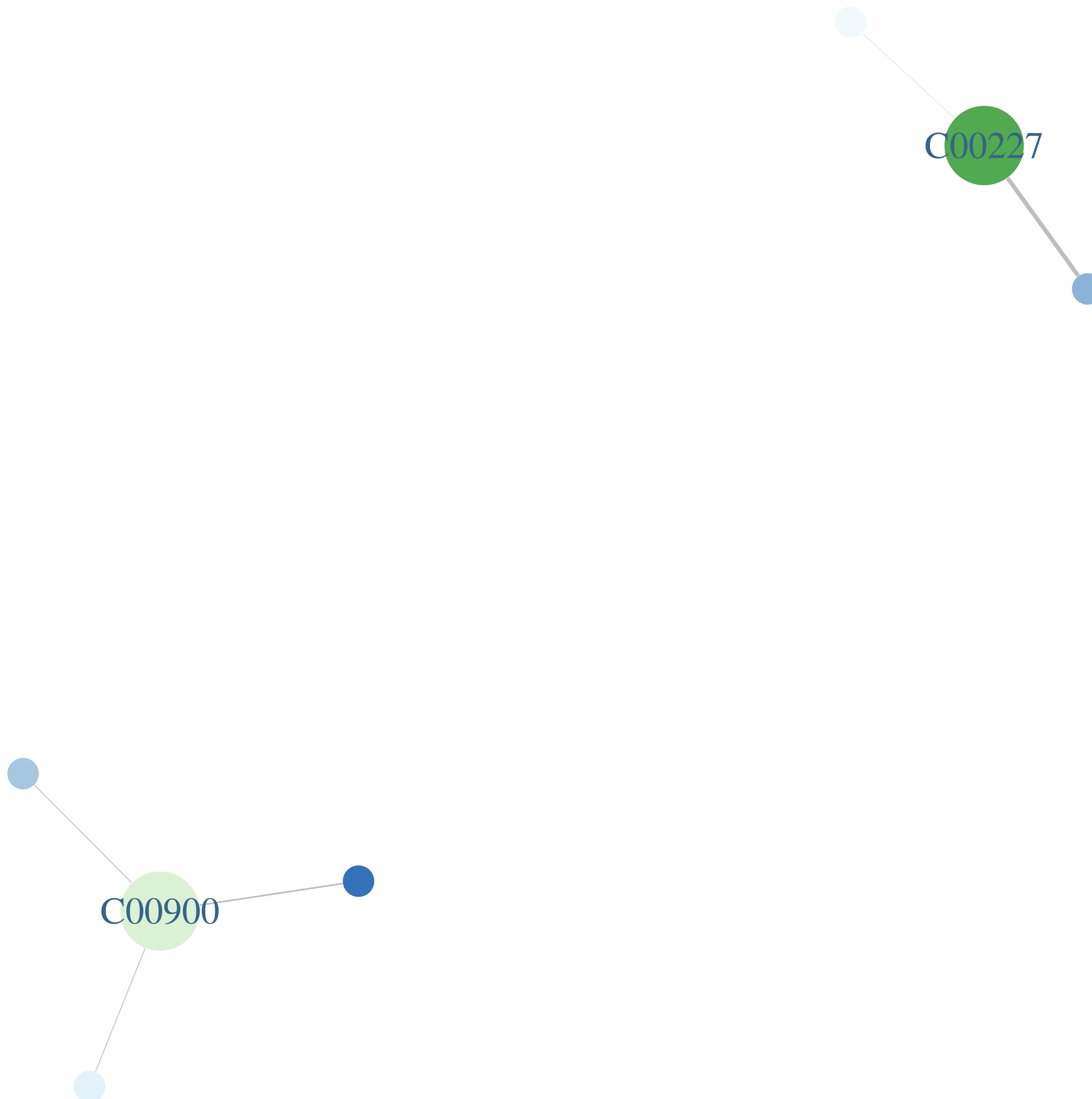
glycine, serine and threonine metabolism ; p-value: 0.131



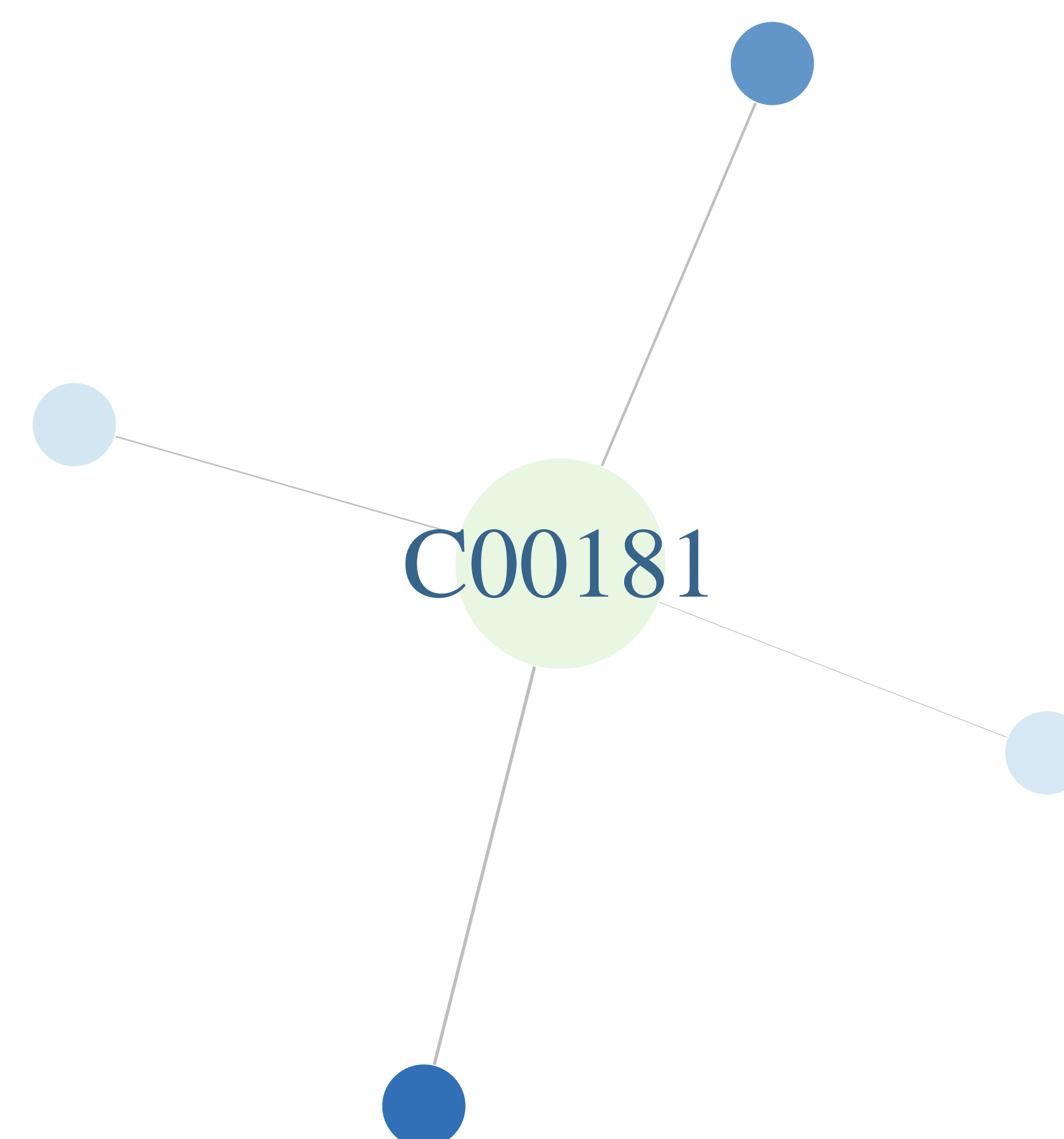
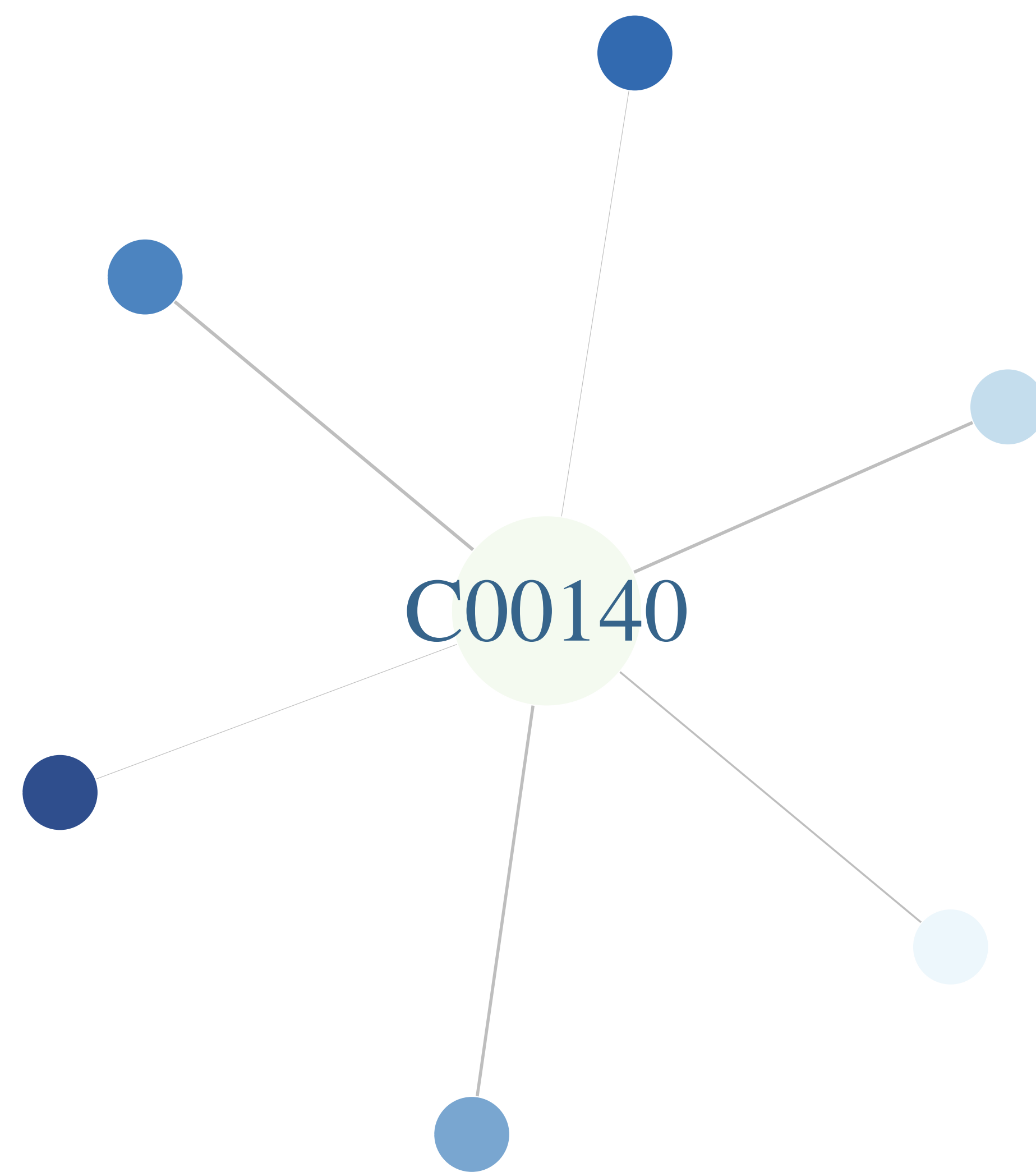
glycine, serine, alanine and threonine metabolism ; p-value: 0.065



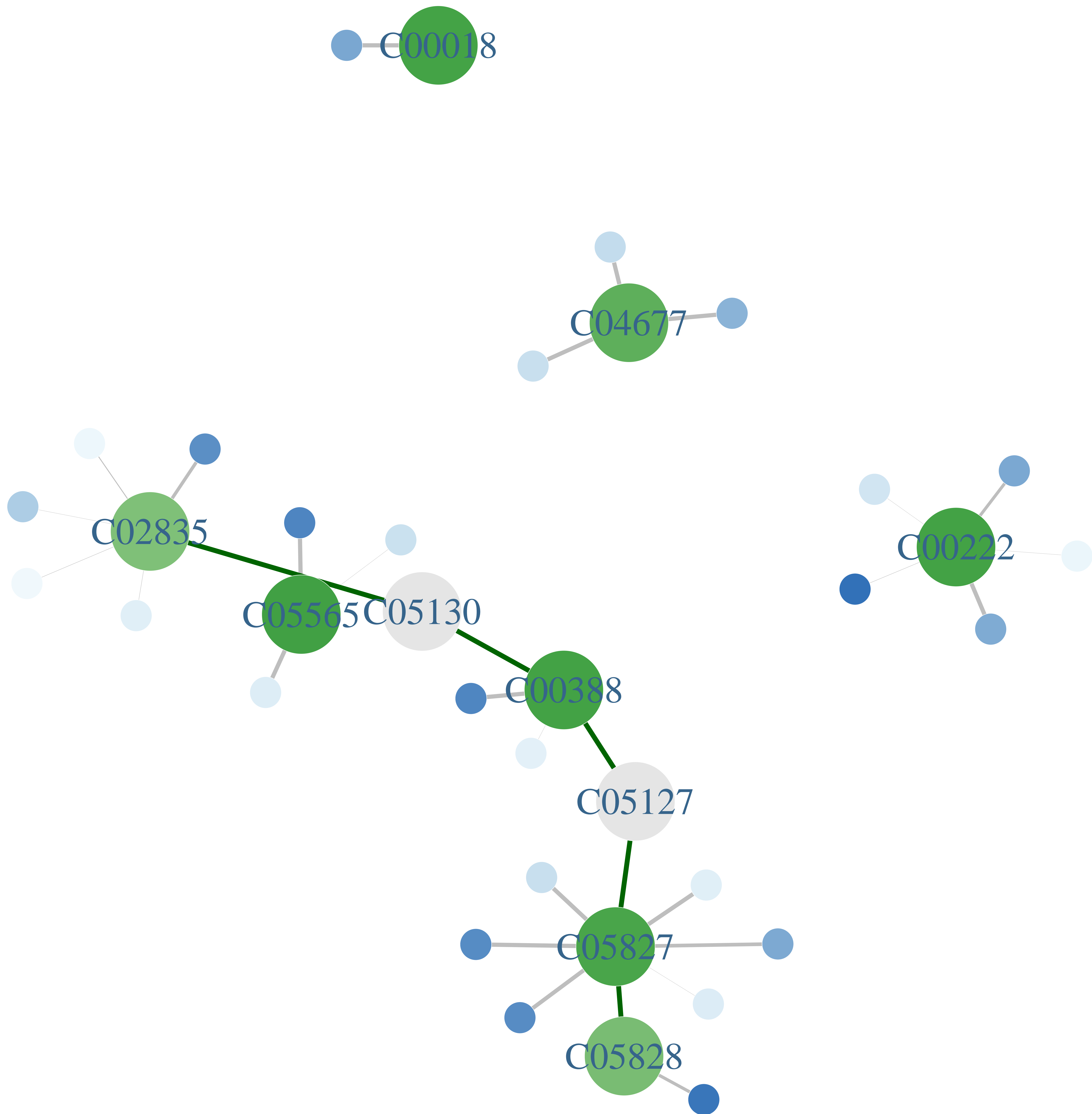
glycolysis and gluconeogenesis ; p-value: 0.68



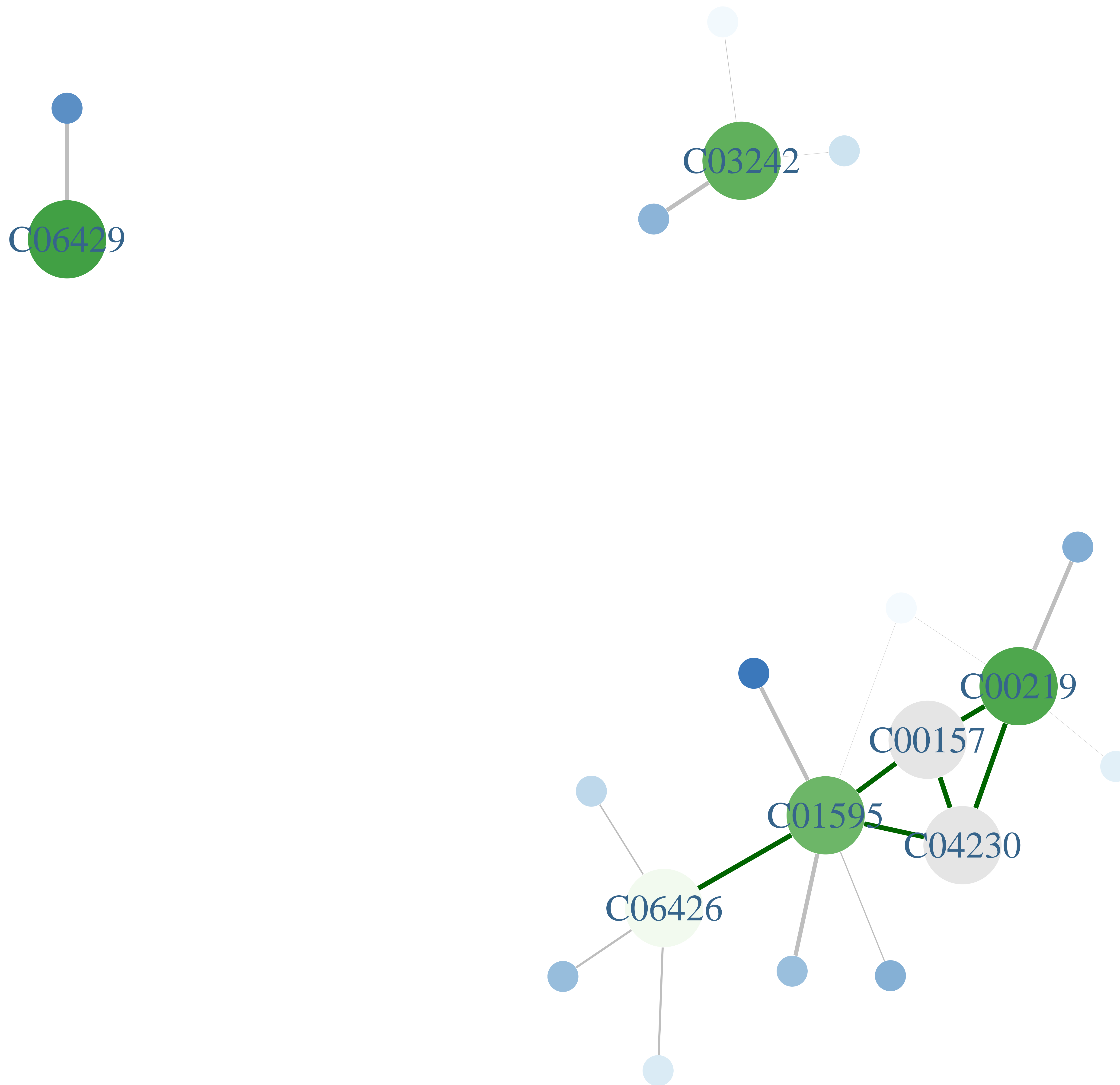
heparan sulfate degradation ; p-value: 0.069



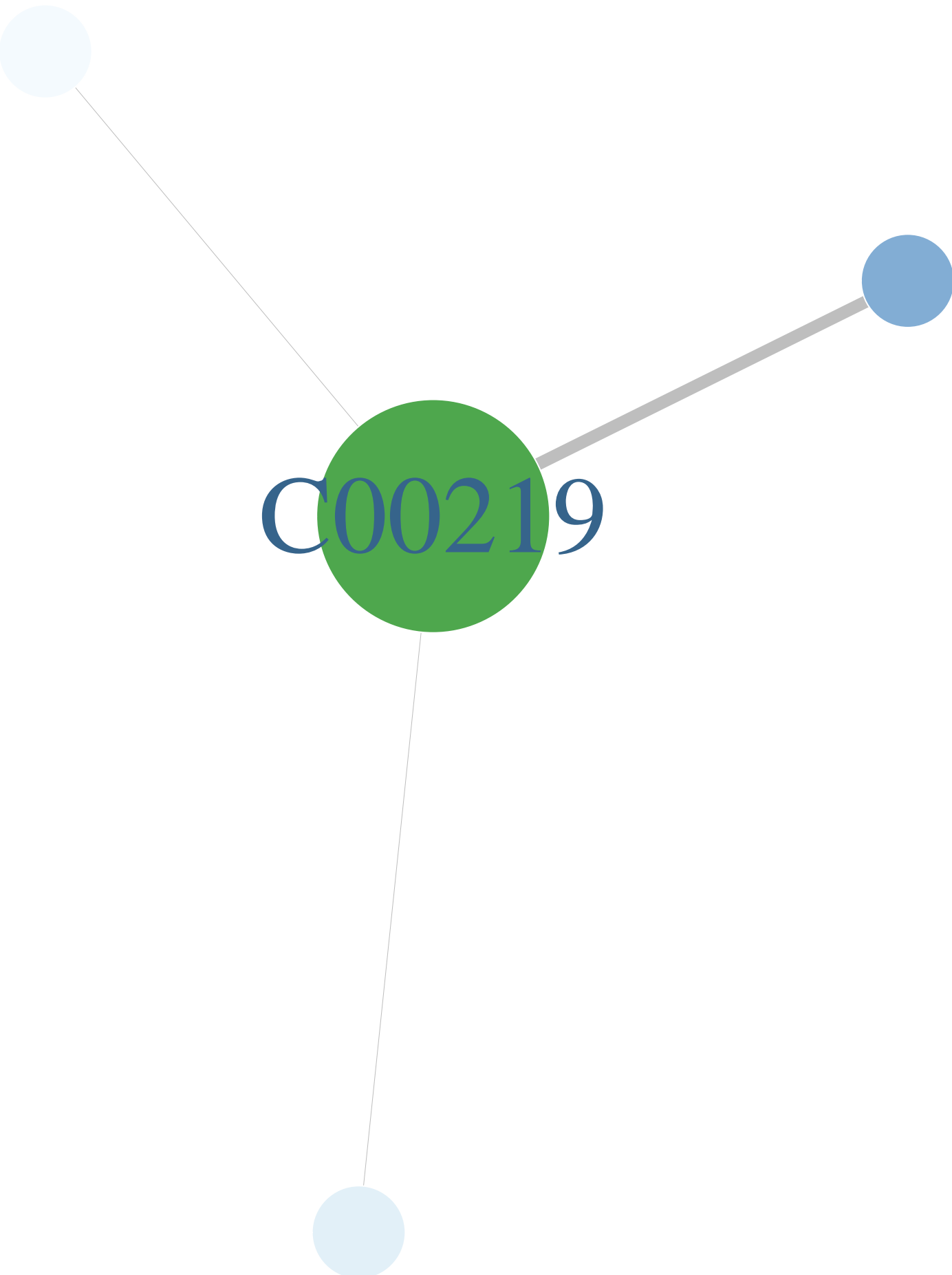
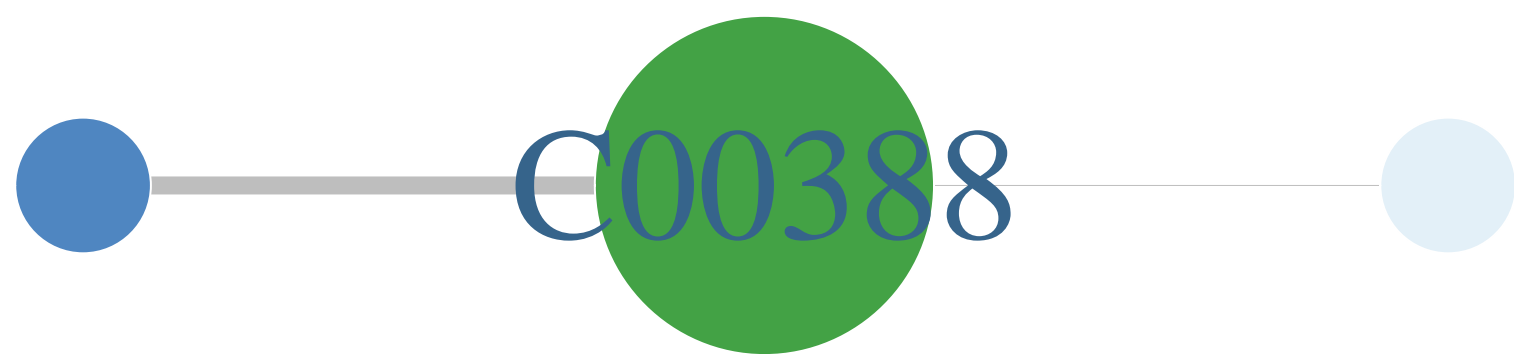
histidine metabolism ; p-value: 0.002



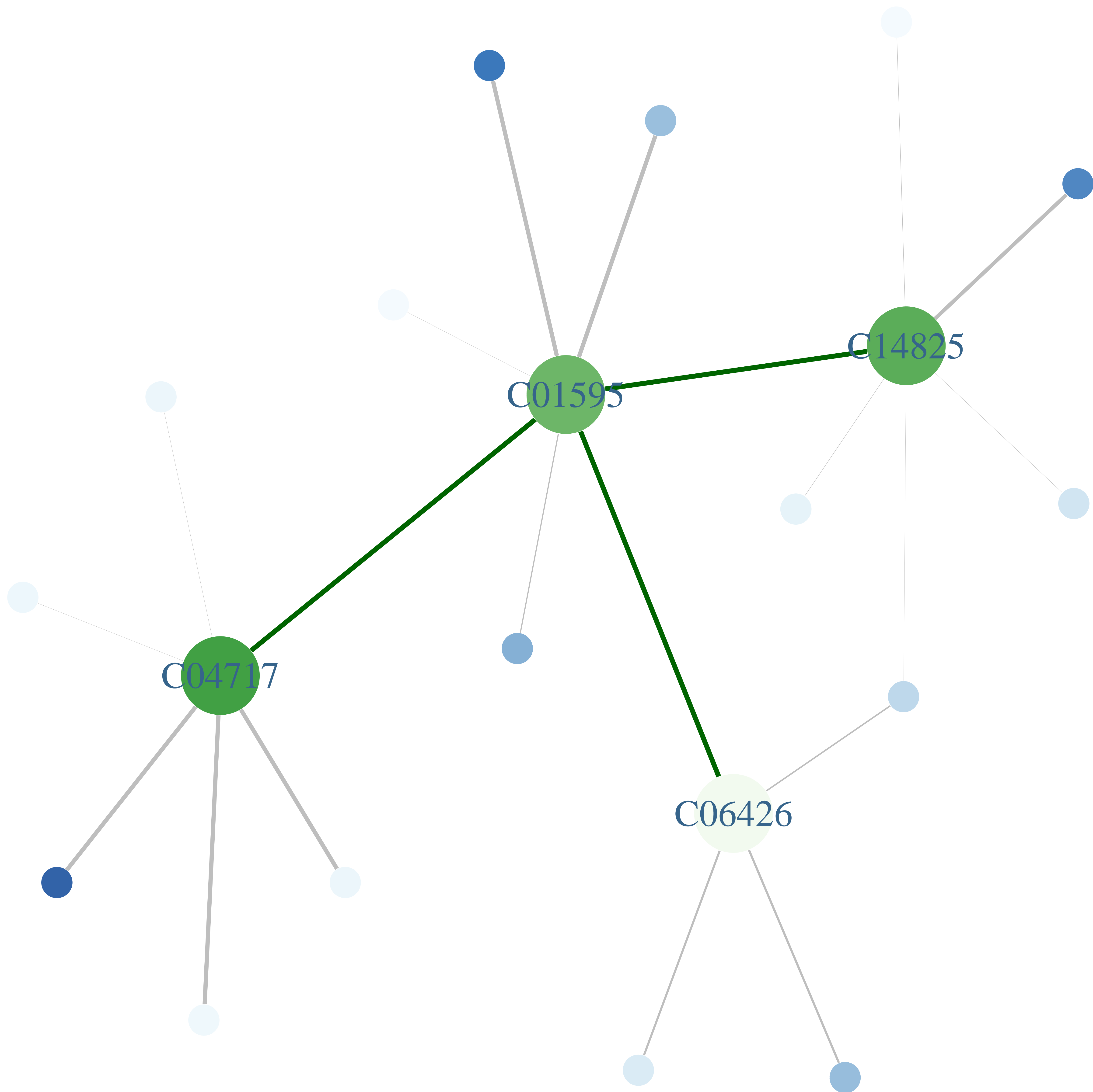
alpha linolenic acid and linoleic acid metabolism ; p-value: 0



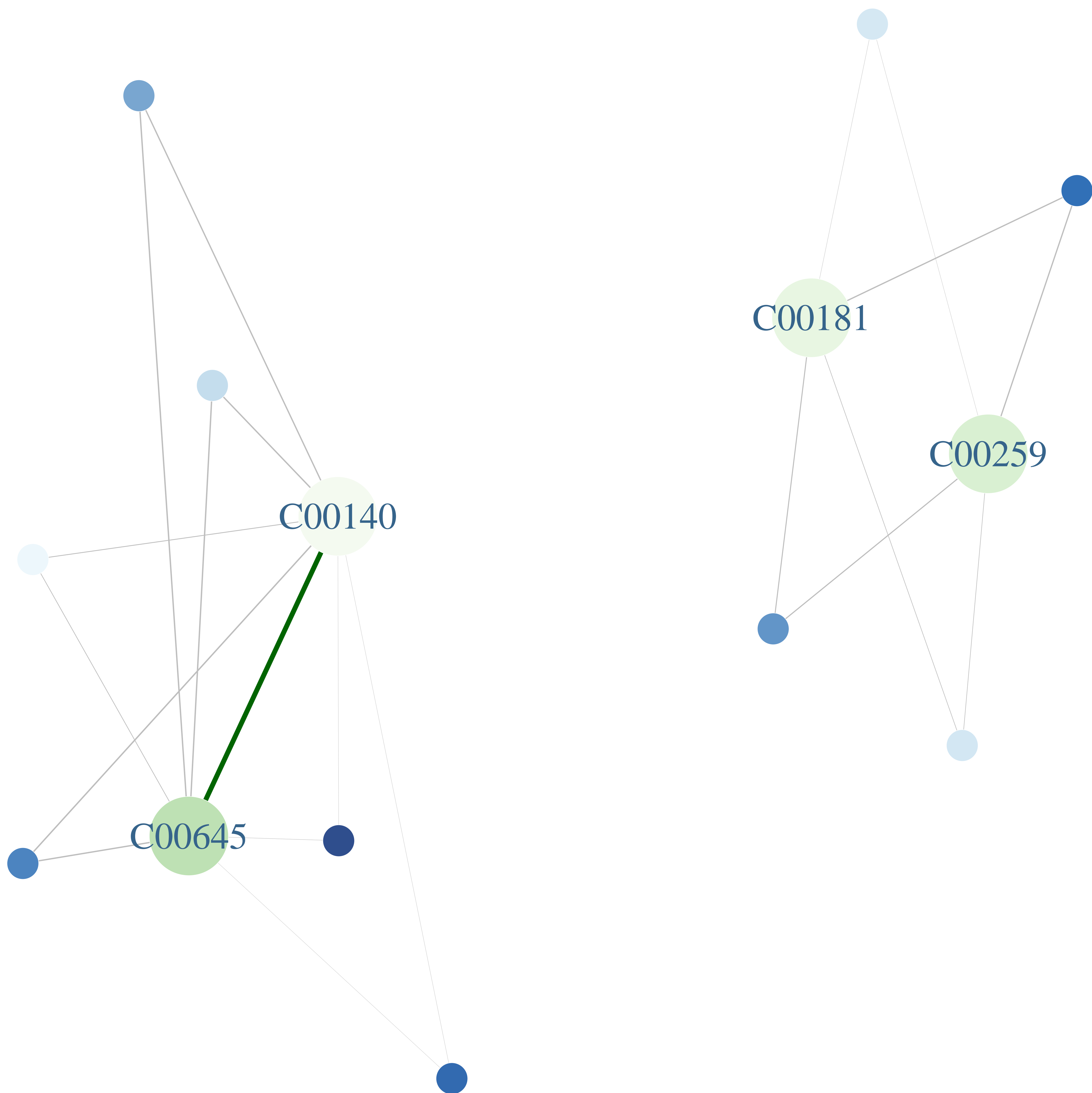
inflammatory mediator regulation of trp channels ; p-value: 0.436



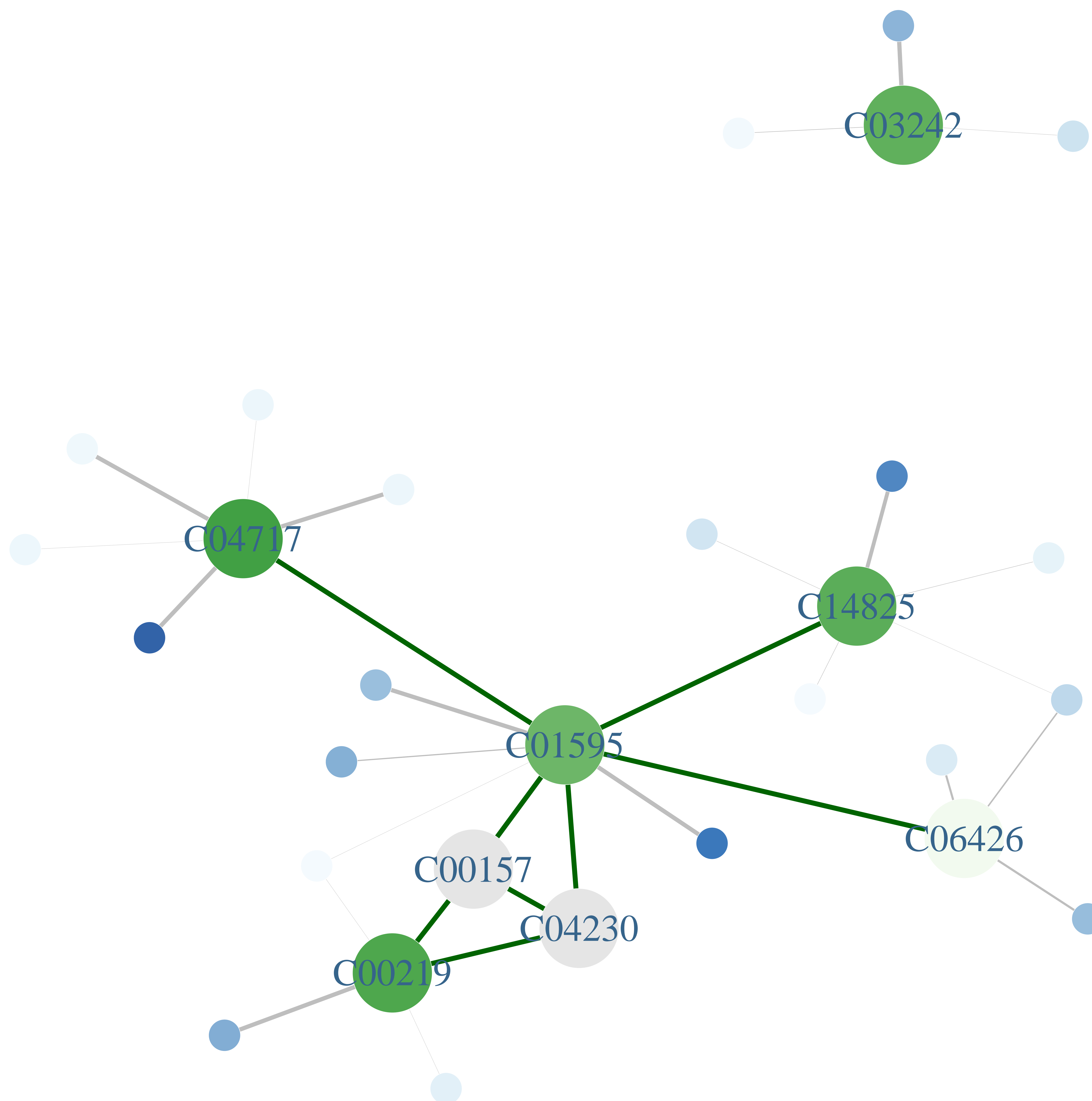
linoleate metabolism ; p-value: 0.006



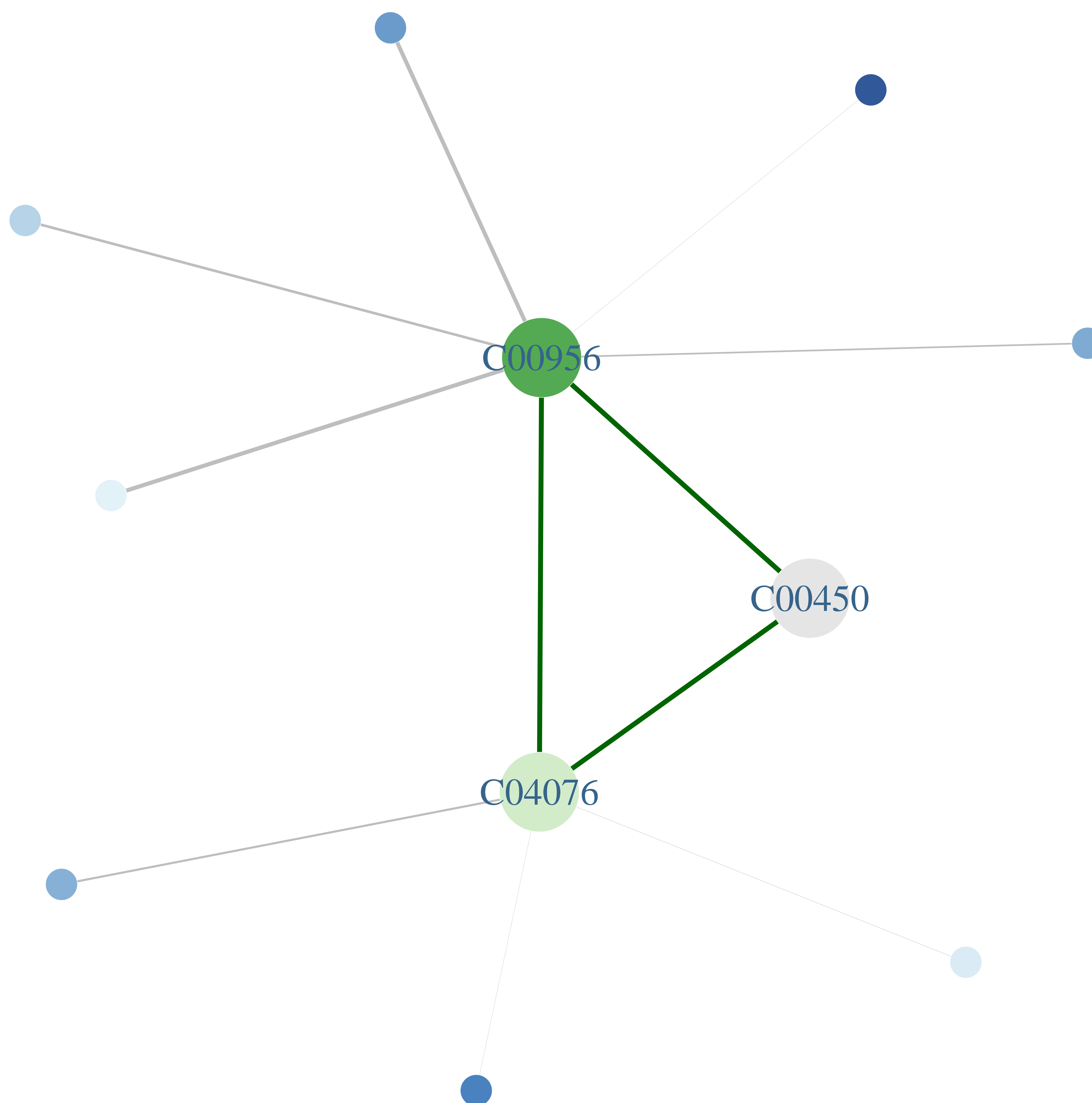
amino sugar and nucleotide sugar metabolism ; p-value: 0.134



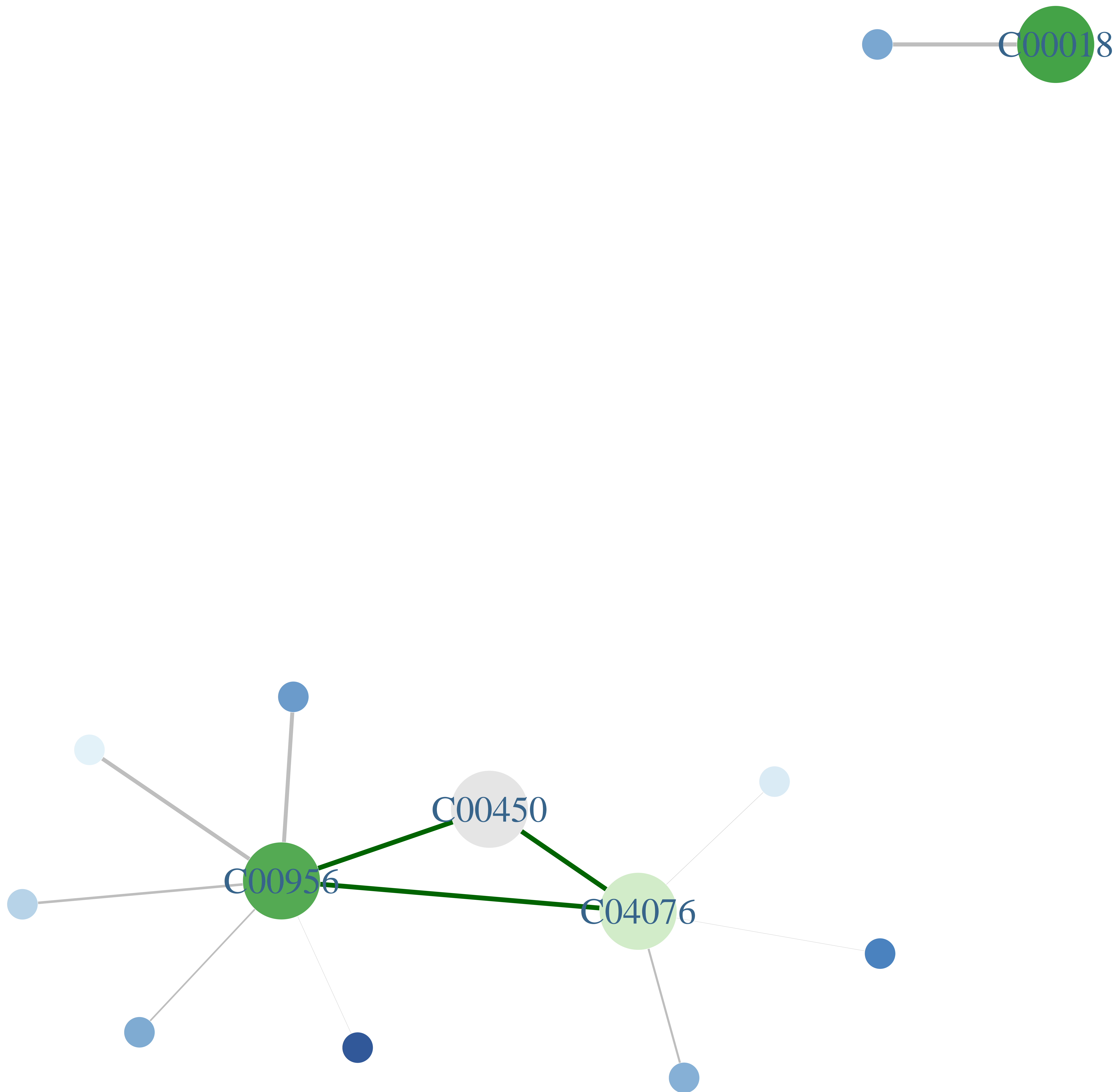
linoleic acid metabolism ; p-value: 0



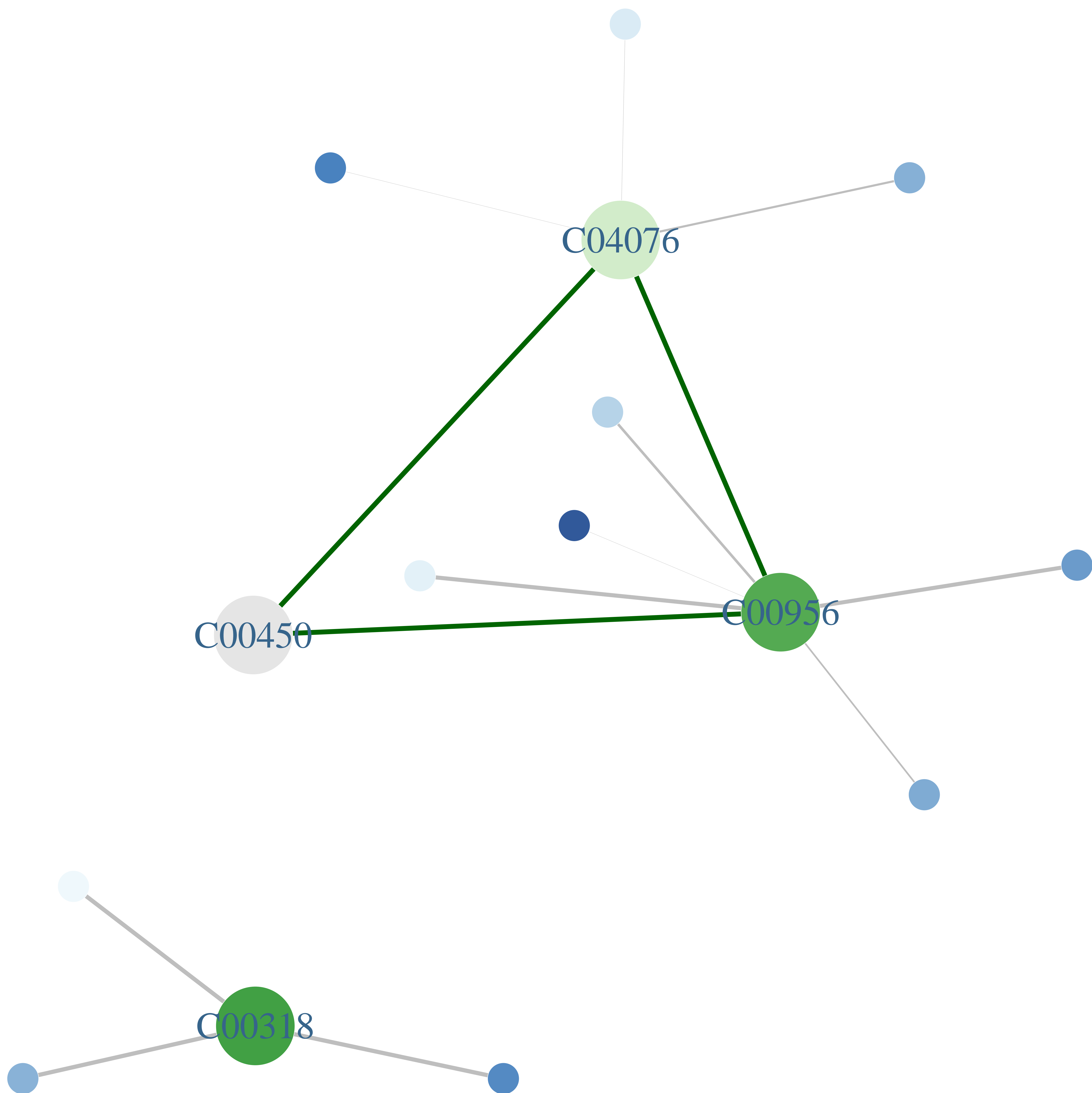
lysine biosynthesis ; p-value: 0.265



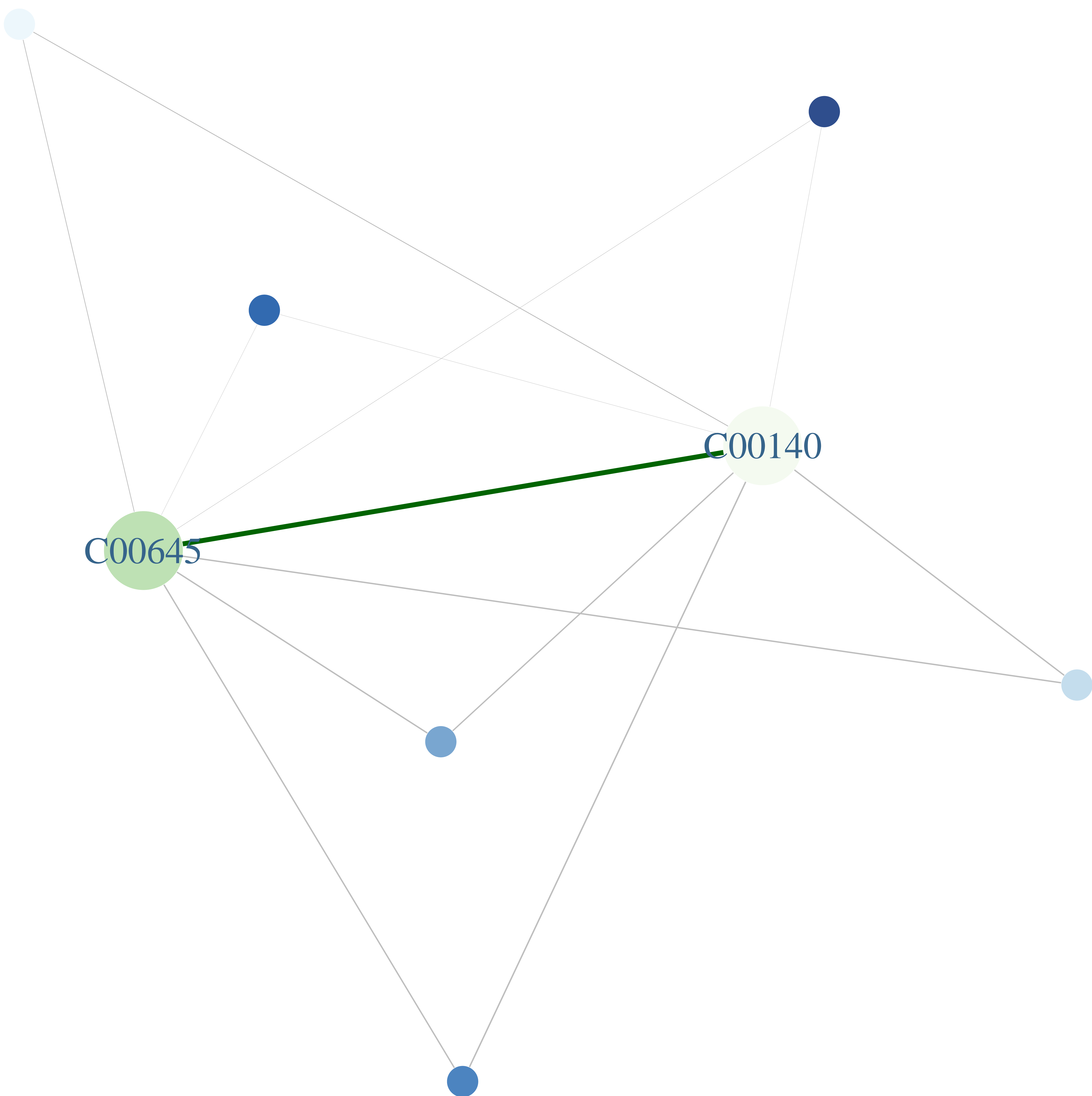
lysine degradation ; p-value: 0.377



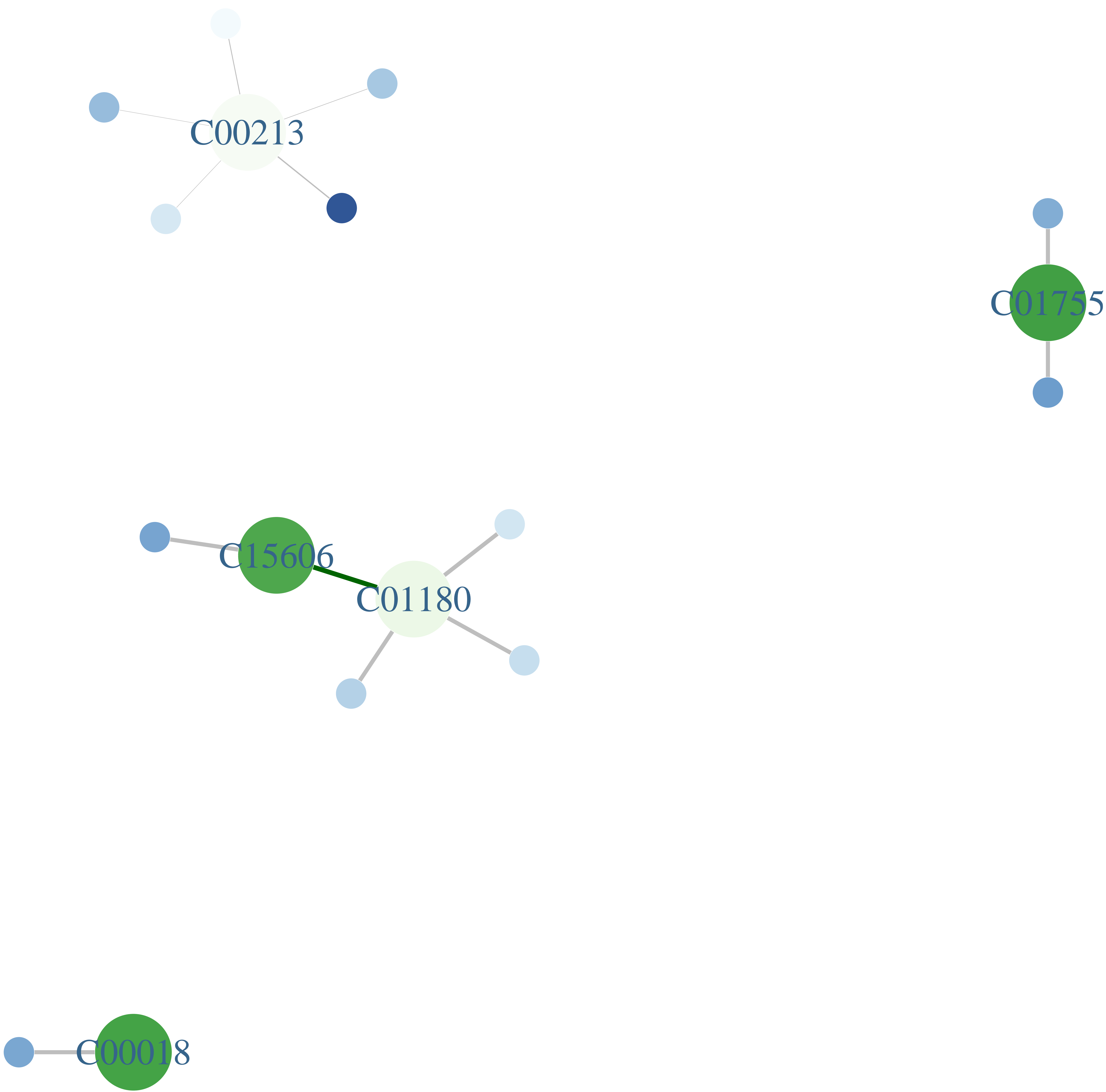
lysine metabolism ; p-value: 0.197



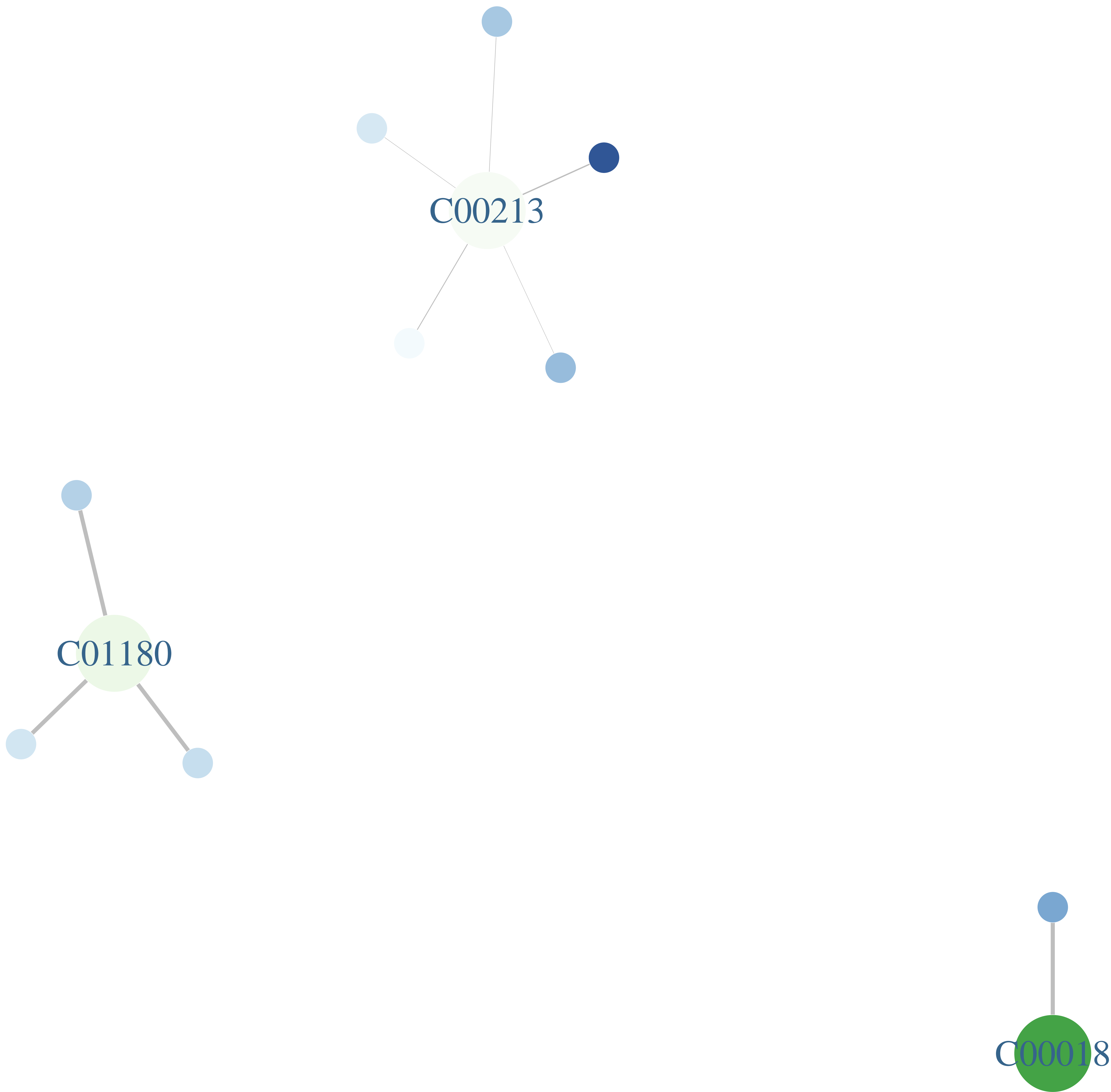
amino sugar metabolism ; p-value: 0.499



methionine and cysteine metabolism ; p-value: 0.28



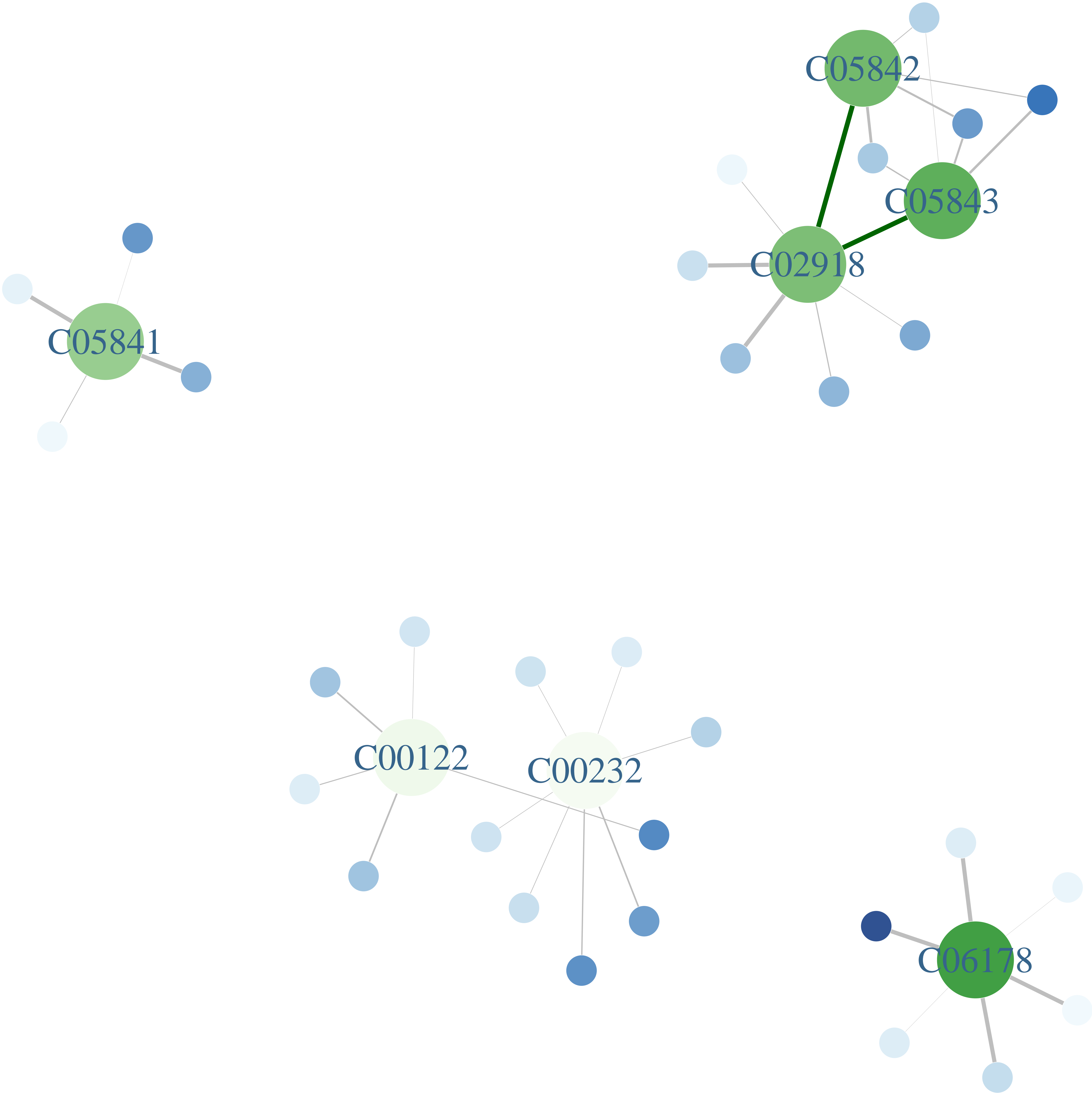
methionine metabolism ; p-value: 0.247



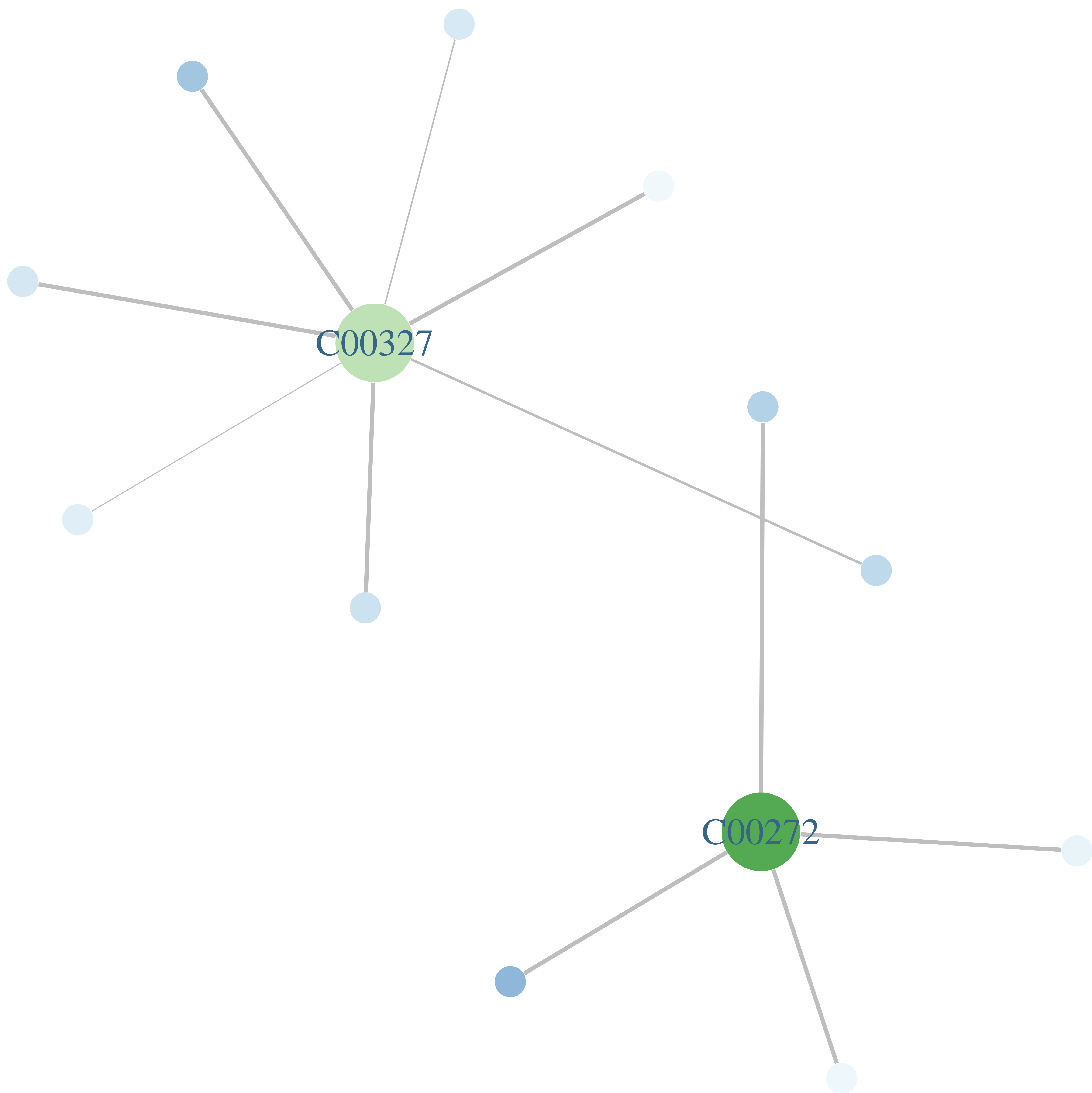
neuroactive ligand–receptor interaction ; p–value: 0.146



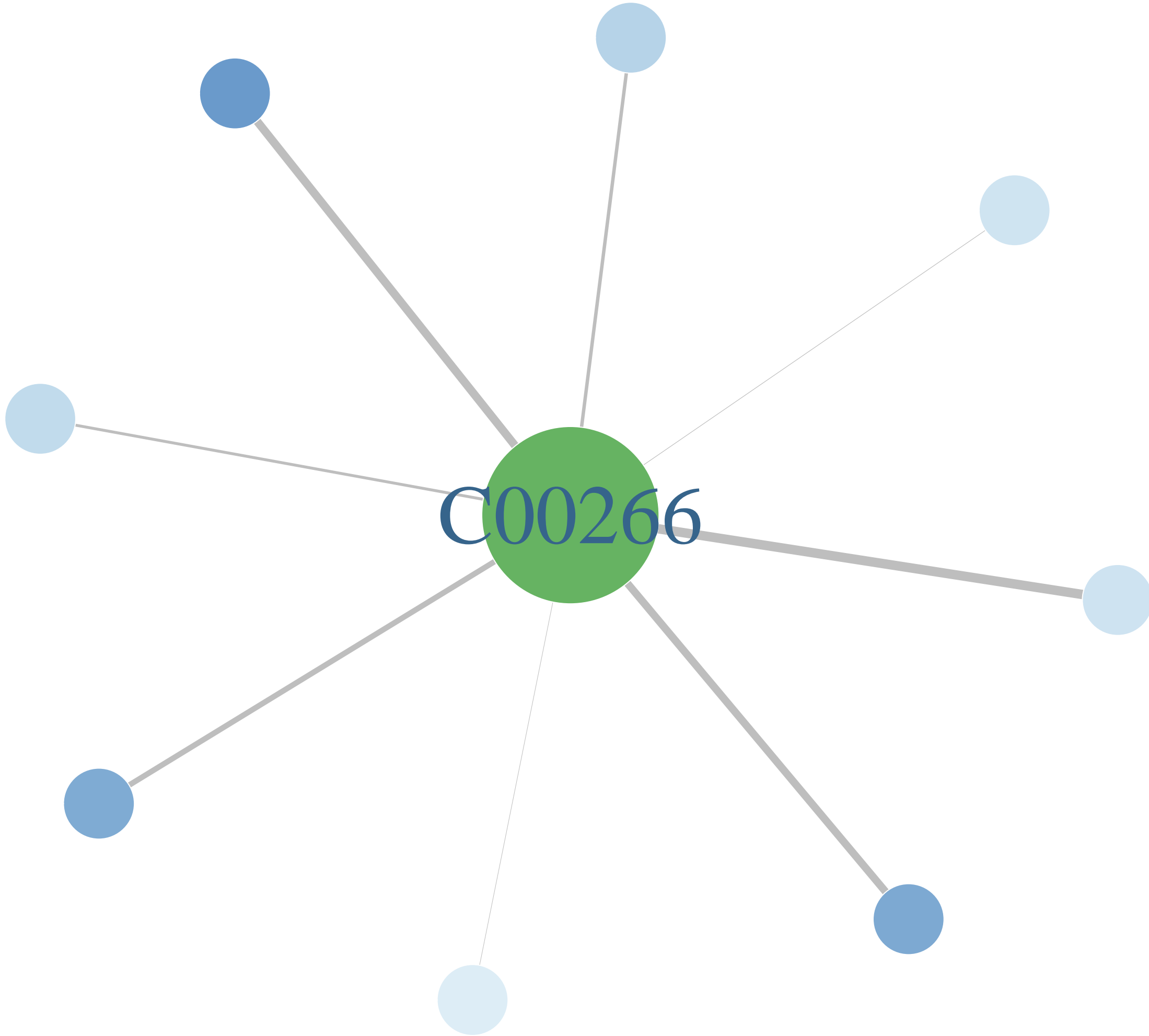
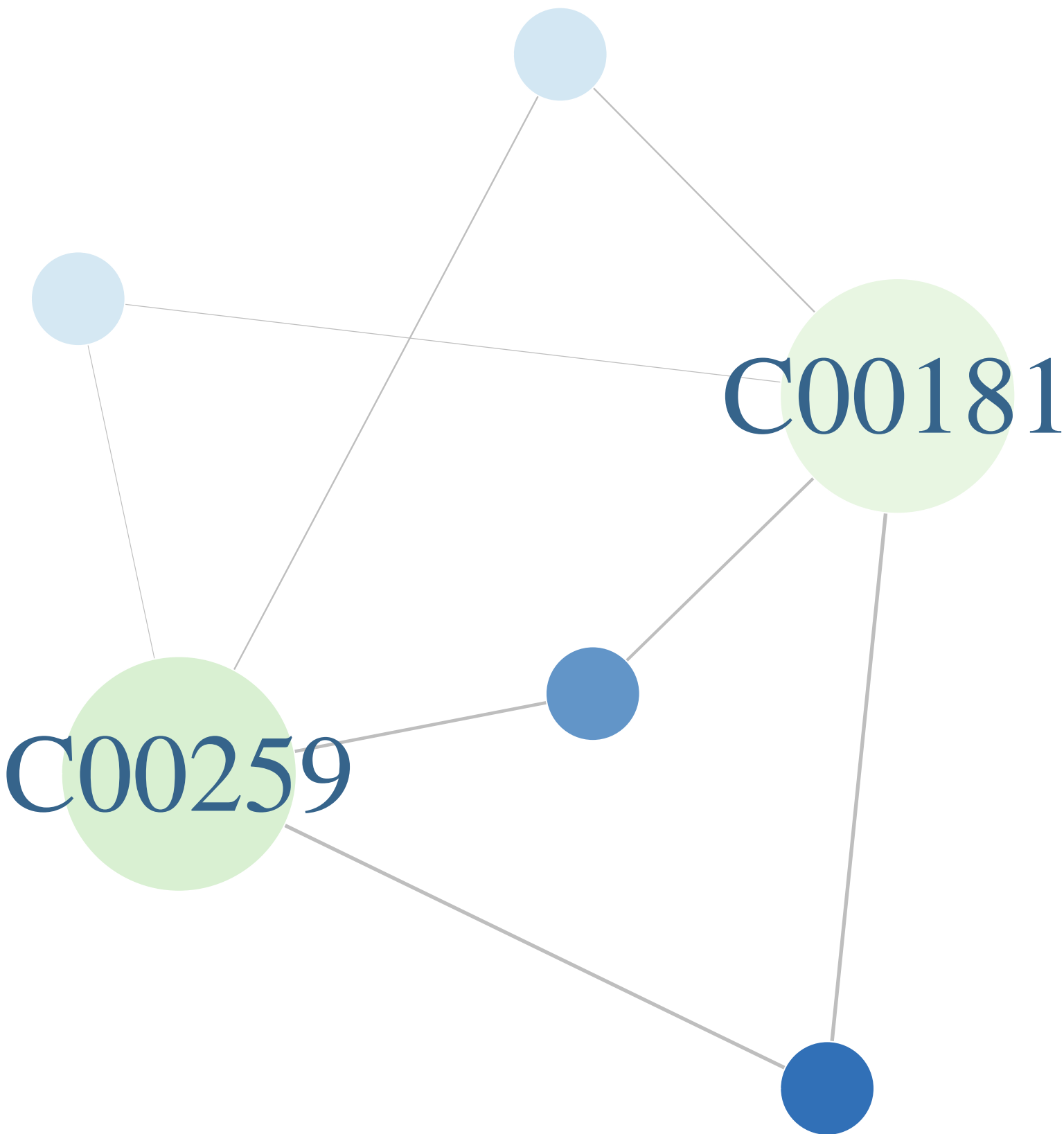
nicotinate and nicotinamide metabolism ; p-value: 0.002



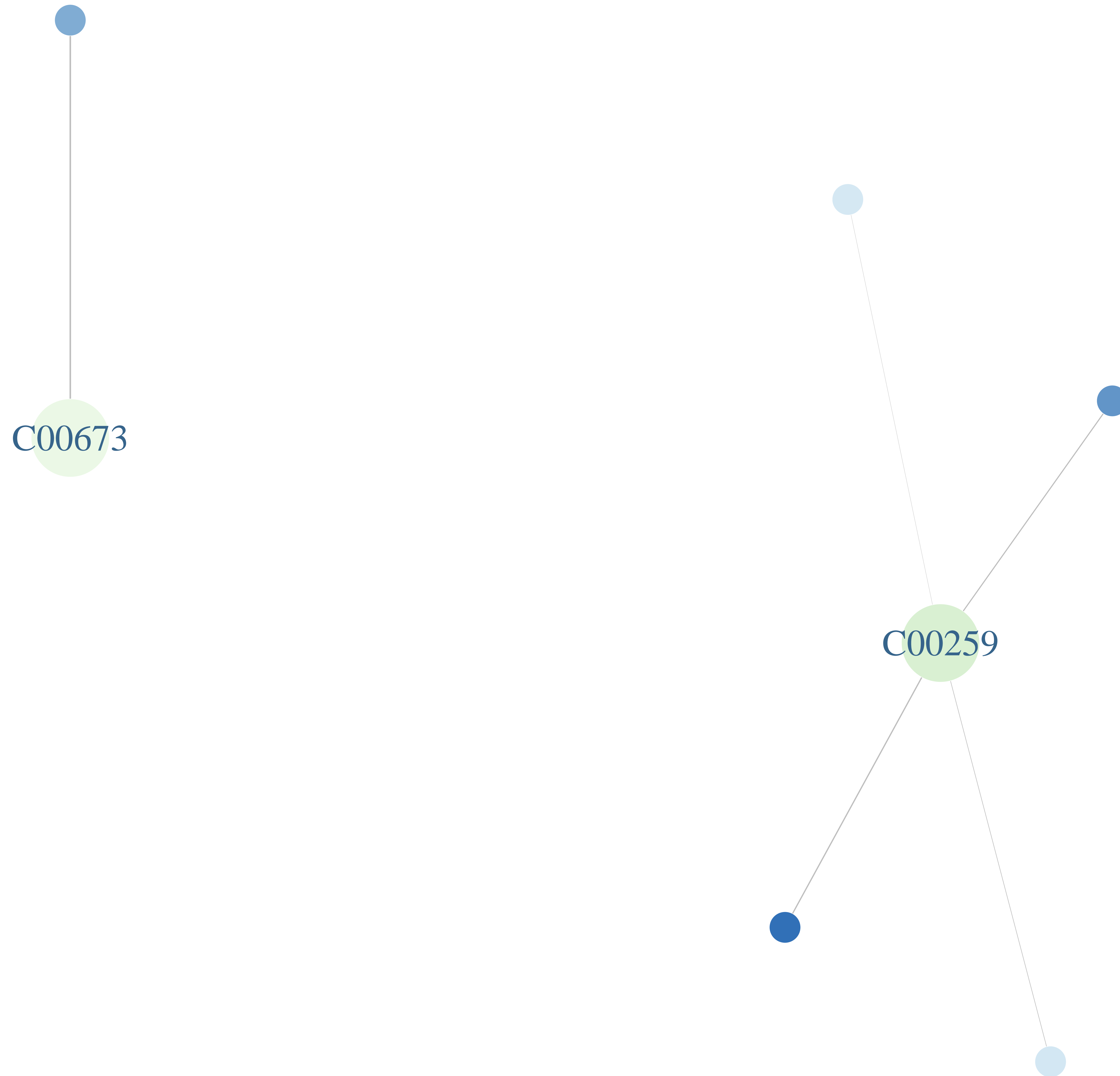
nitric oxide signaling pathway ; p-value: 0.097



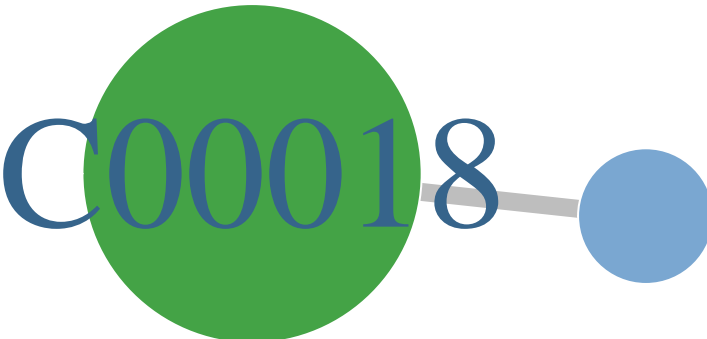
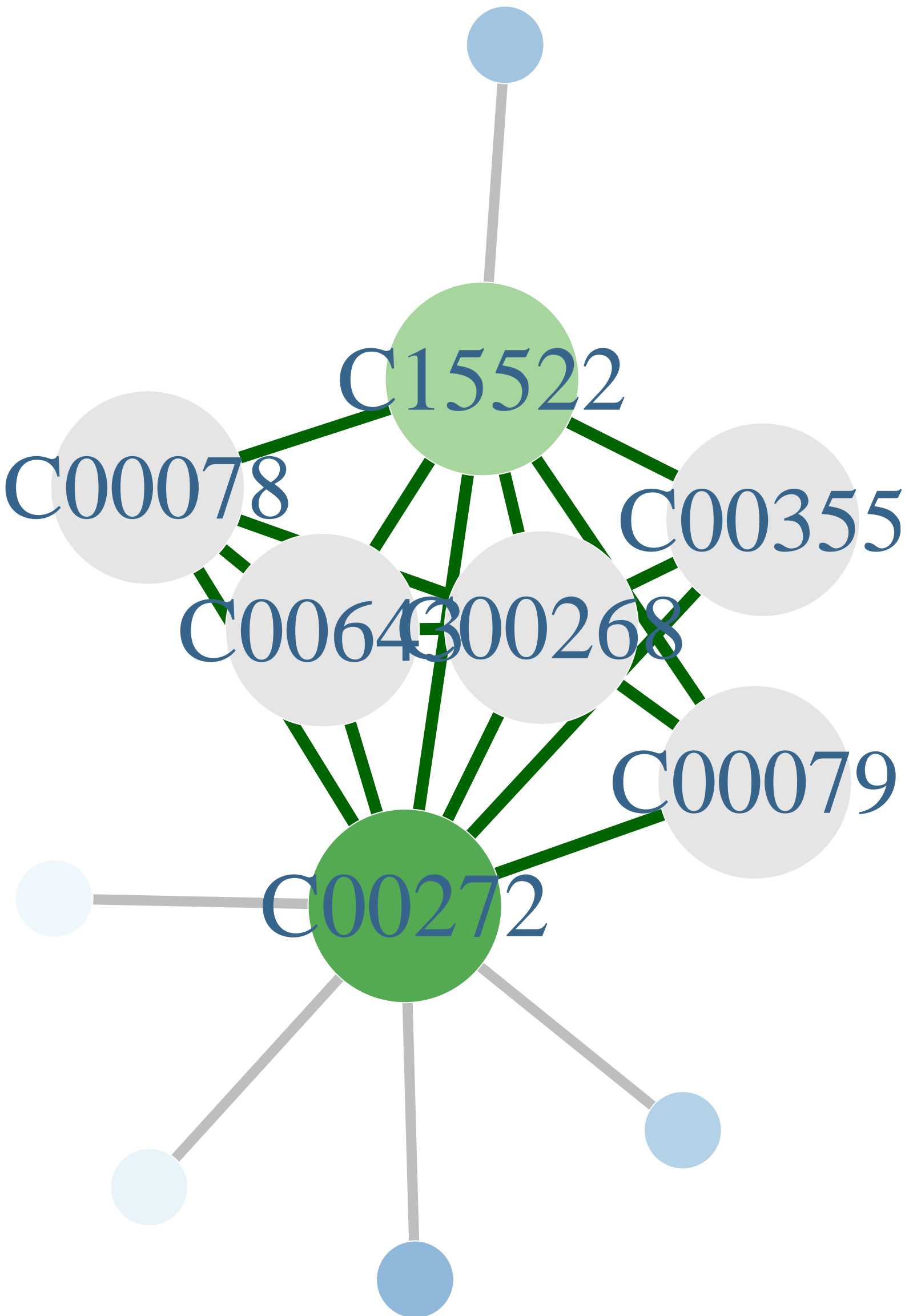
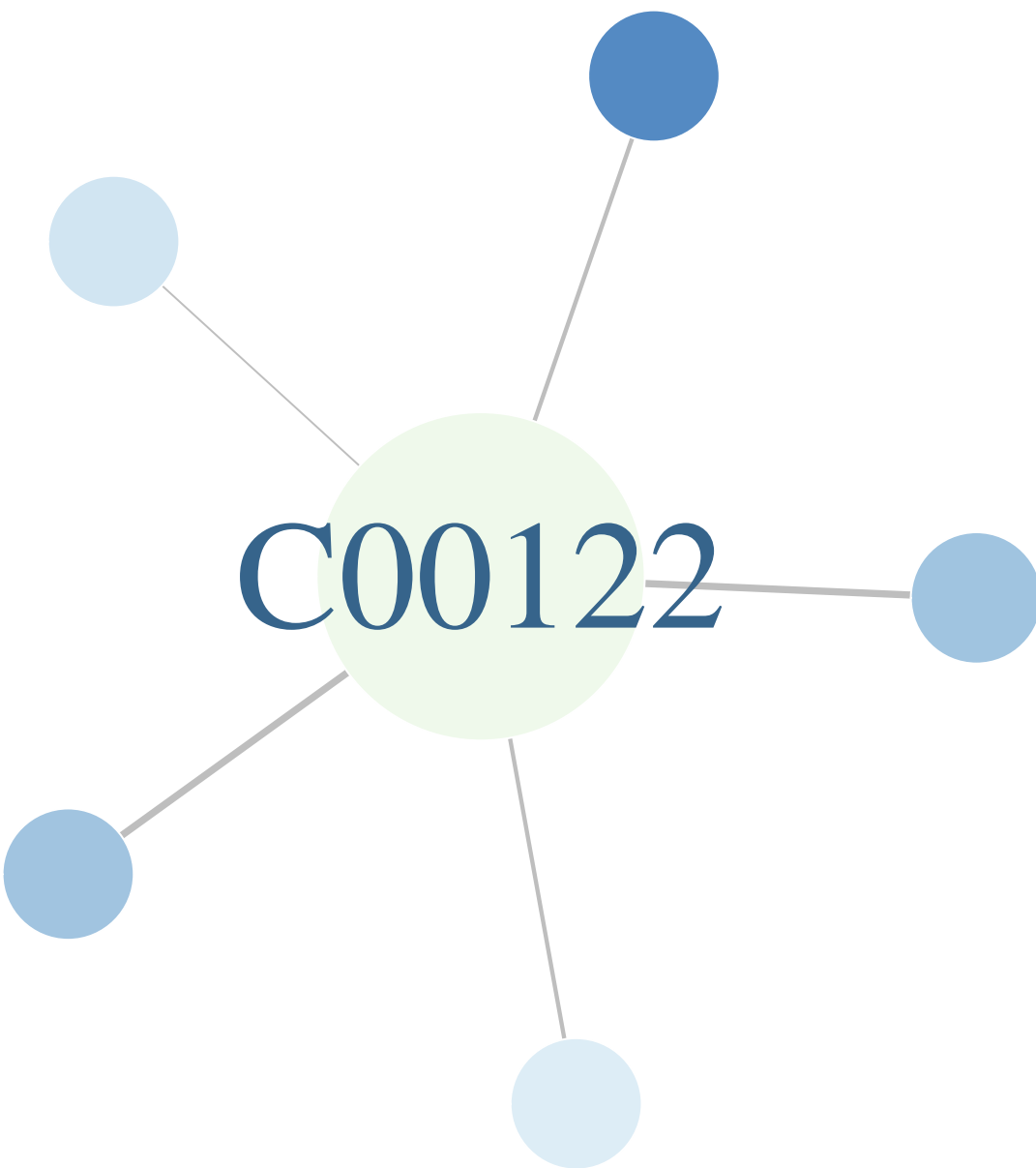
pentose and glucuronate interconversions ; p-value: 0.325



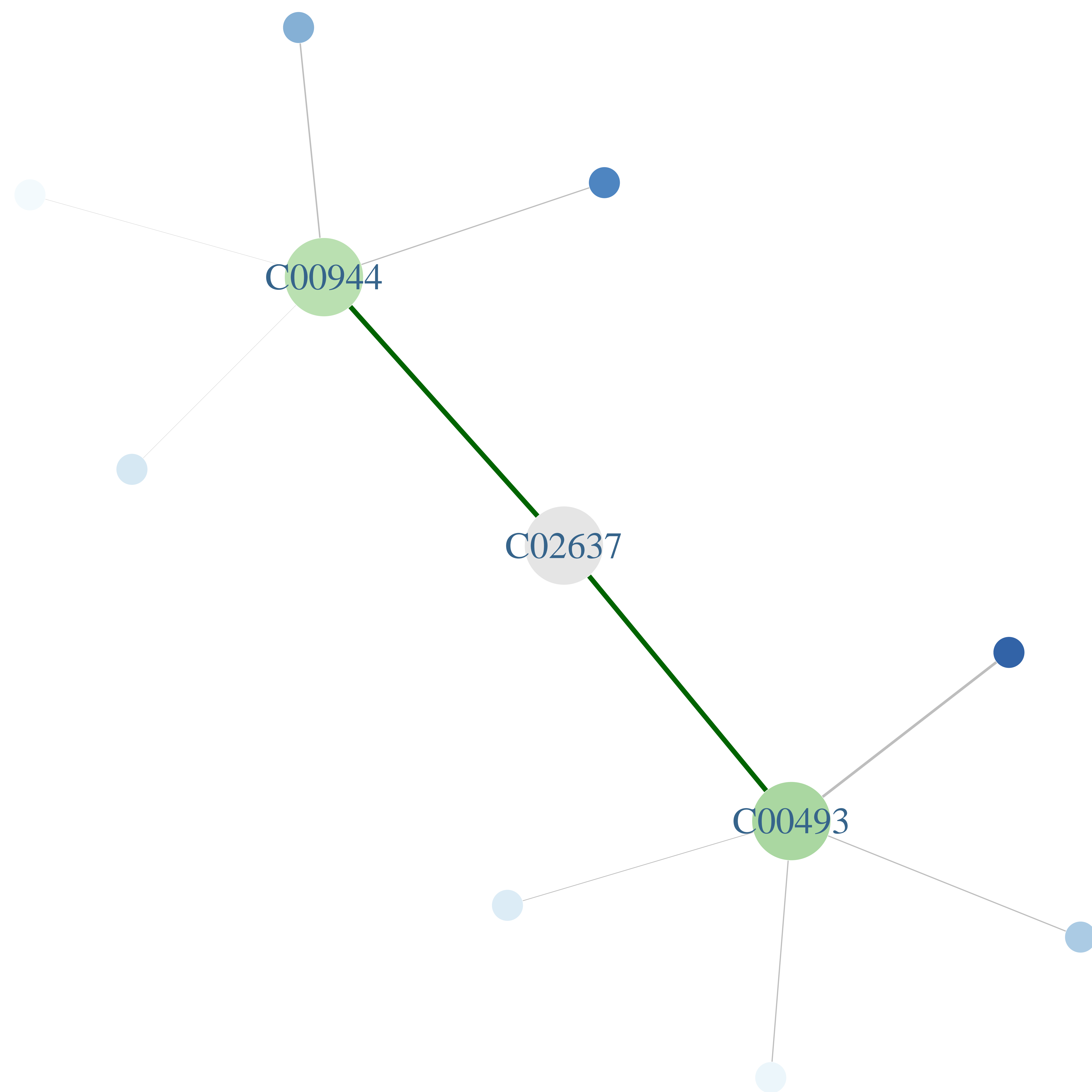
pentose phosphate pathway ; p-value: 0.805



phenylalanine and tyrosine metabolism ; p-value: 0.032



phenylalanine, tyrosine and tryptophan biosynthesis ; p-value: 0.37



phosphatidylinositol phosphate metabolism ; p-value: 0.818

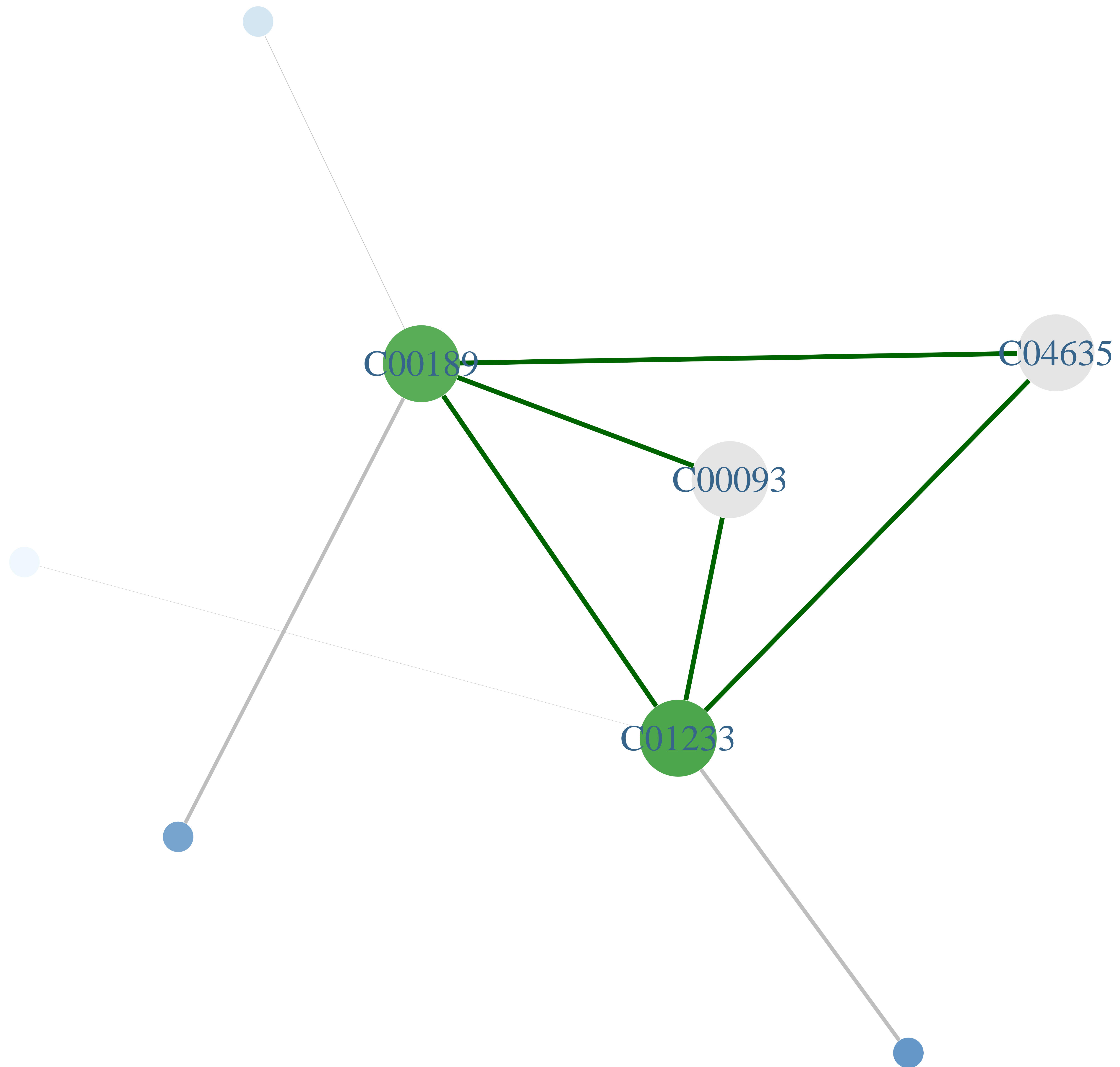
C01225



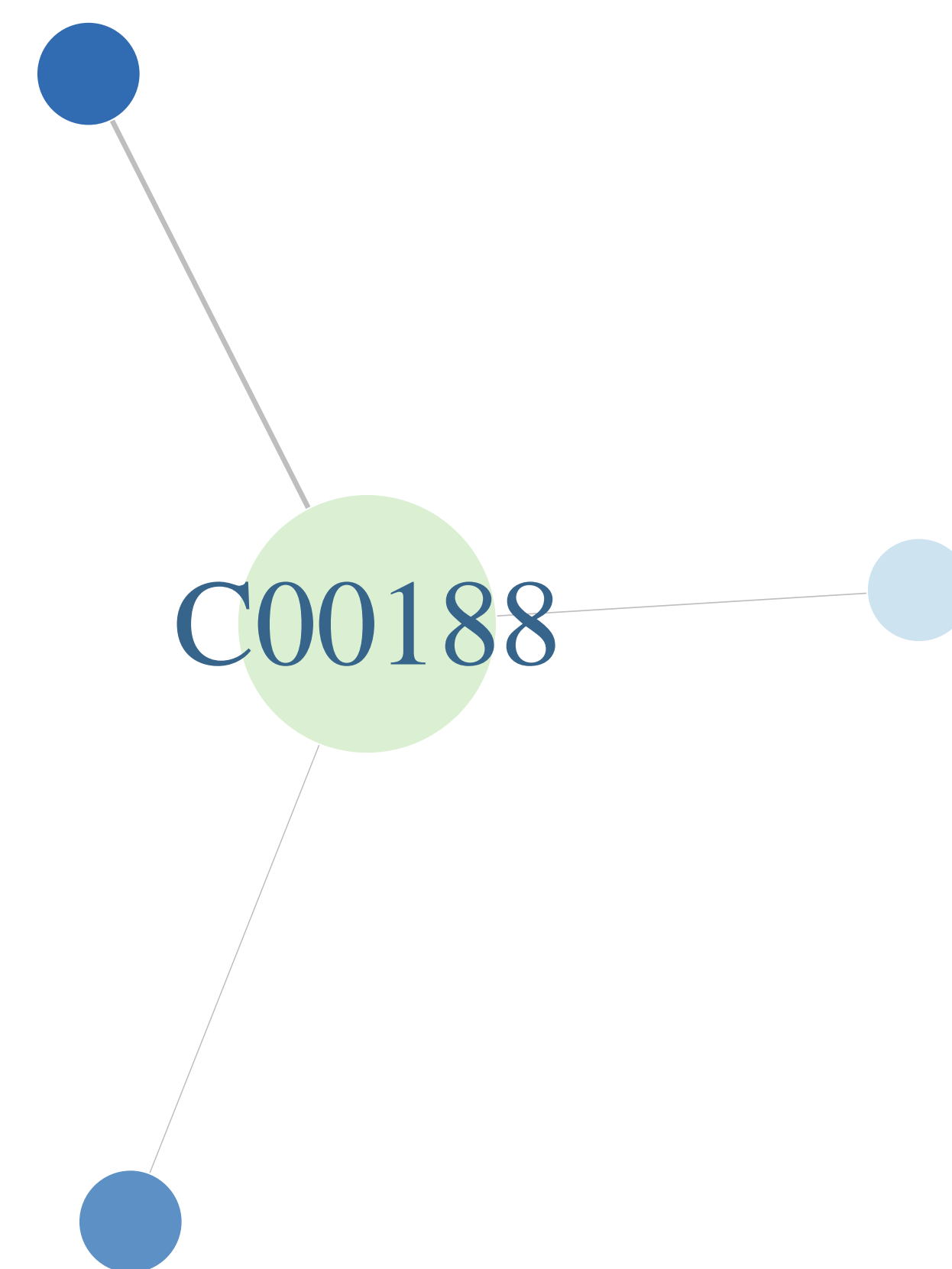
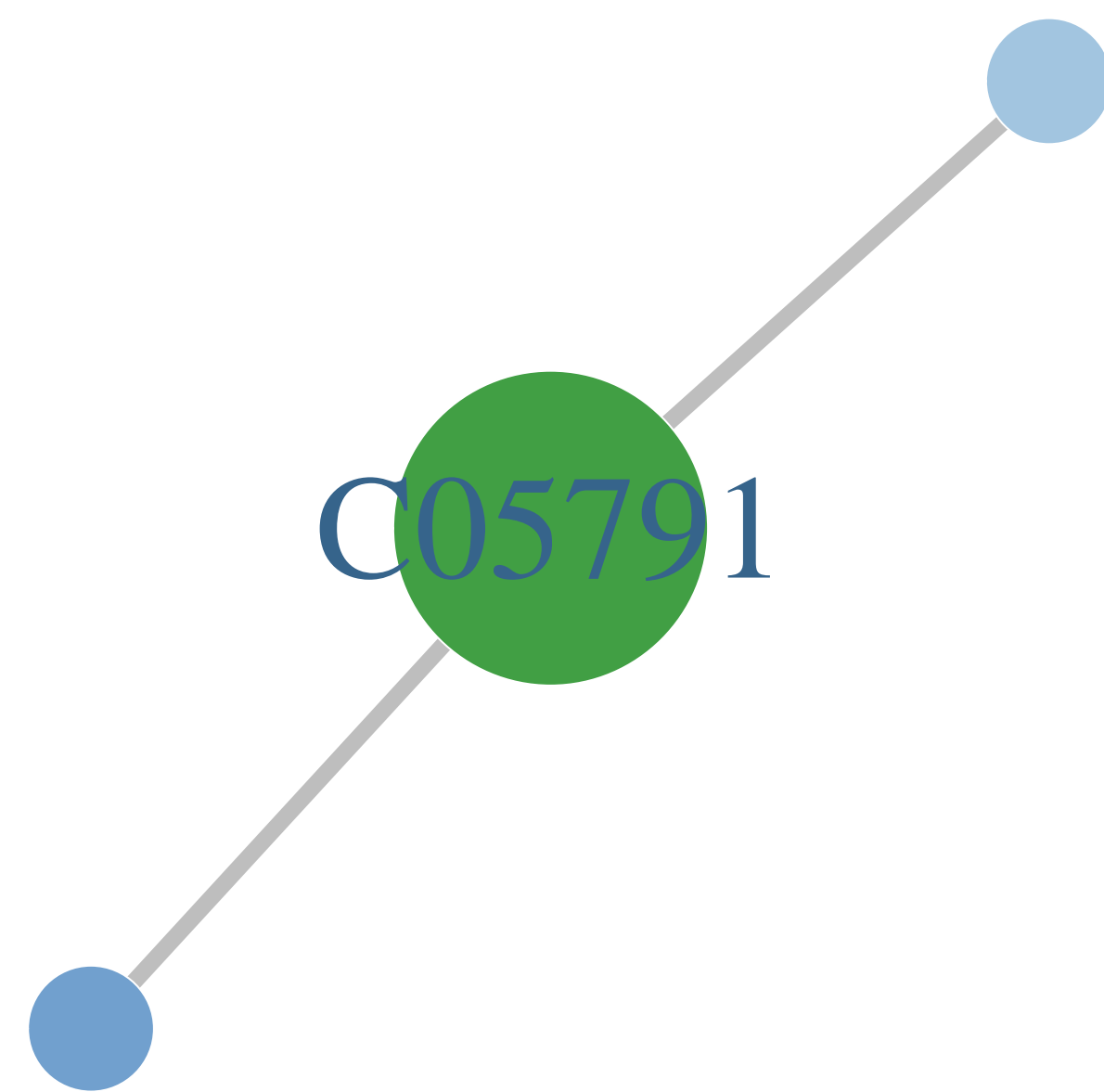
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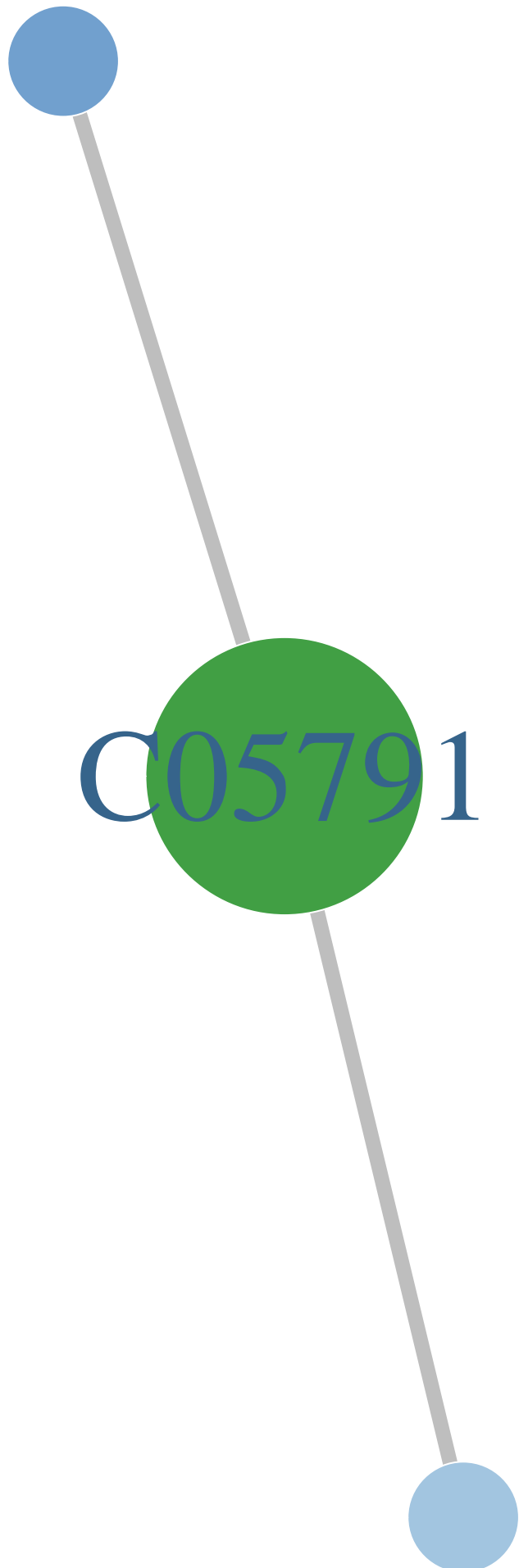
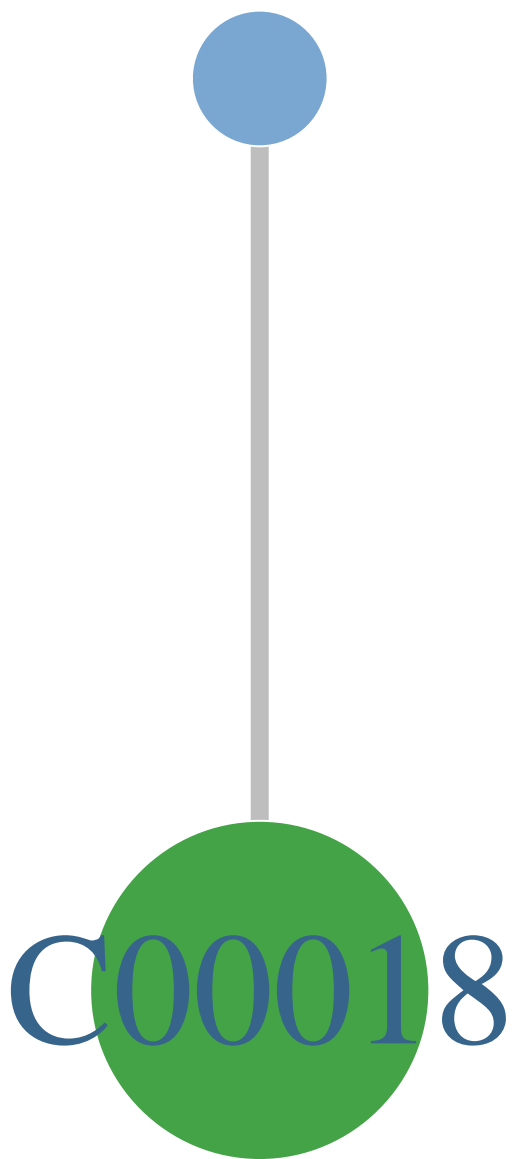
phospholipid biosynthesis ; p-value: 0.584



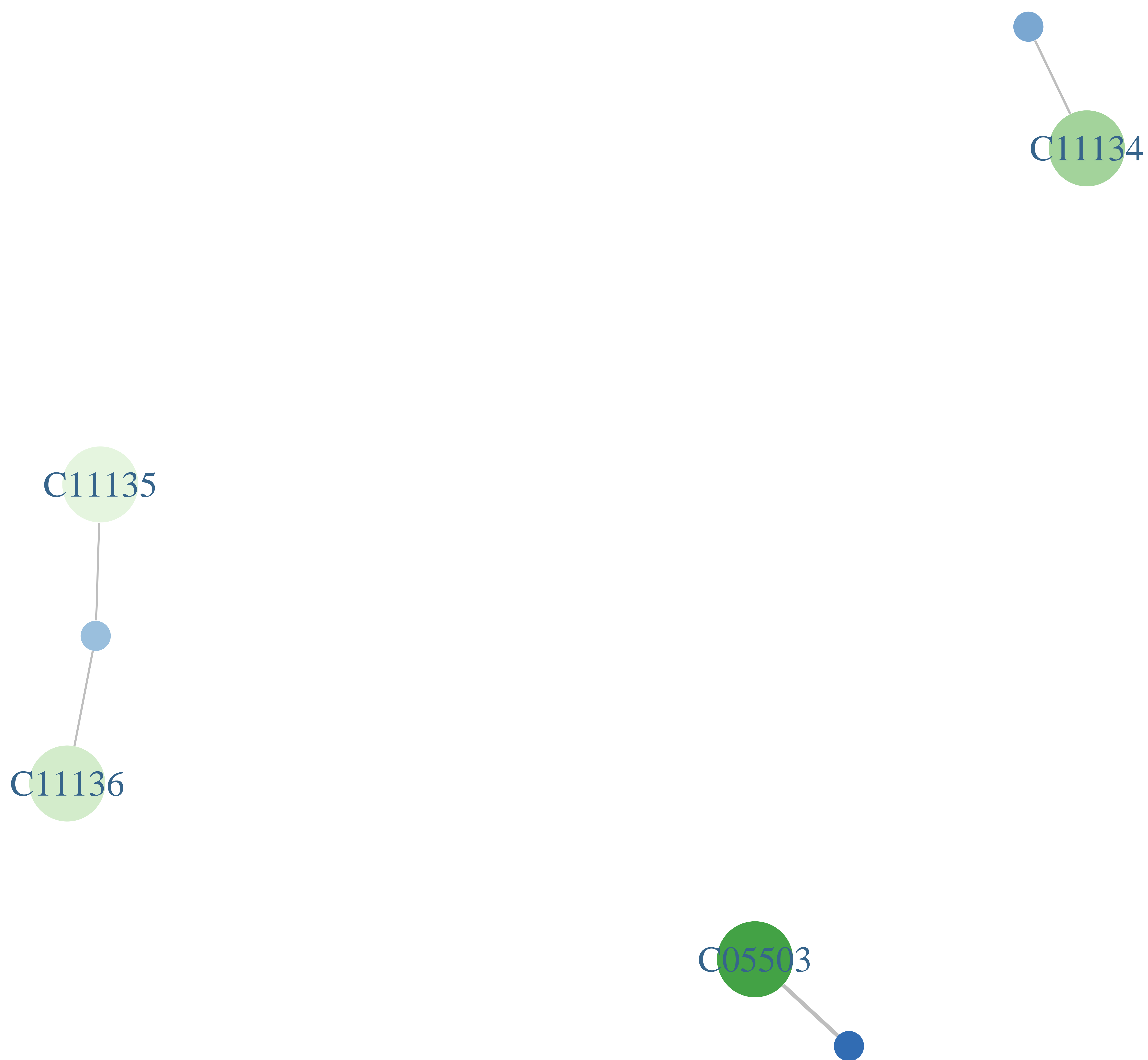
porphyrin and chlorophyll metabolism ; p-value: 0.61



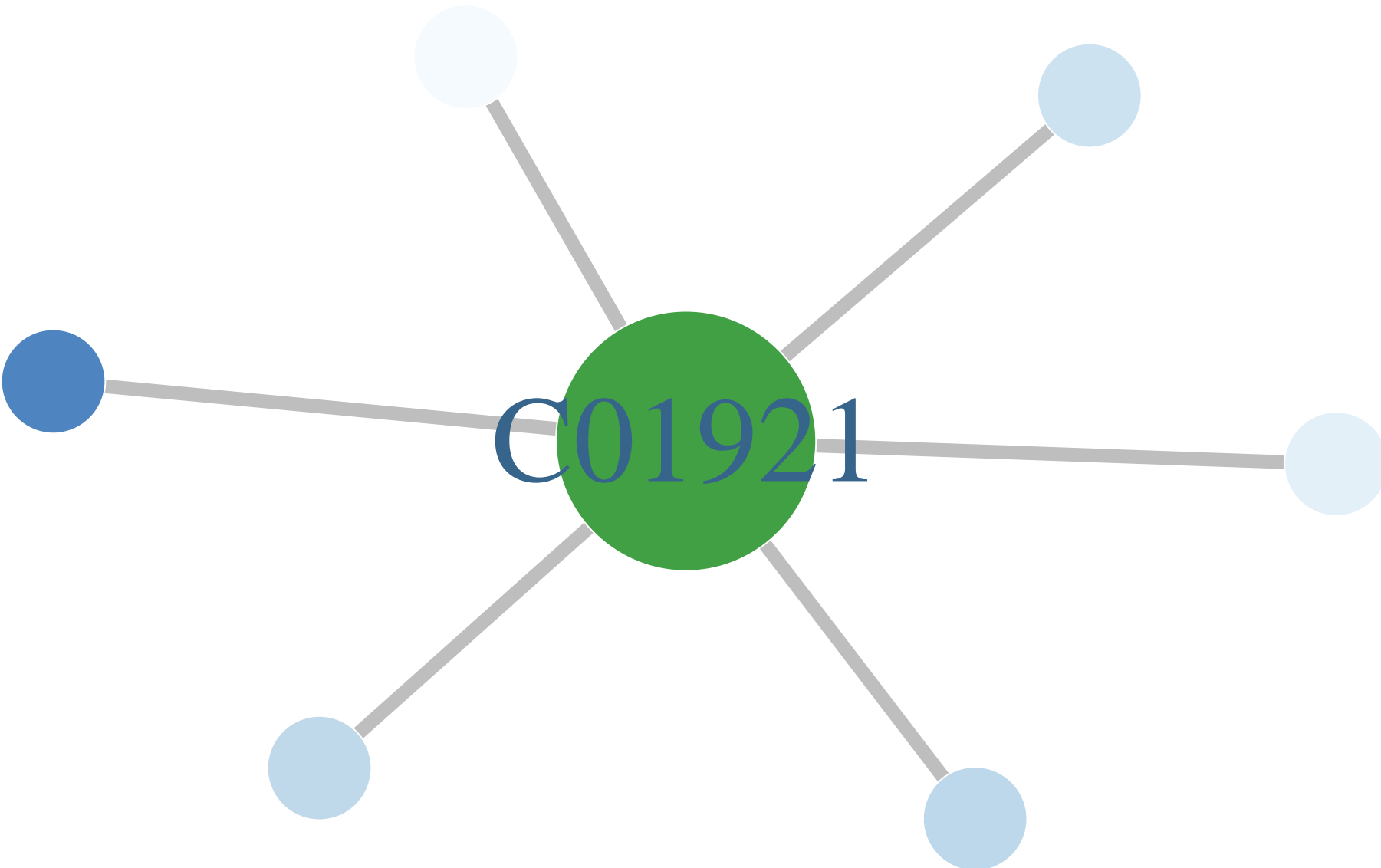
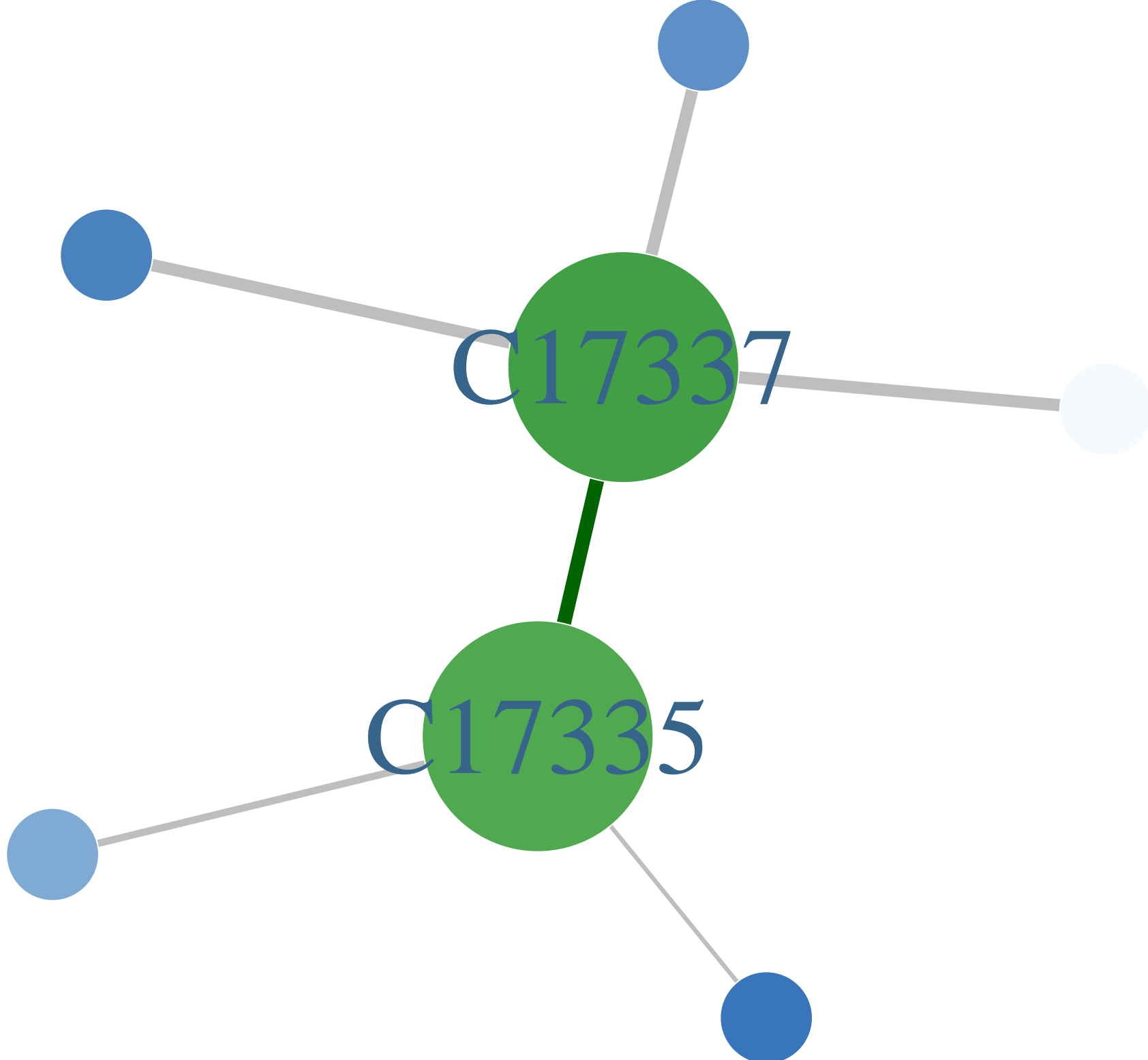
porphyrin metabolism ; p-value: 0.61



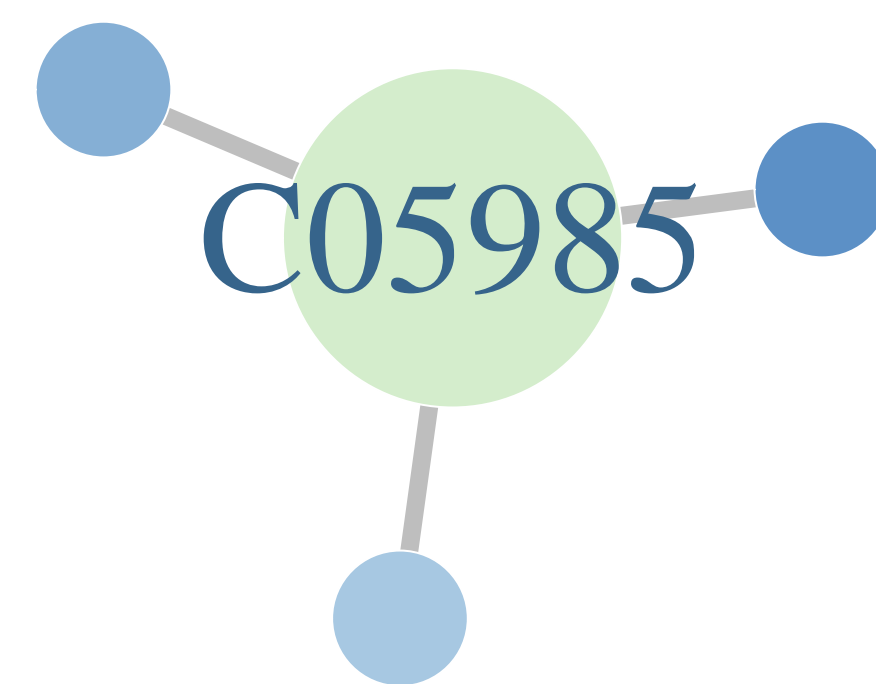
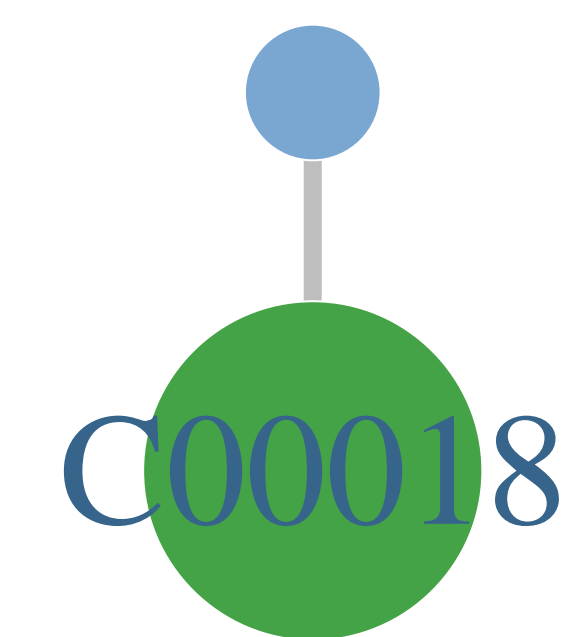
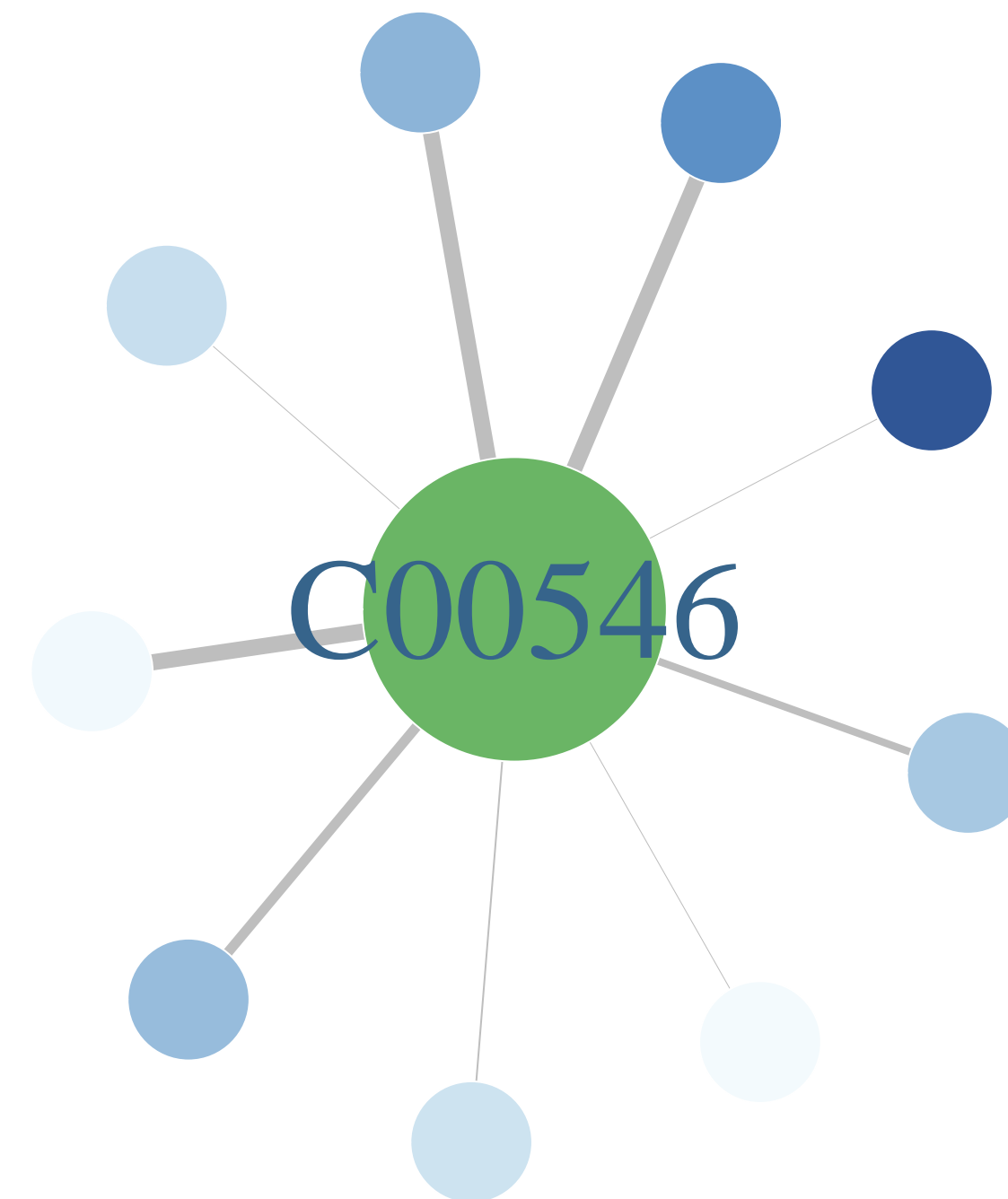
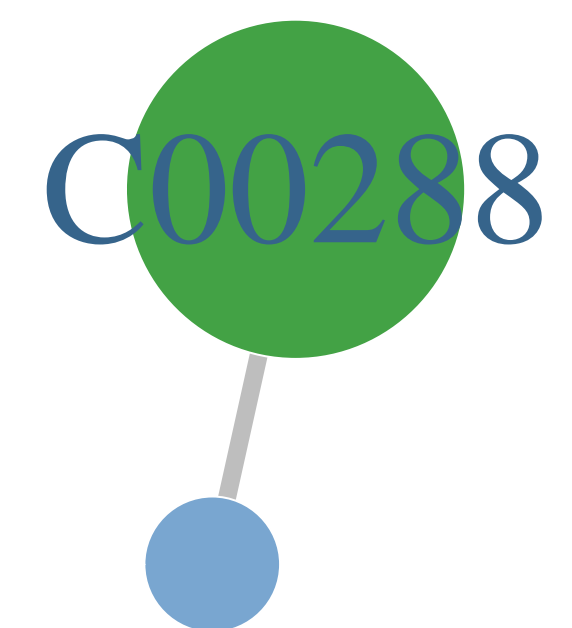
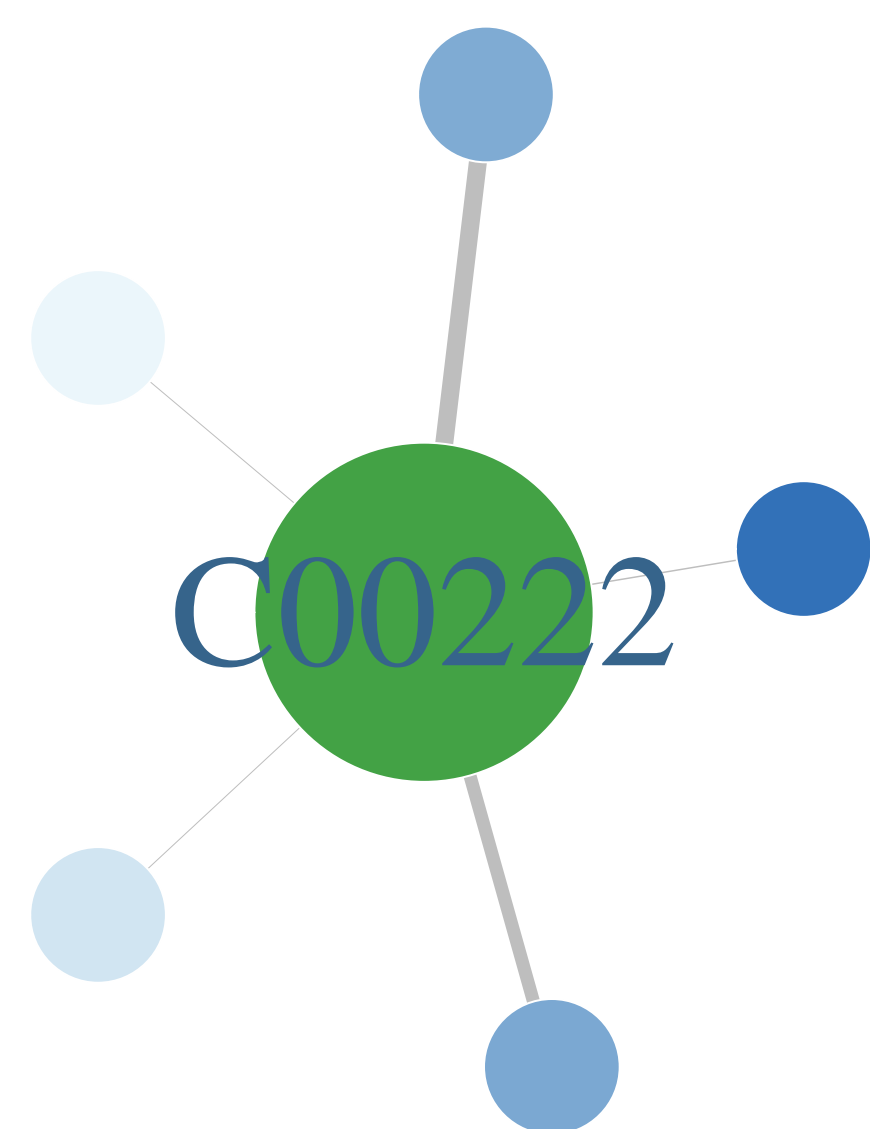
androgen and estrogen metabolism ; p-value: 0.44



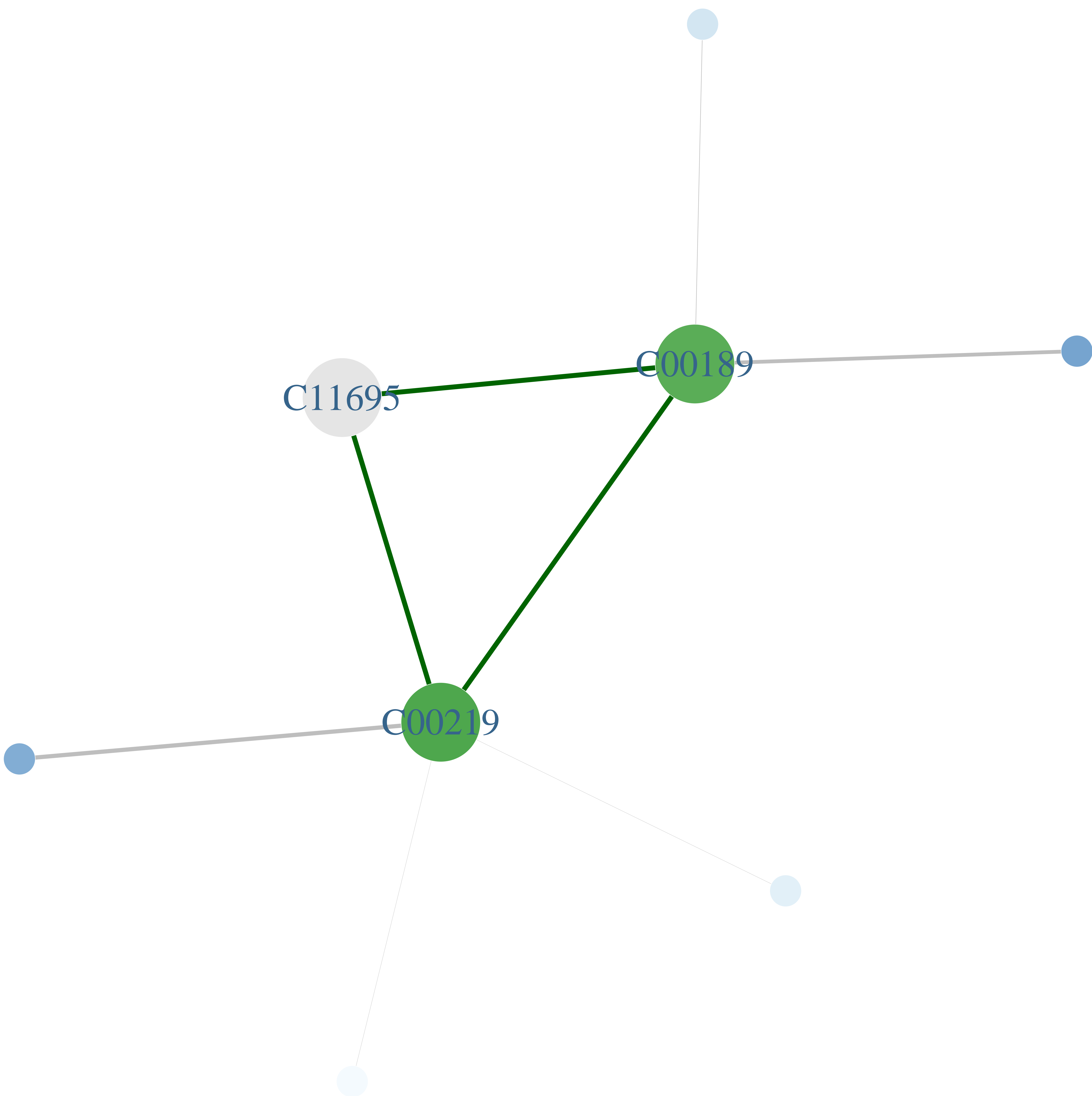
primary bile acid biosynthesis ; p-value: 0.419



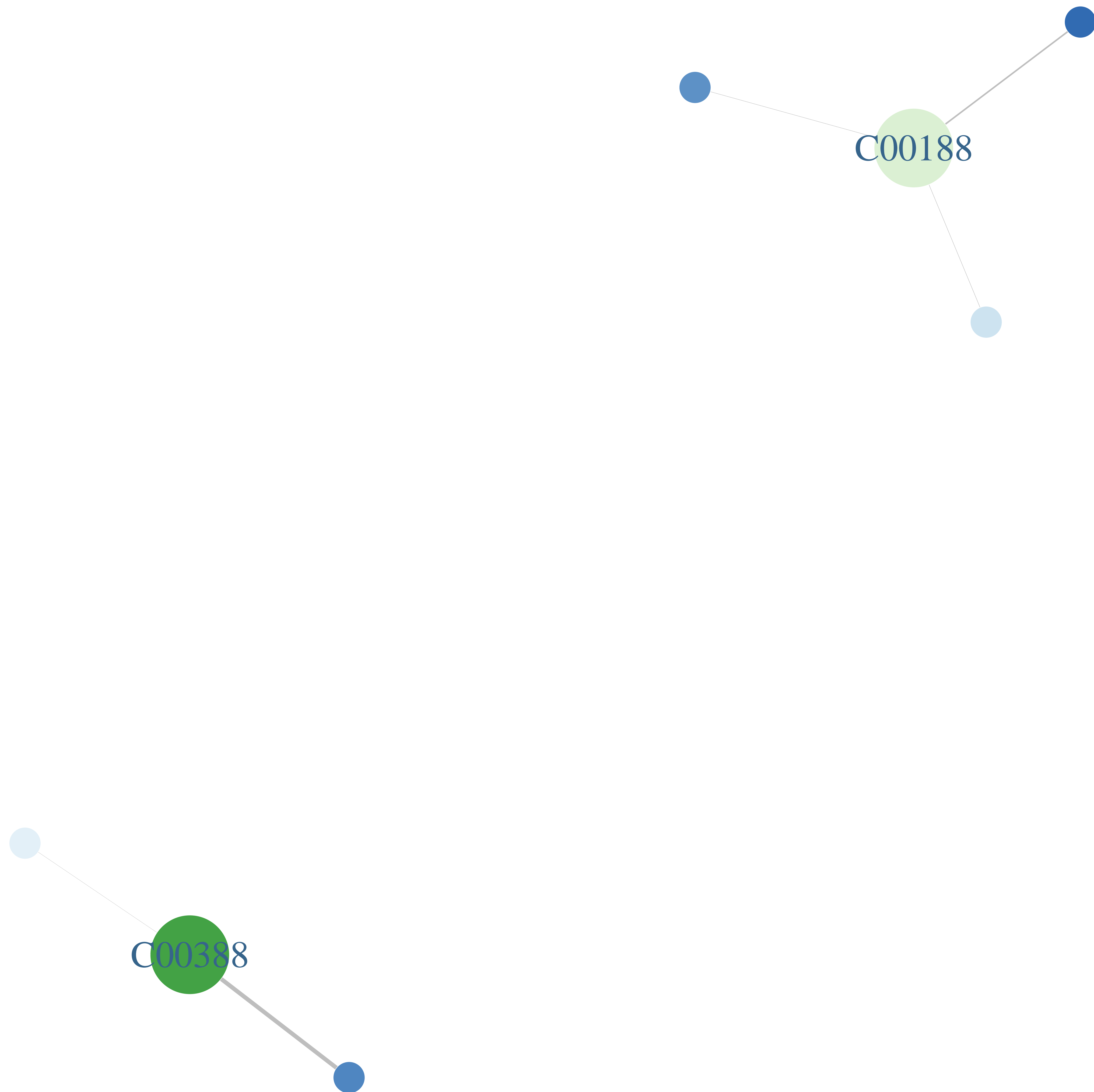
propanoate metabolism ; p-value: 0.065



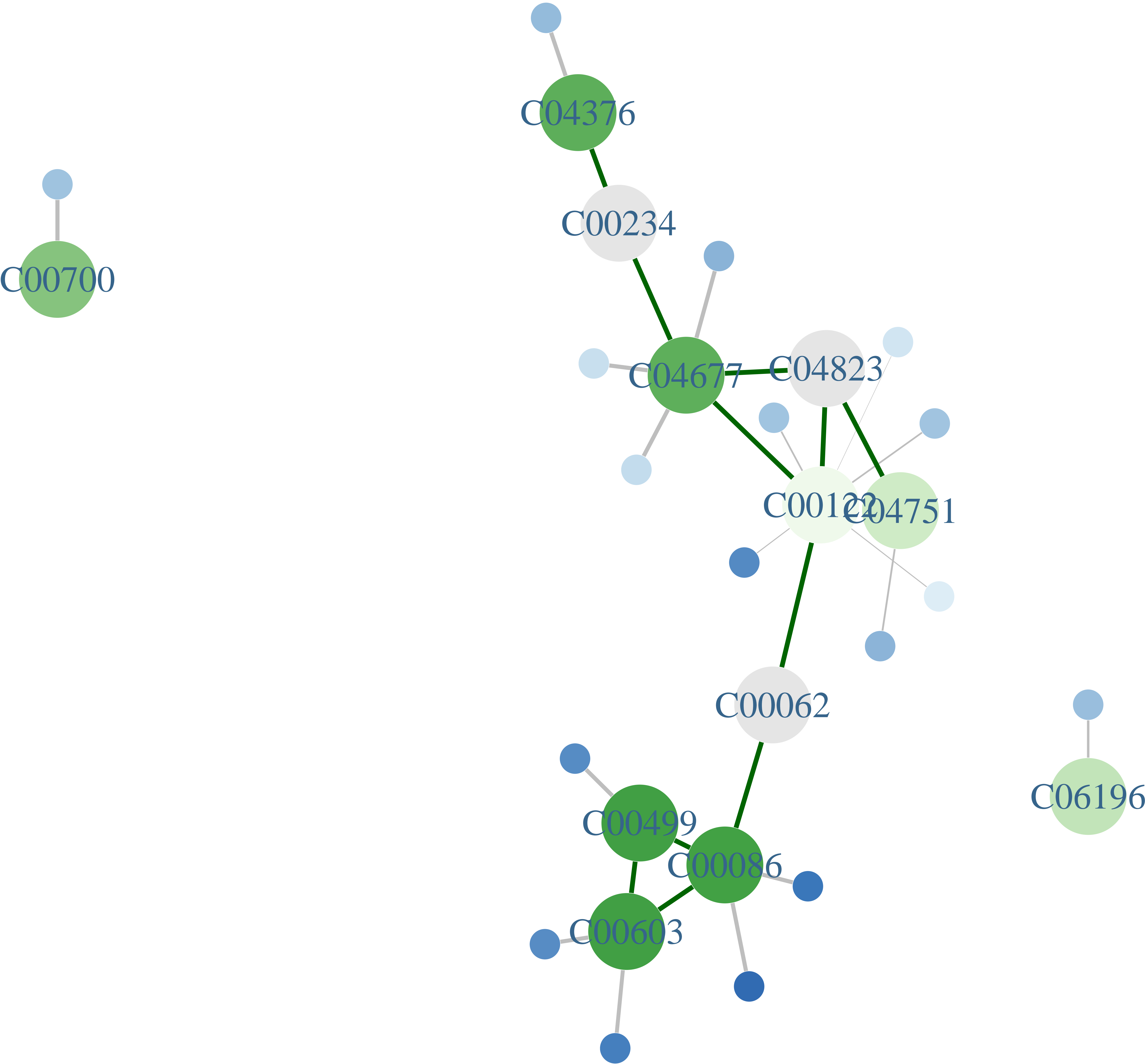
prostaglandin formation from arachidonate ; p-value: 0.403



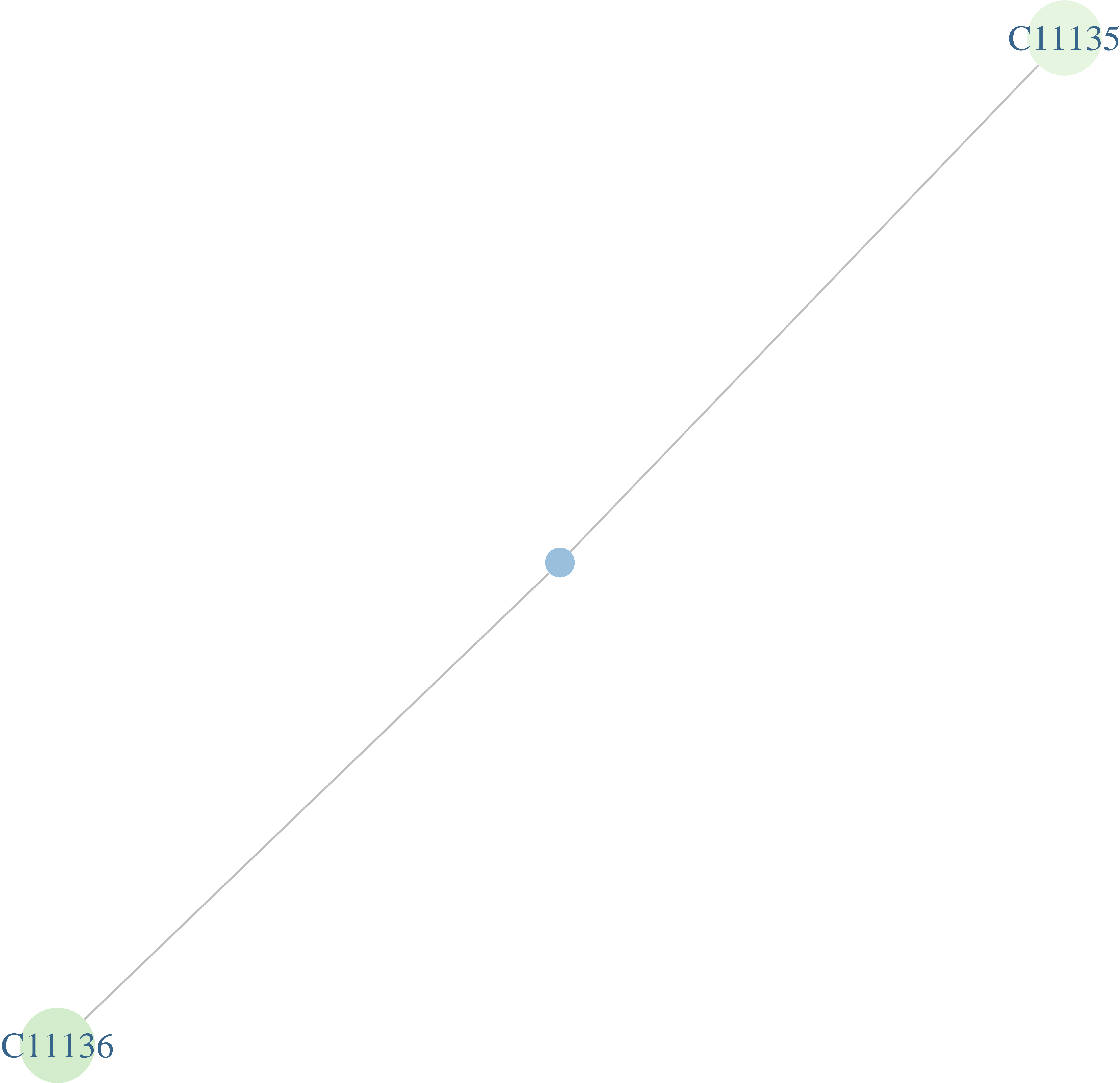
protein digestion and absorption ; p-value: 0.584



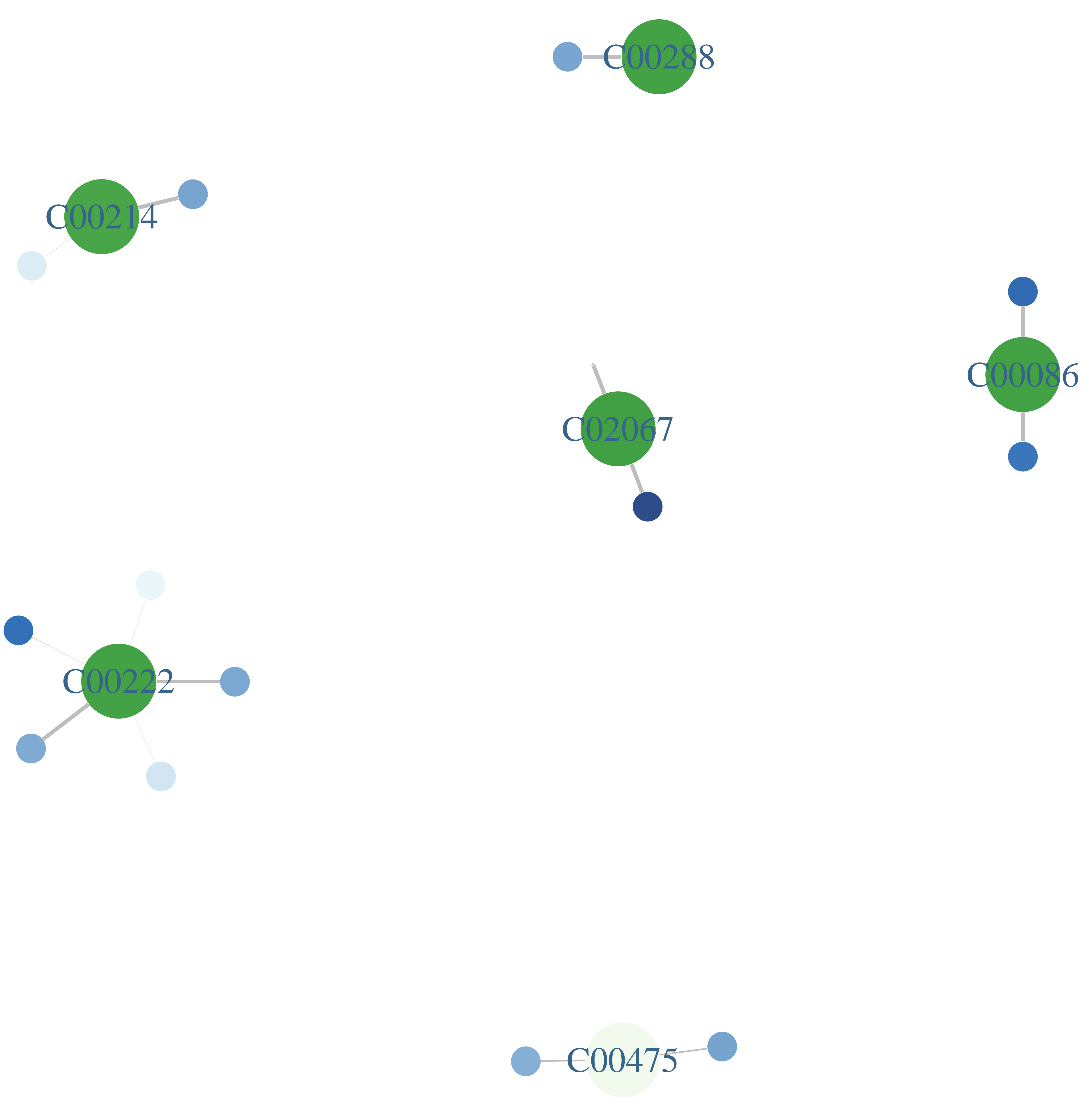
purine metabolism ; p-value: 0.069



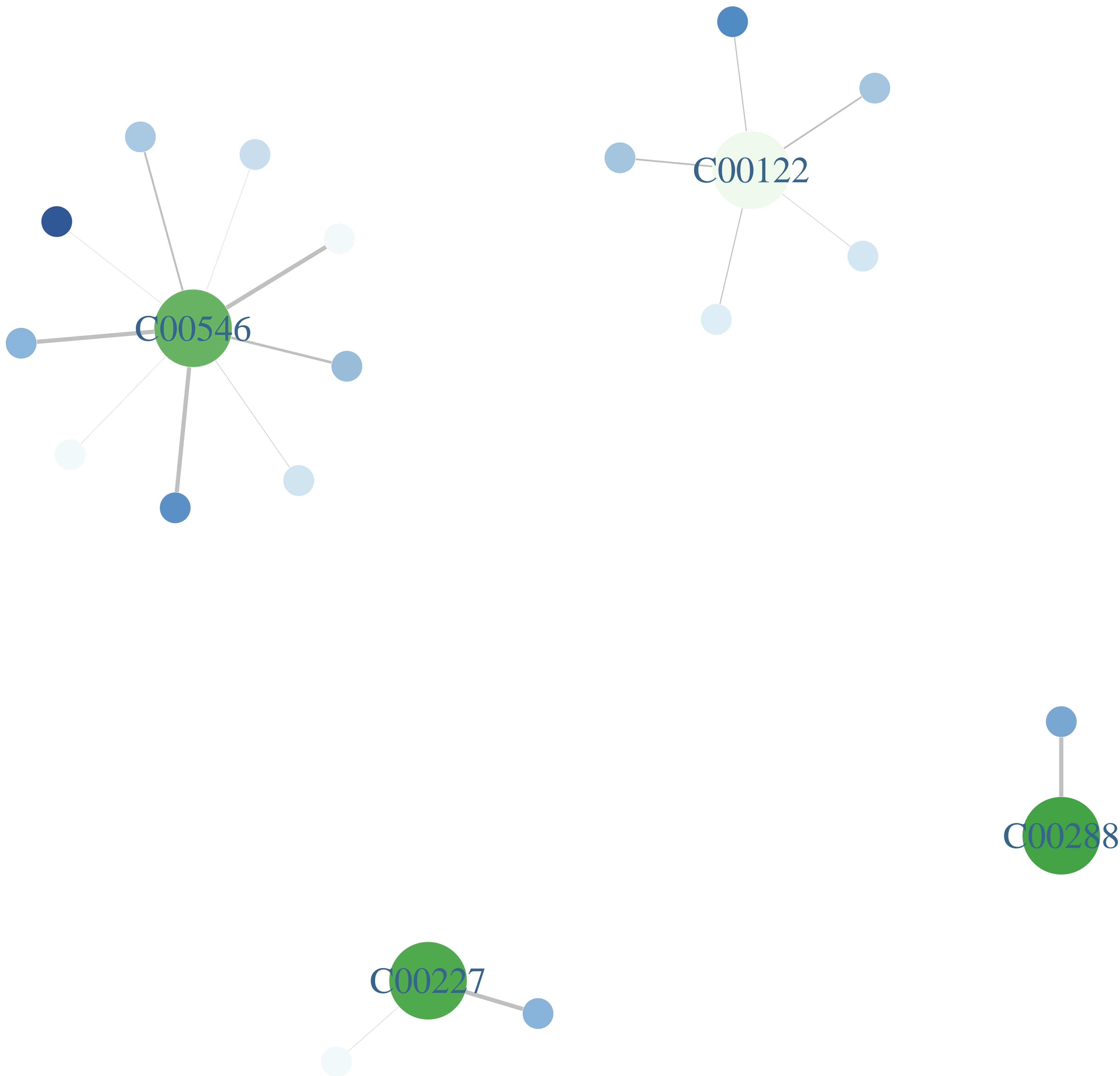
androstenedione metabolism ; p-value: 0.3



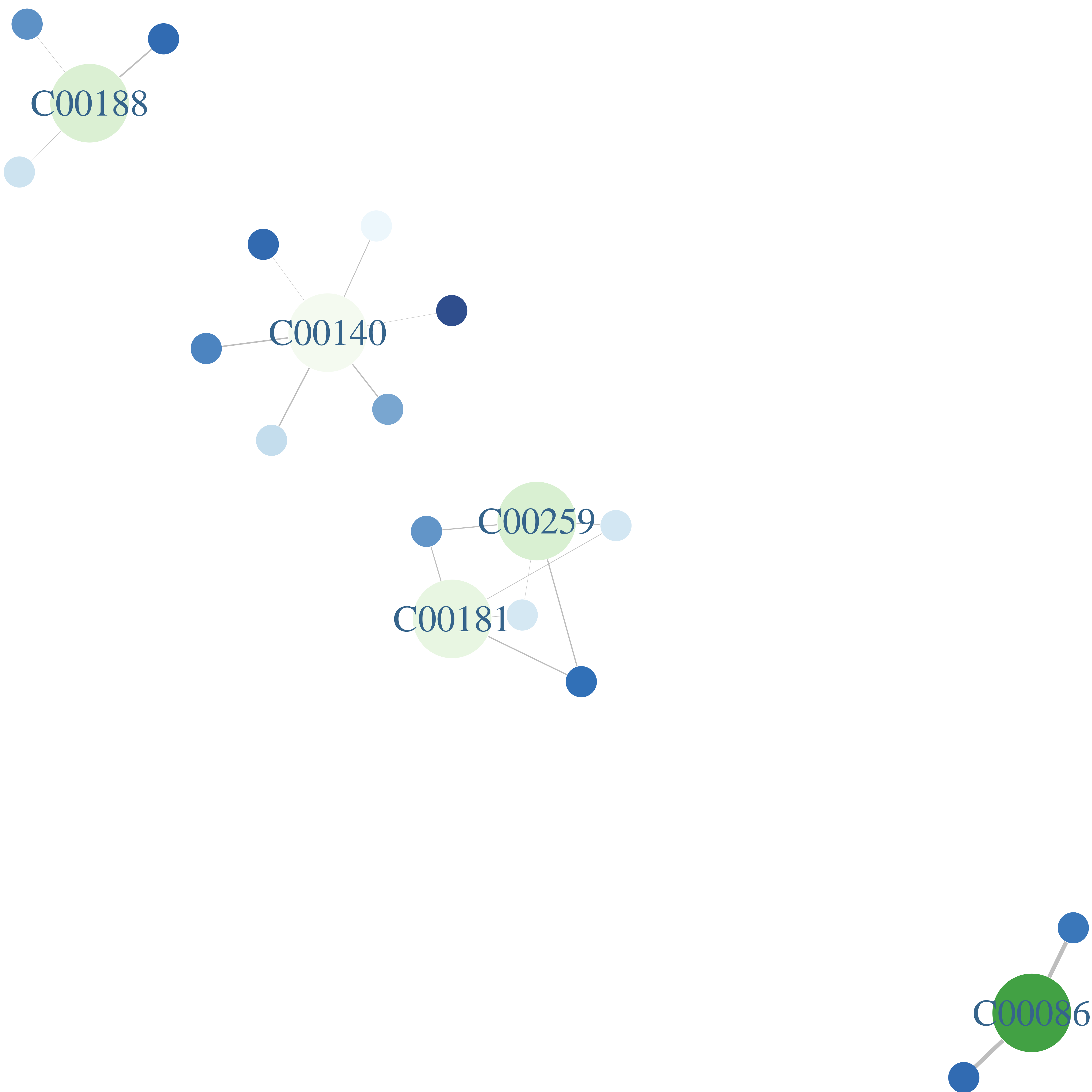
pyrimidine metabolism ; p-value: 0.336



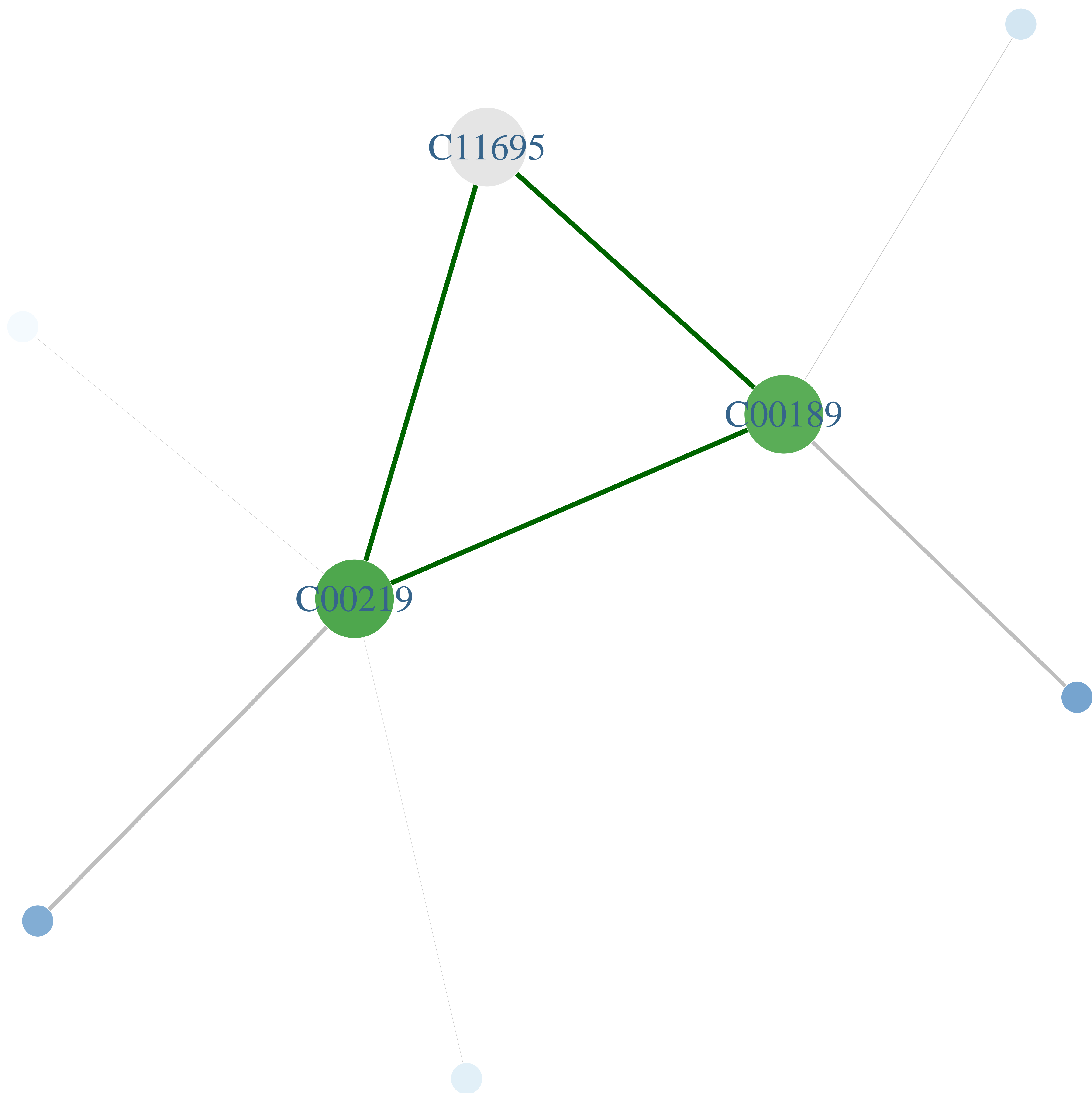
pyruvate metabolism ; p-value: 0.169



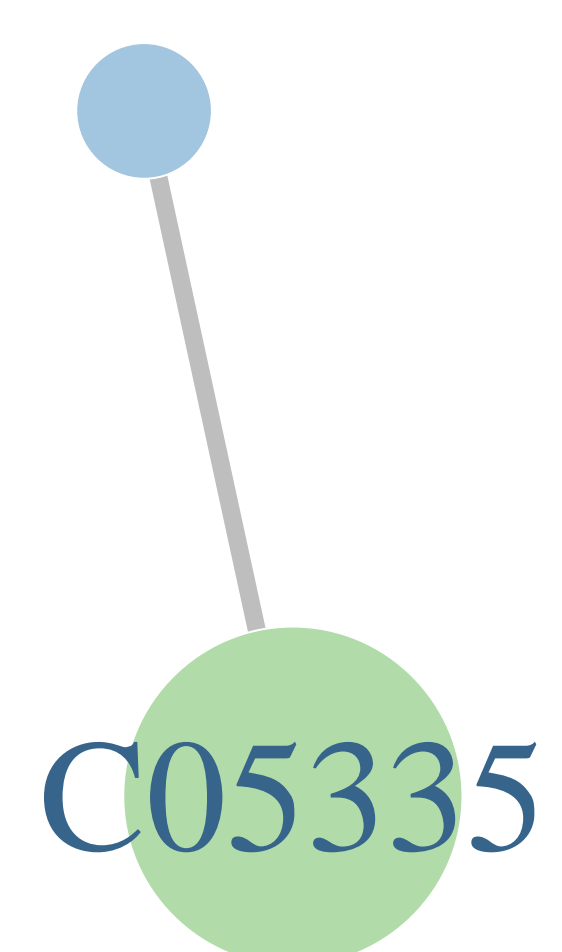
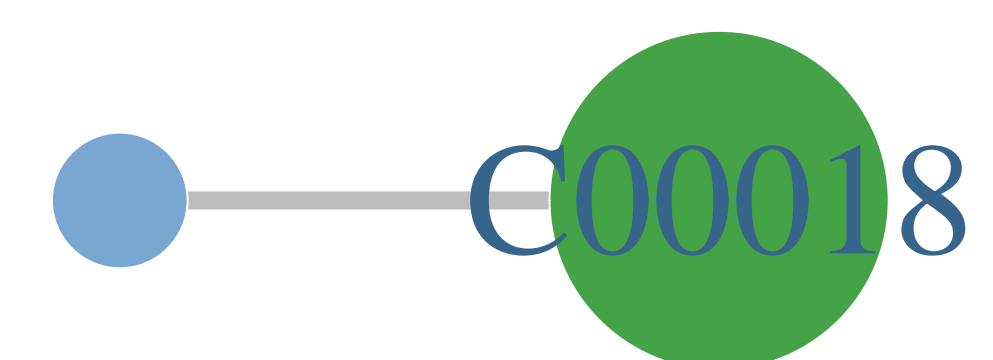
abc transporters ; p-value: 0.411



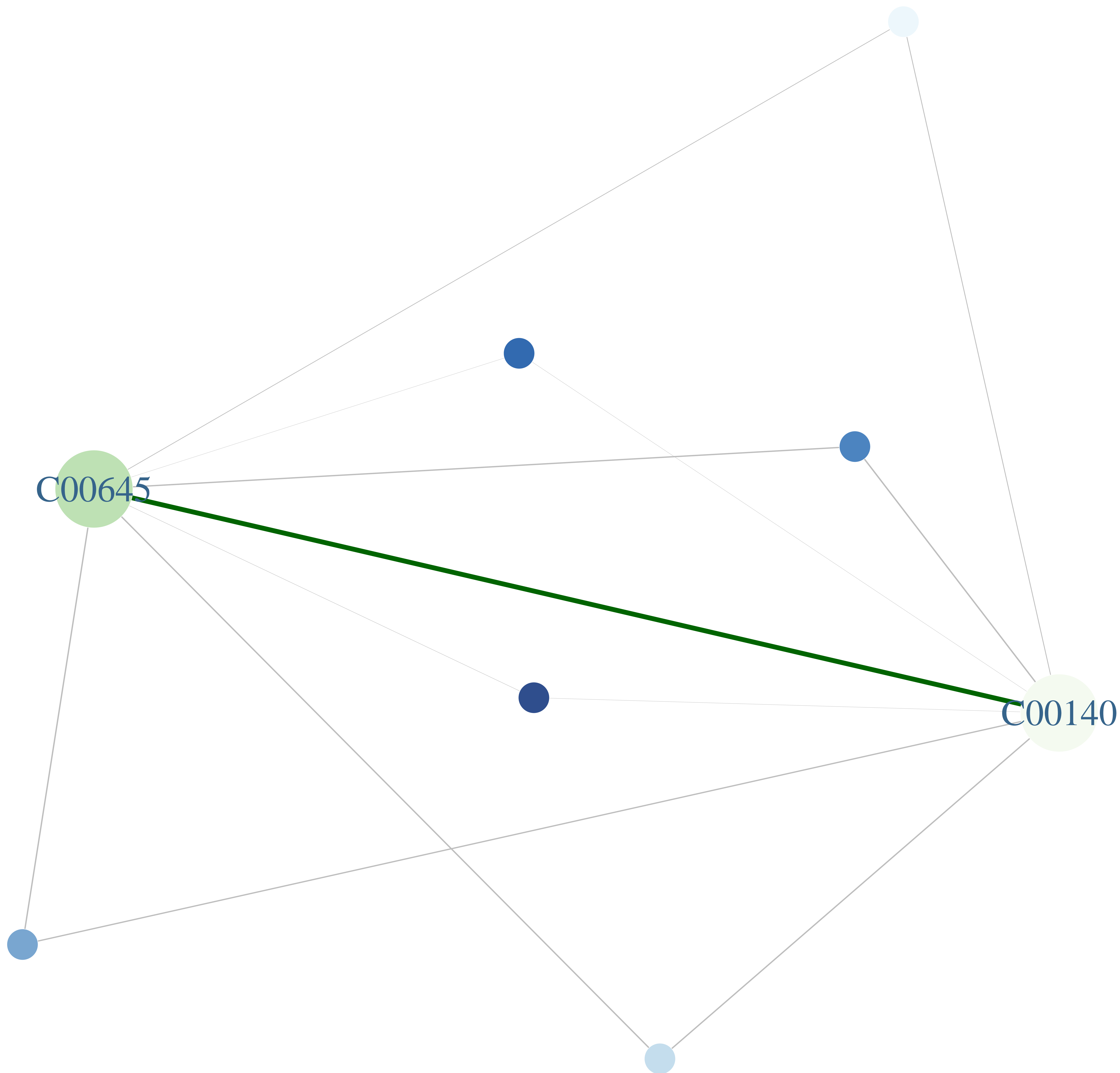
retrograde endocannabinoid signaling ; p-value: 0.265



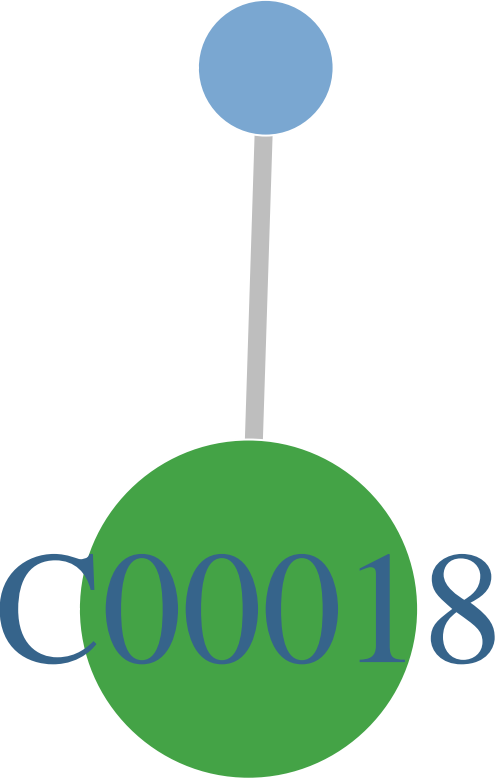
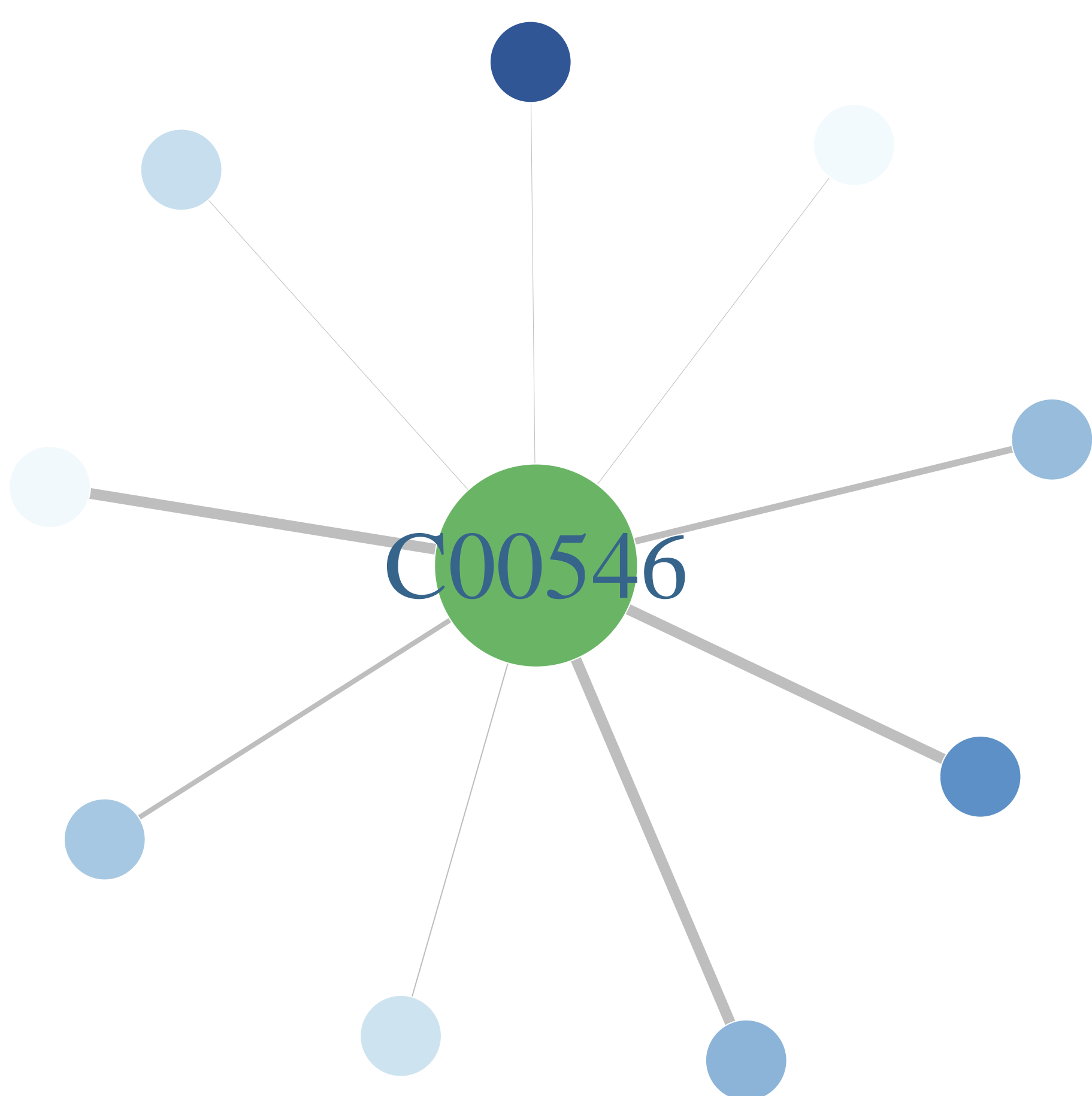
selenoamino acid metabolism ; p-value: 0.197



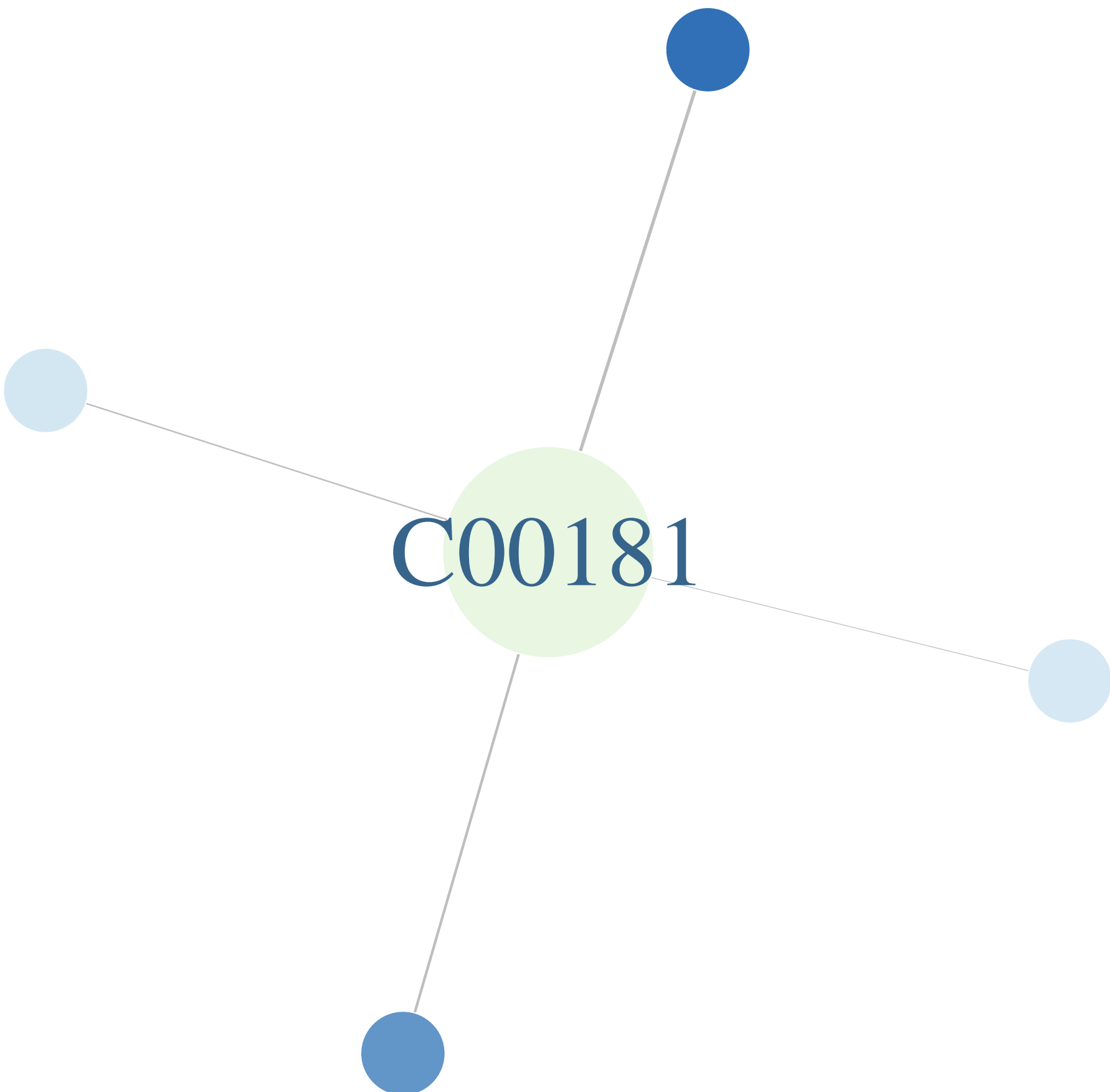
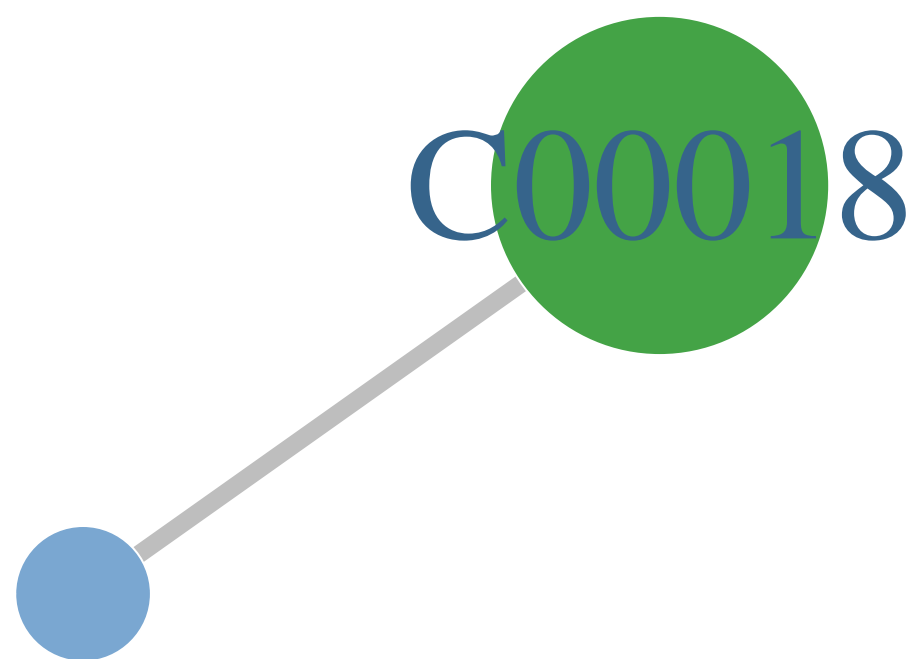
sialic acid metabolism ; p-value: 0.701



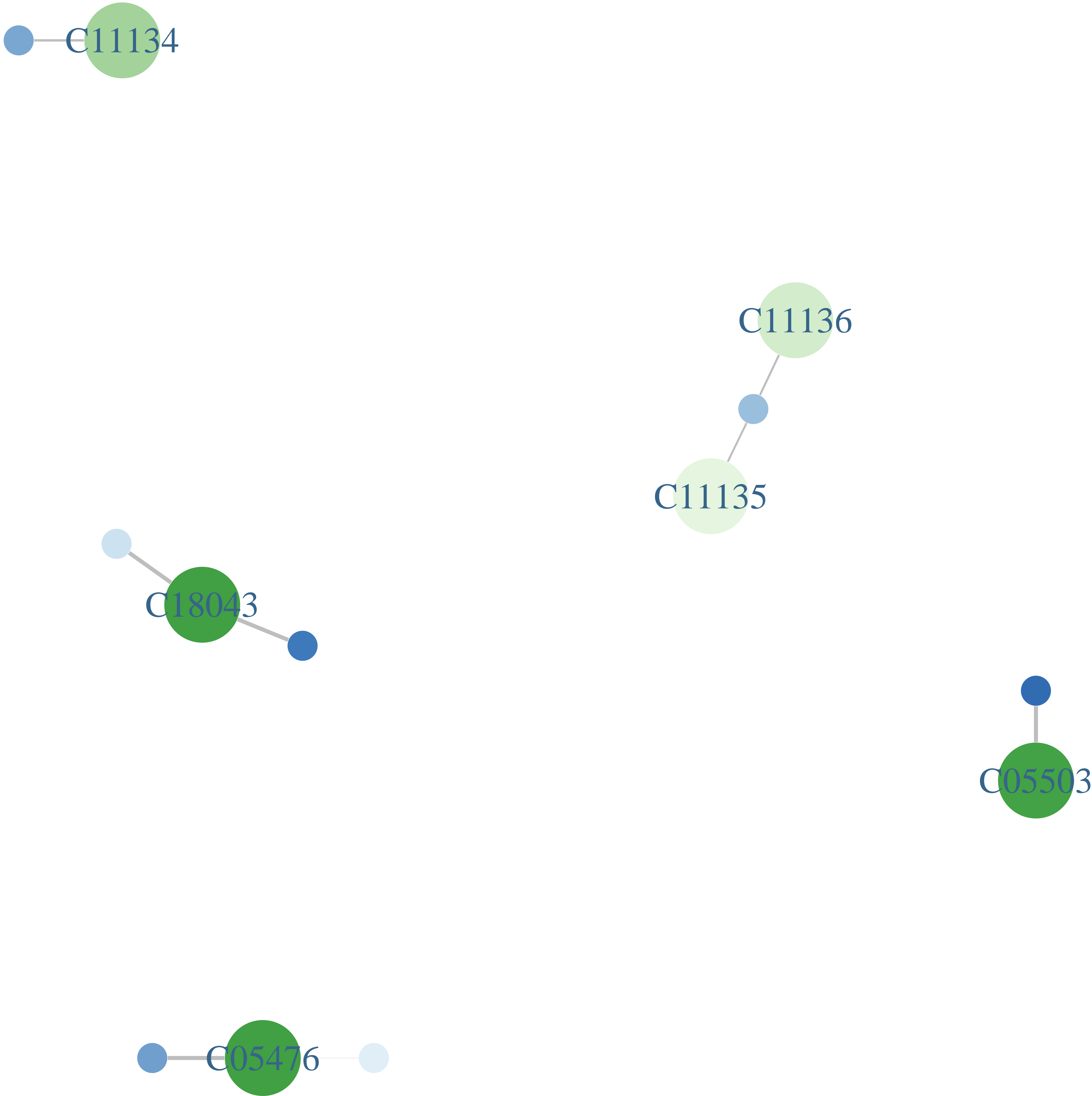
spermidine and spermine biosynthesis ; p-value: 0.195



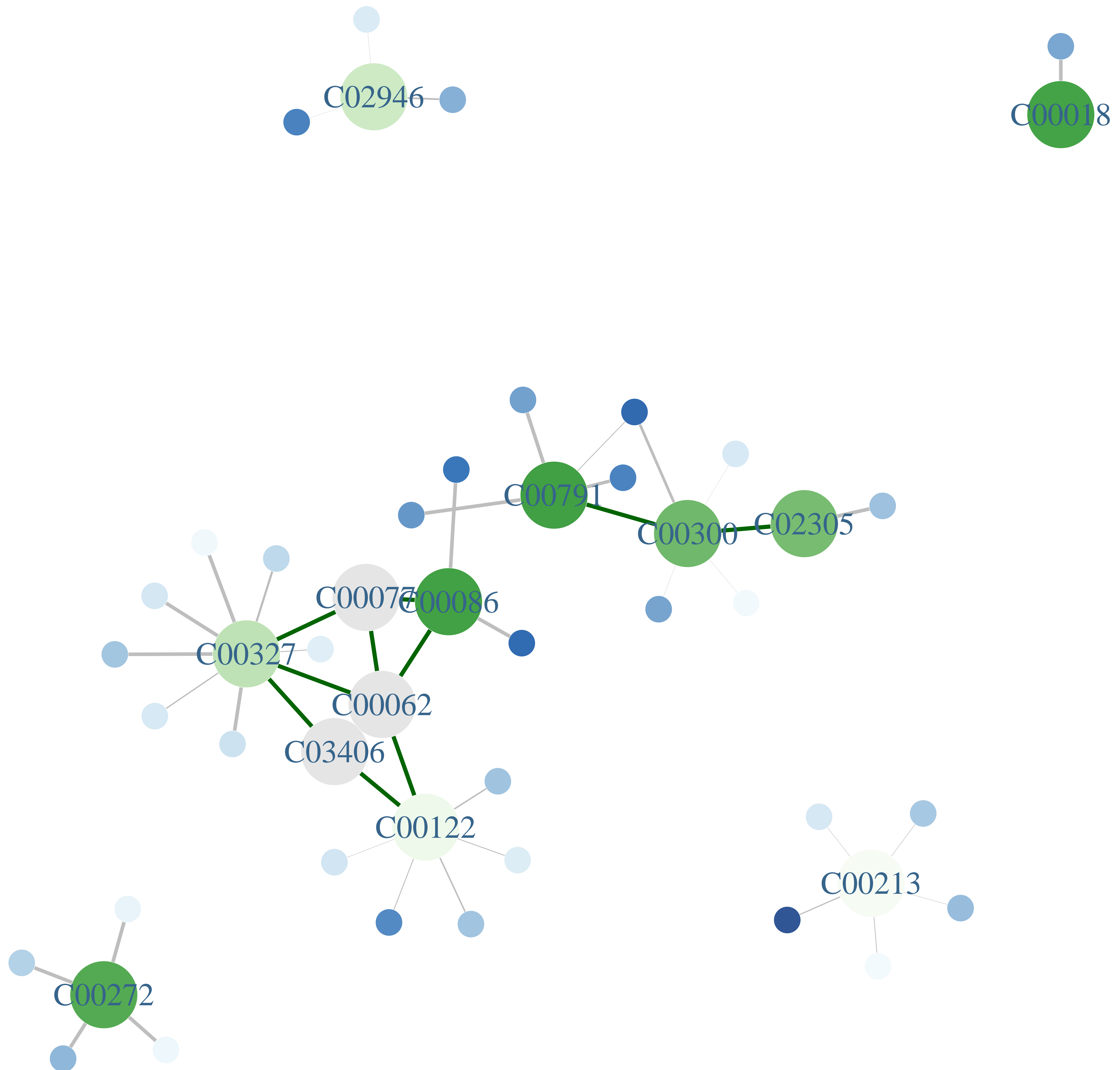
starch and sucrose metabolism ; p-value: 0.635



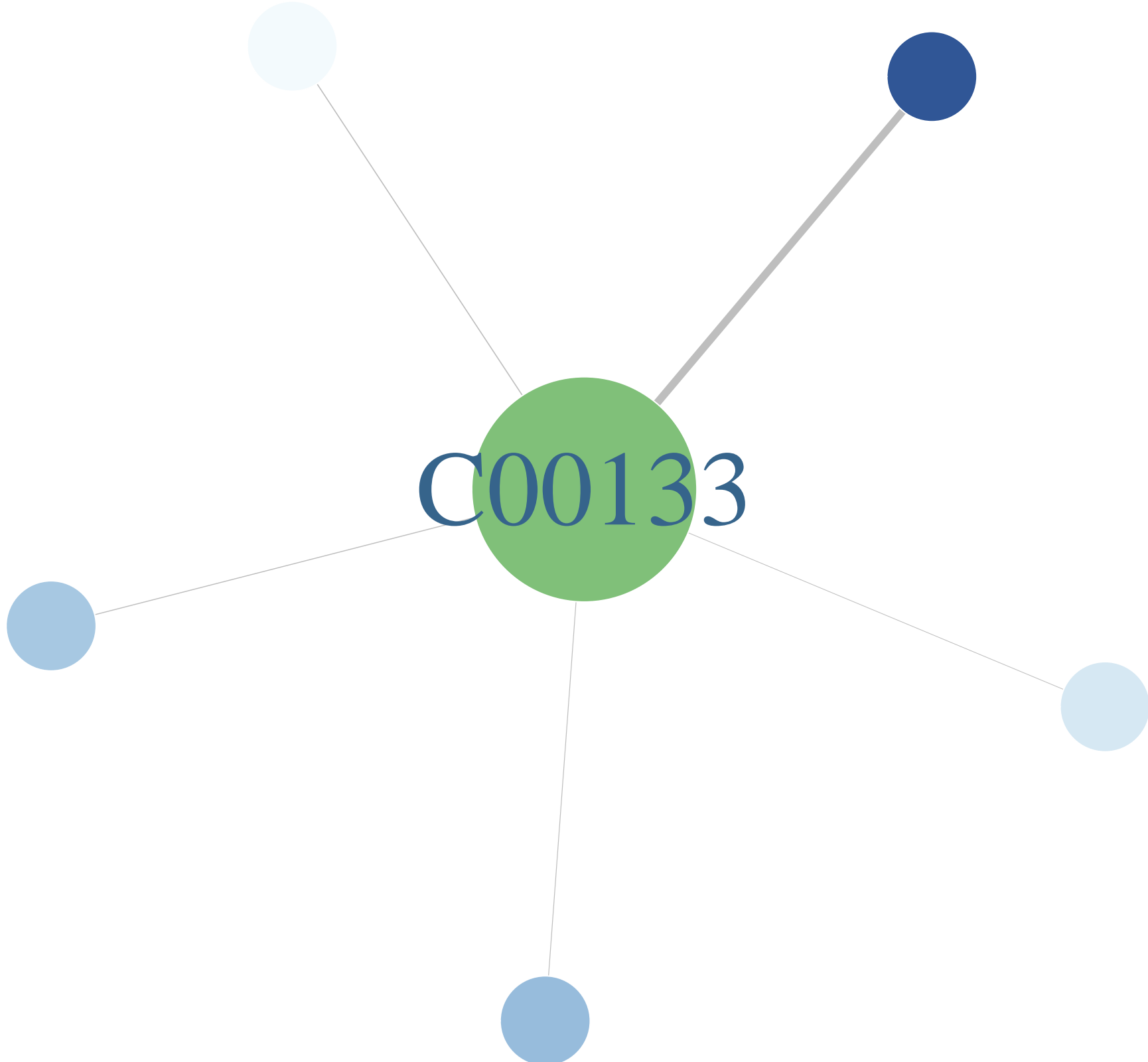
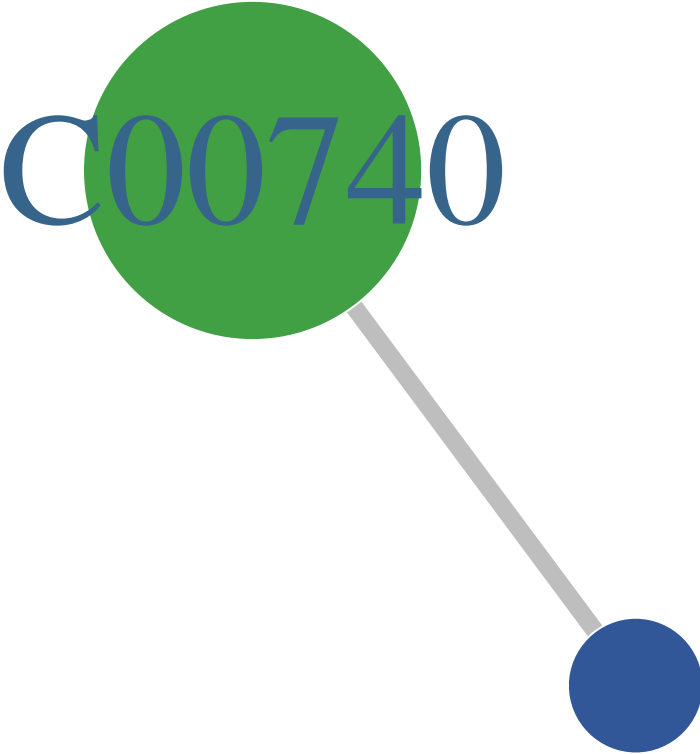
steroid hormone biosynthesis ; p-value: 0.552



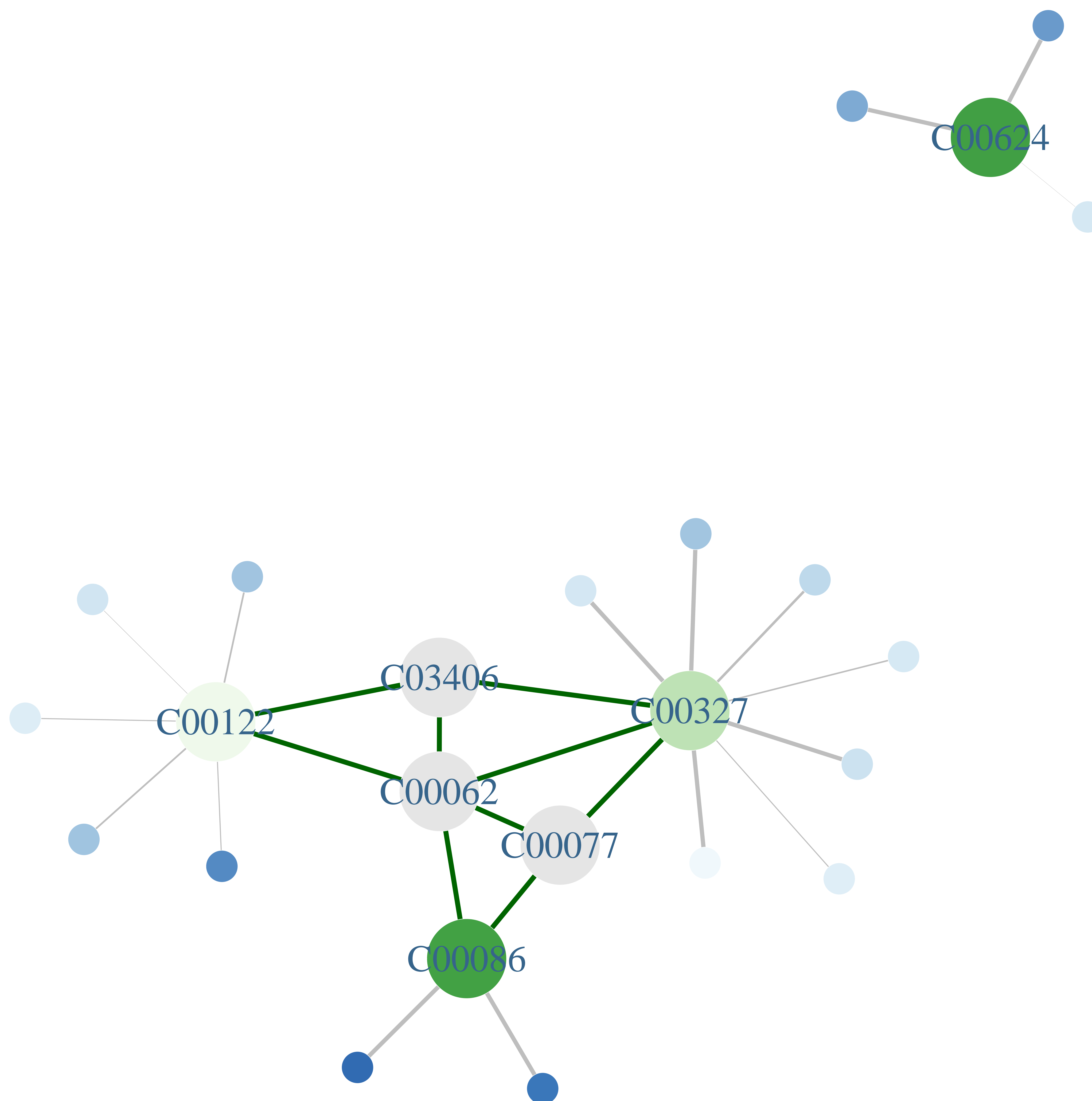
arginine and proline metabolism ; p-value: 0.021



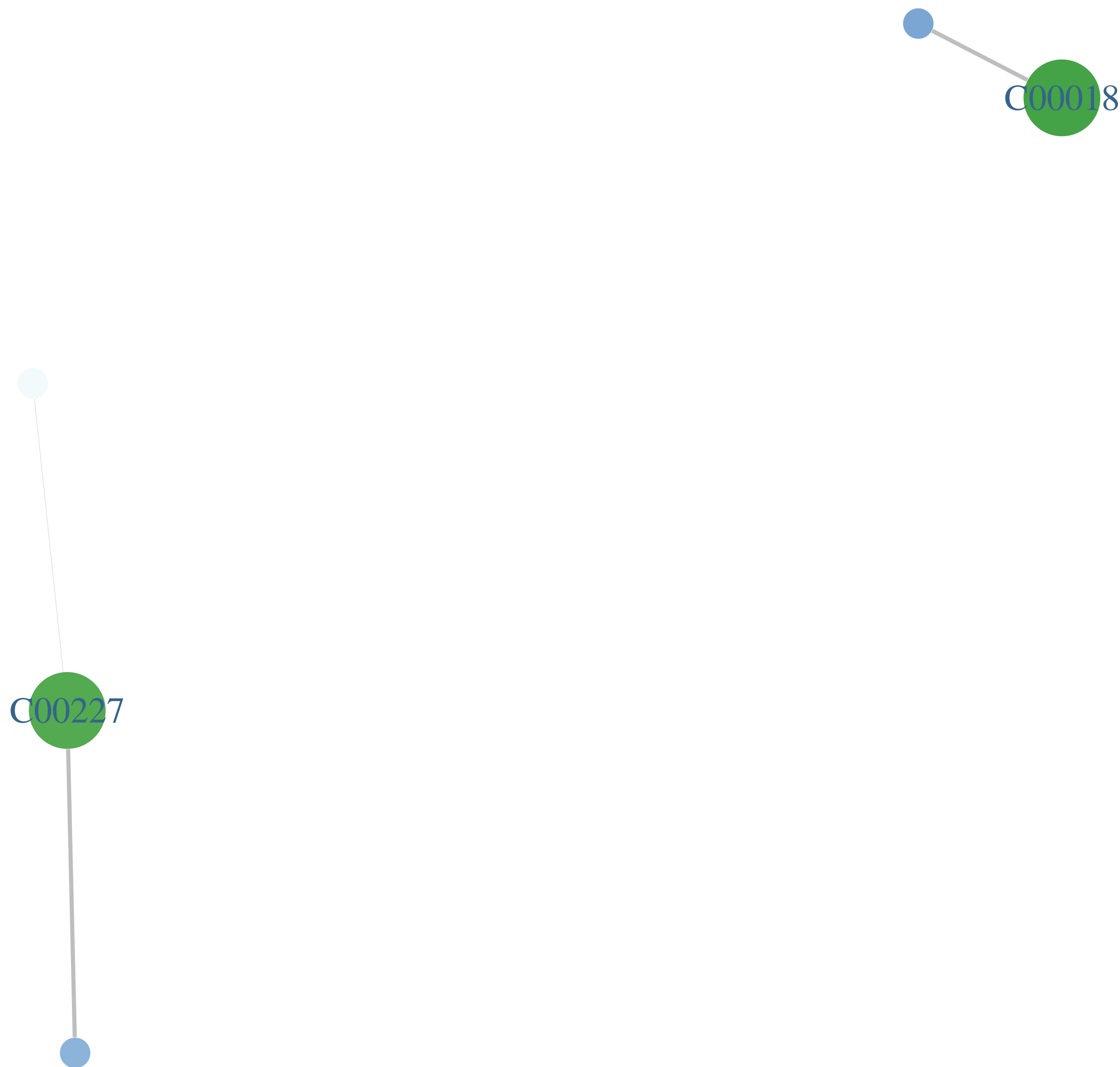
taste transduction ; p-value: 0.403



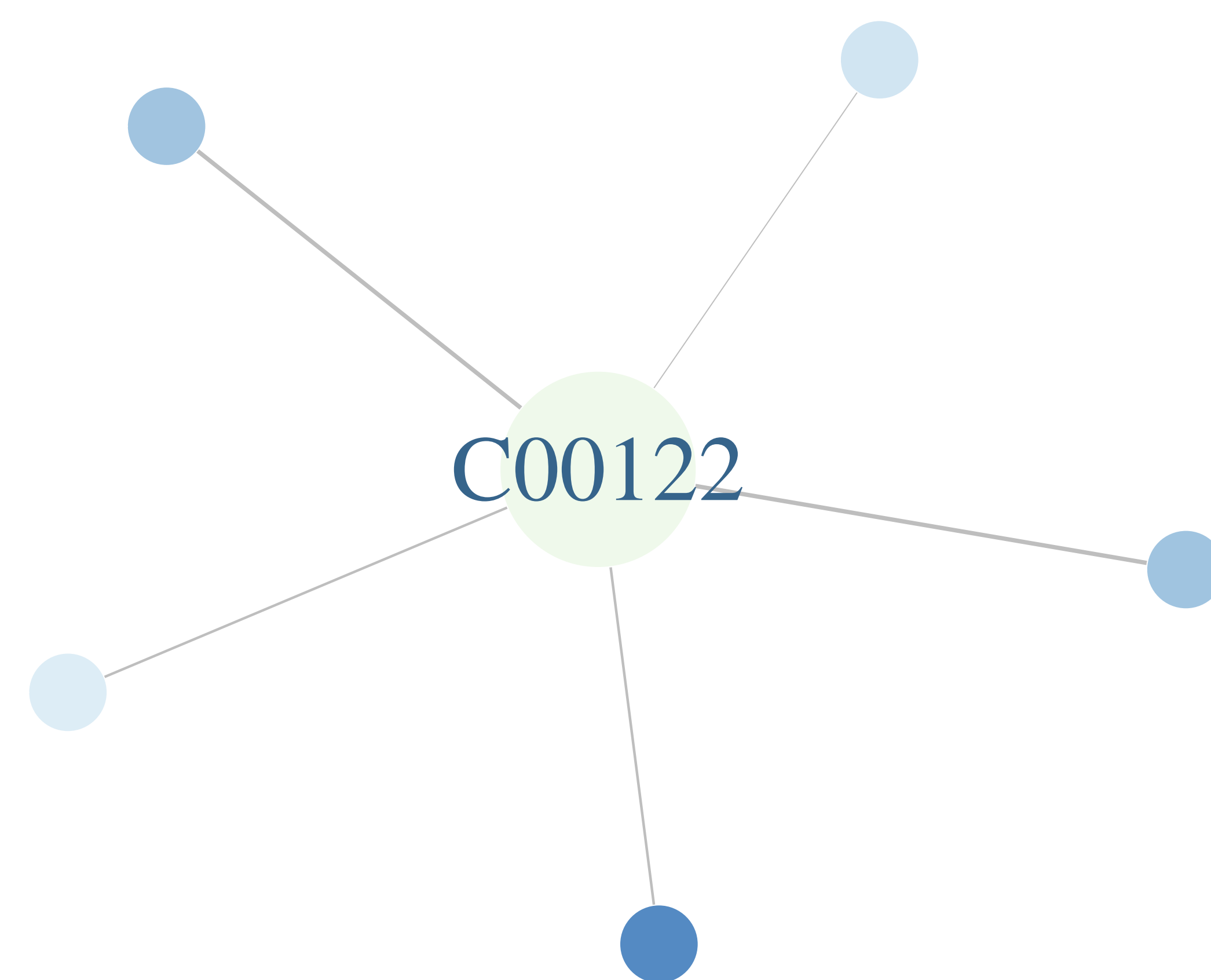
arginine biosynthesis ; p-value: 0.009



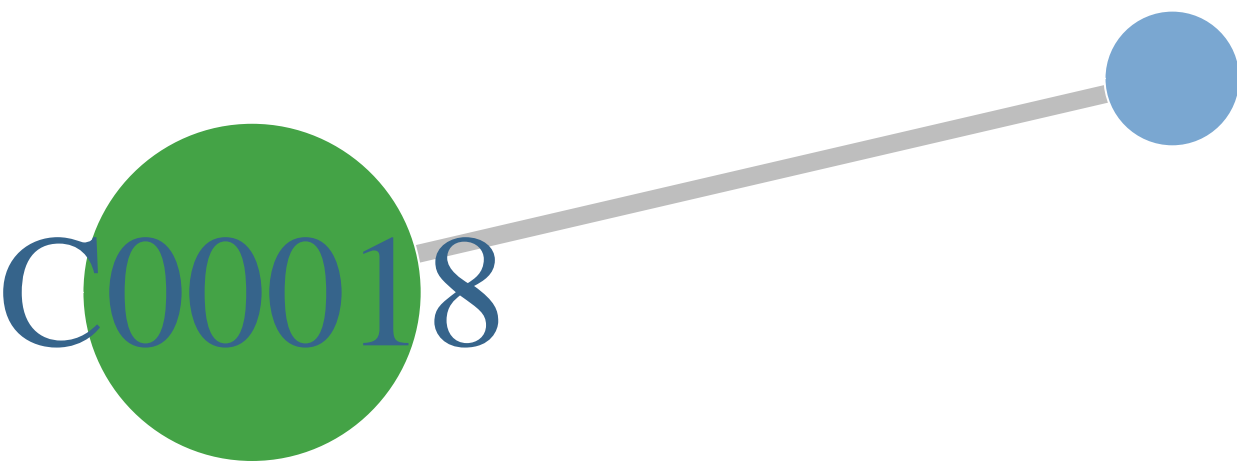
taurine and hypotaurine metabolism ; p-value: 0.3



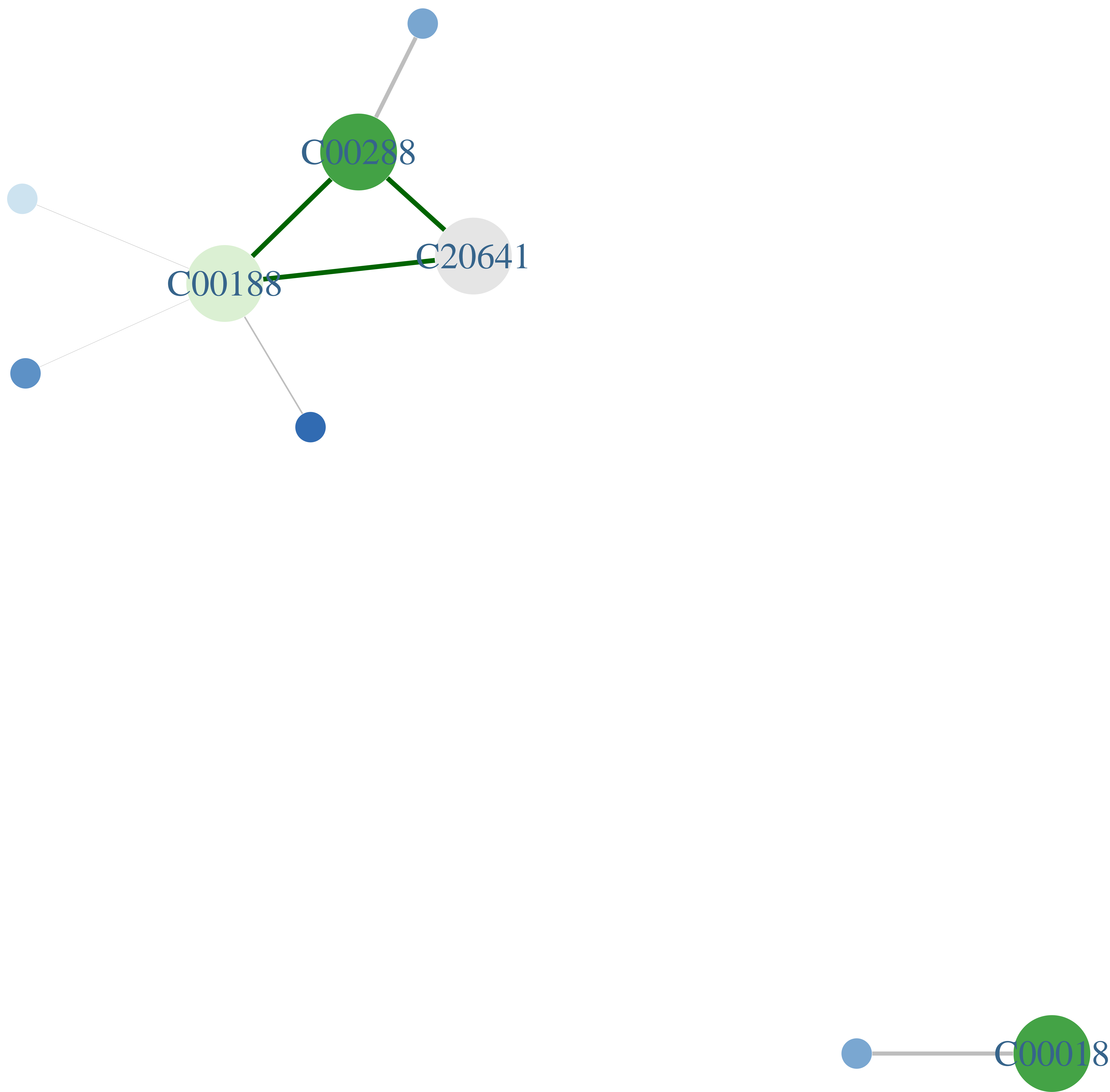
tca cycle ; p-value: 0.335



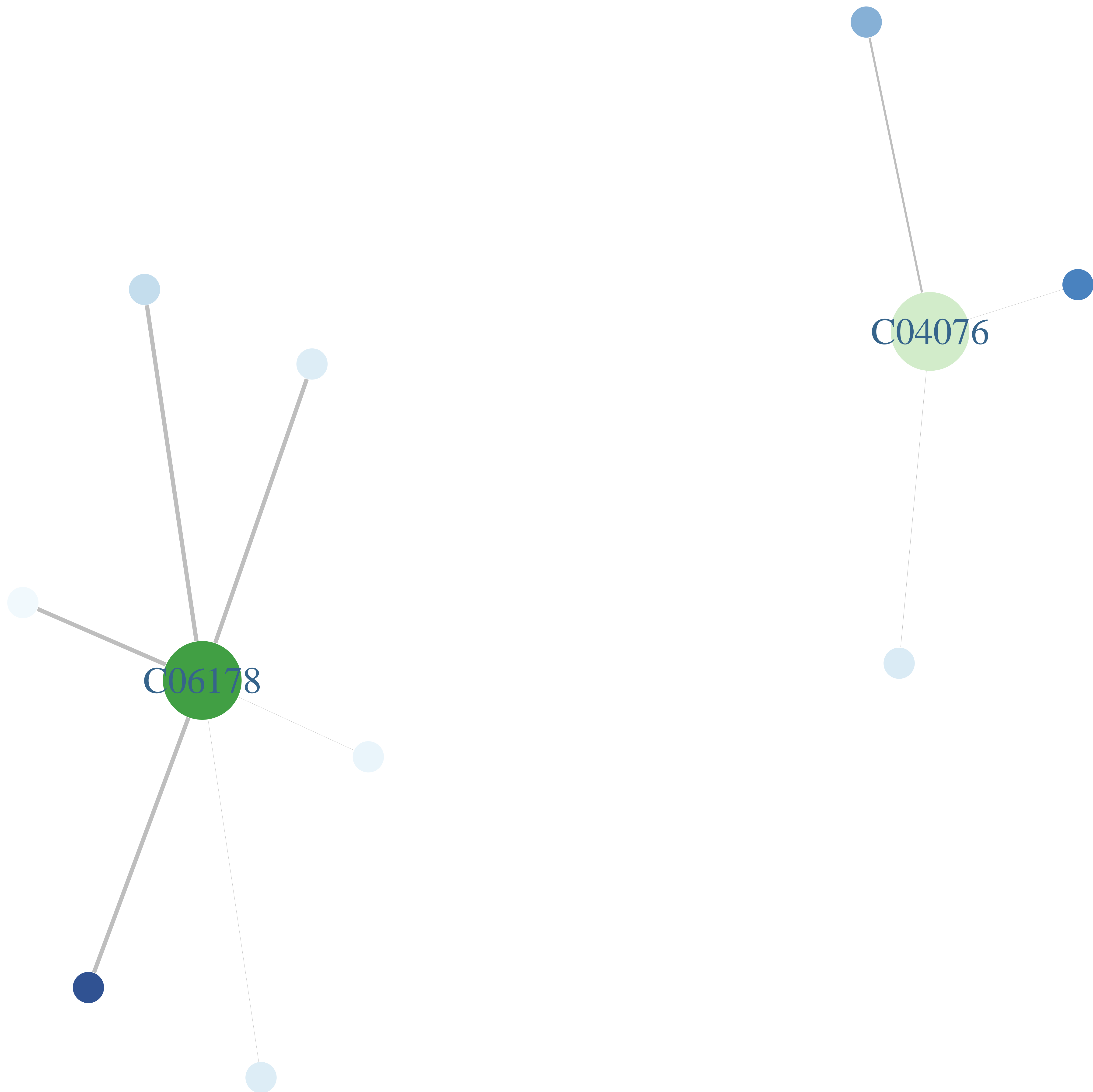
thiamine metabolism ; p-value: 0.097



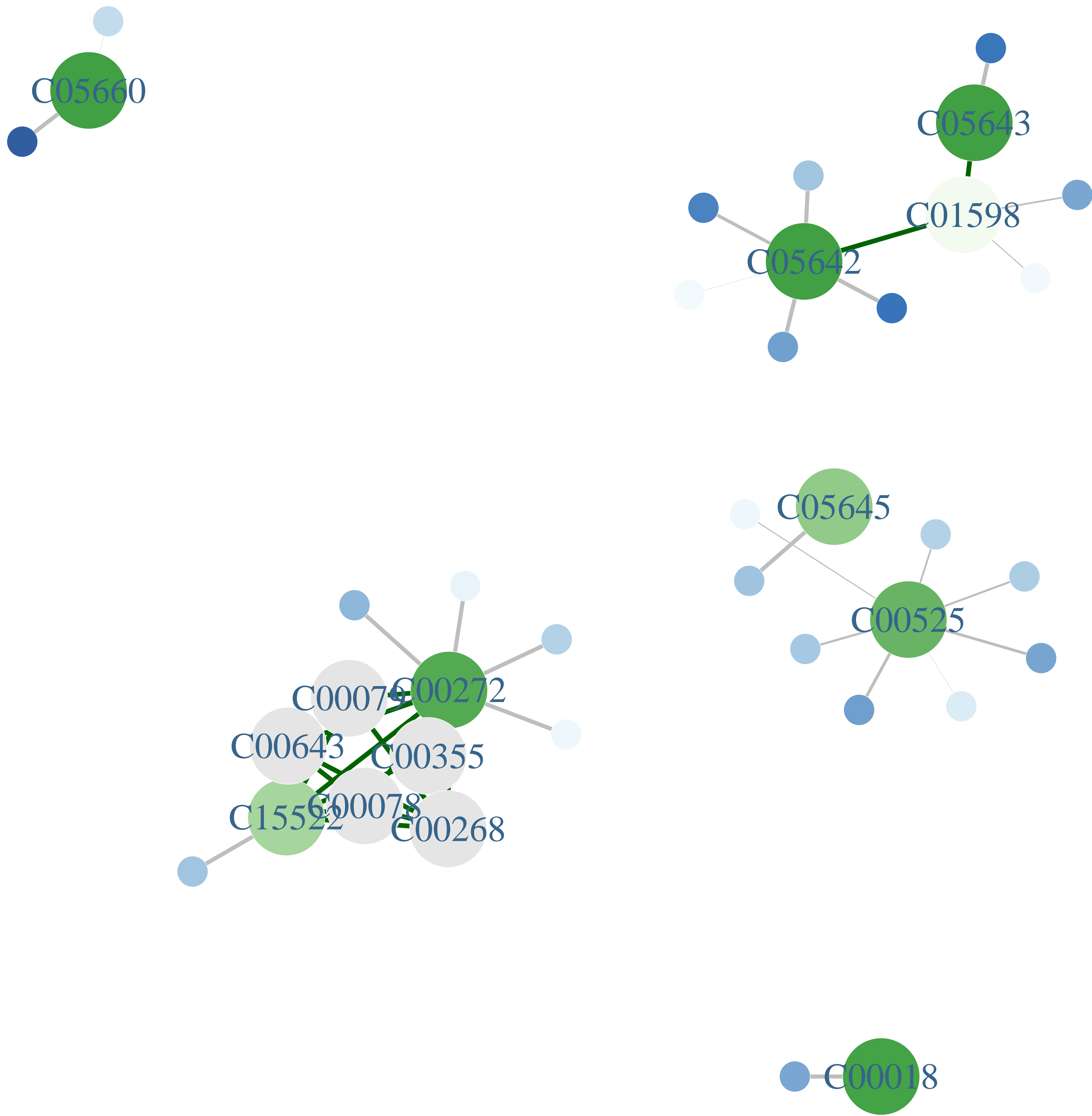
threonine and 2-oxobutanoate degradation ; p-value: 0.055



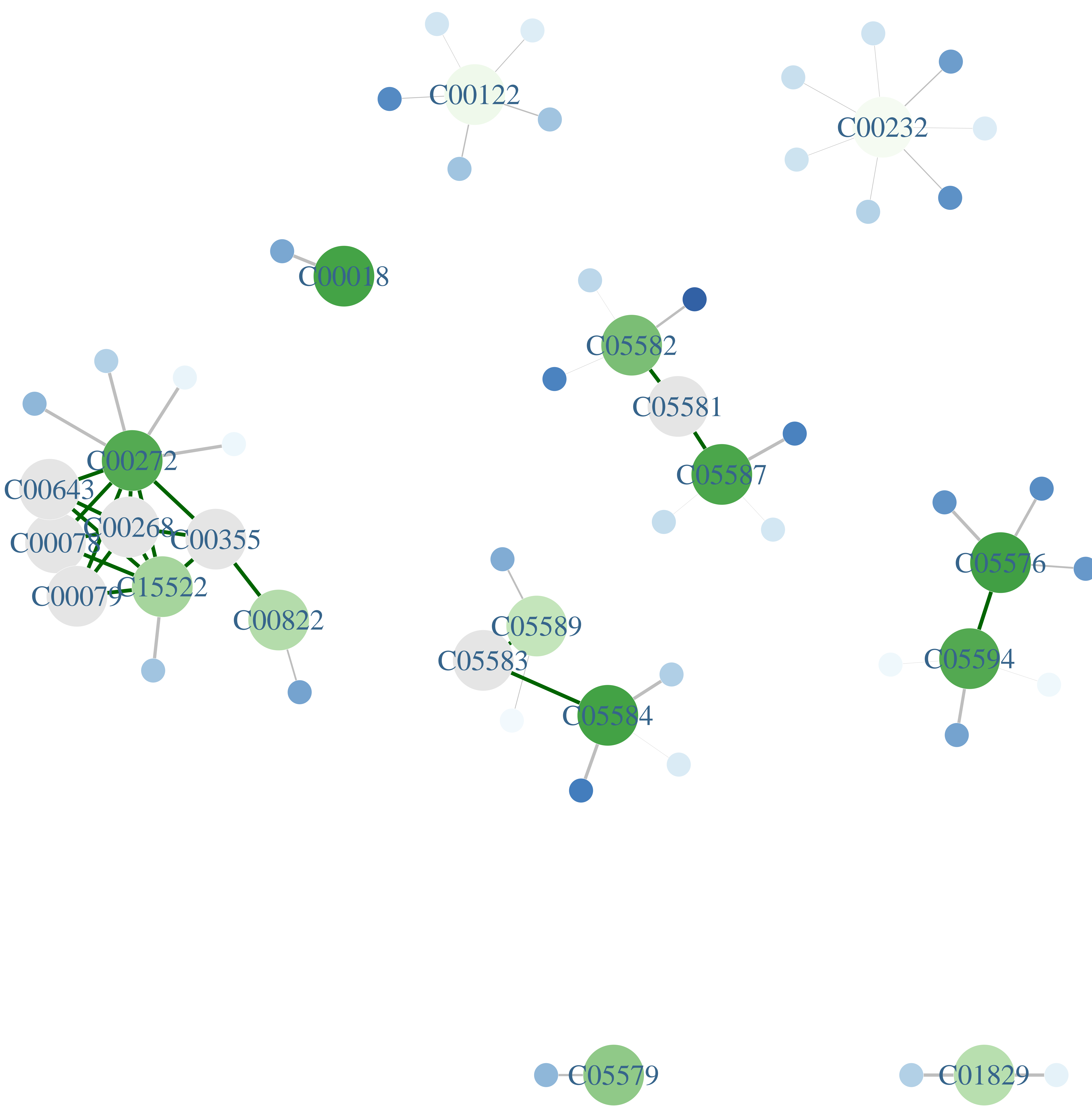
tropane, piperidine and pyridine alkaloid biosynthesis ; p-value: 0.37



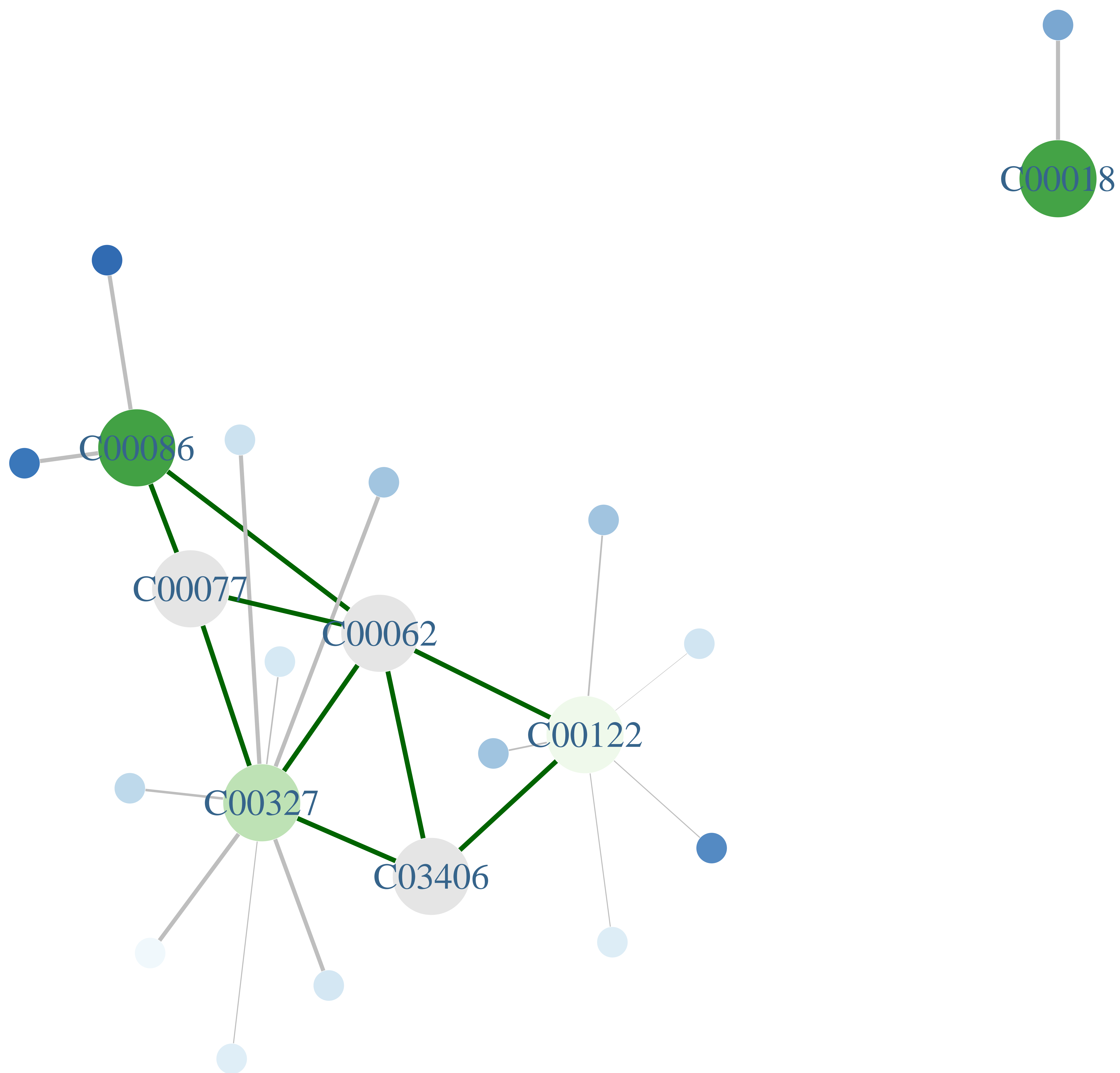
tryptophan metabolism ; p-value: 0.03



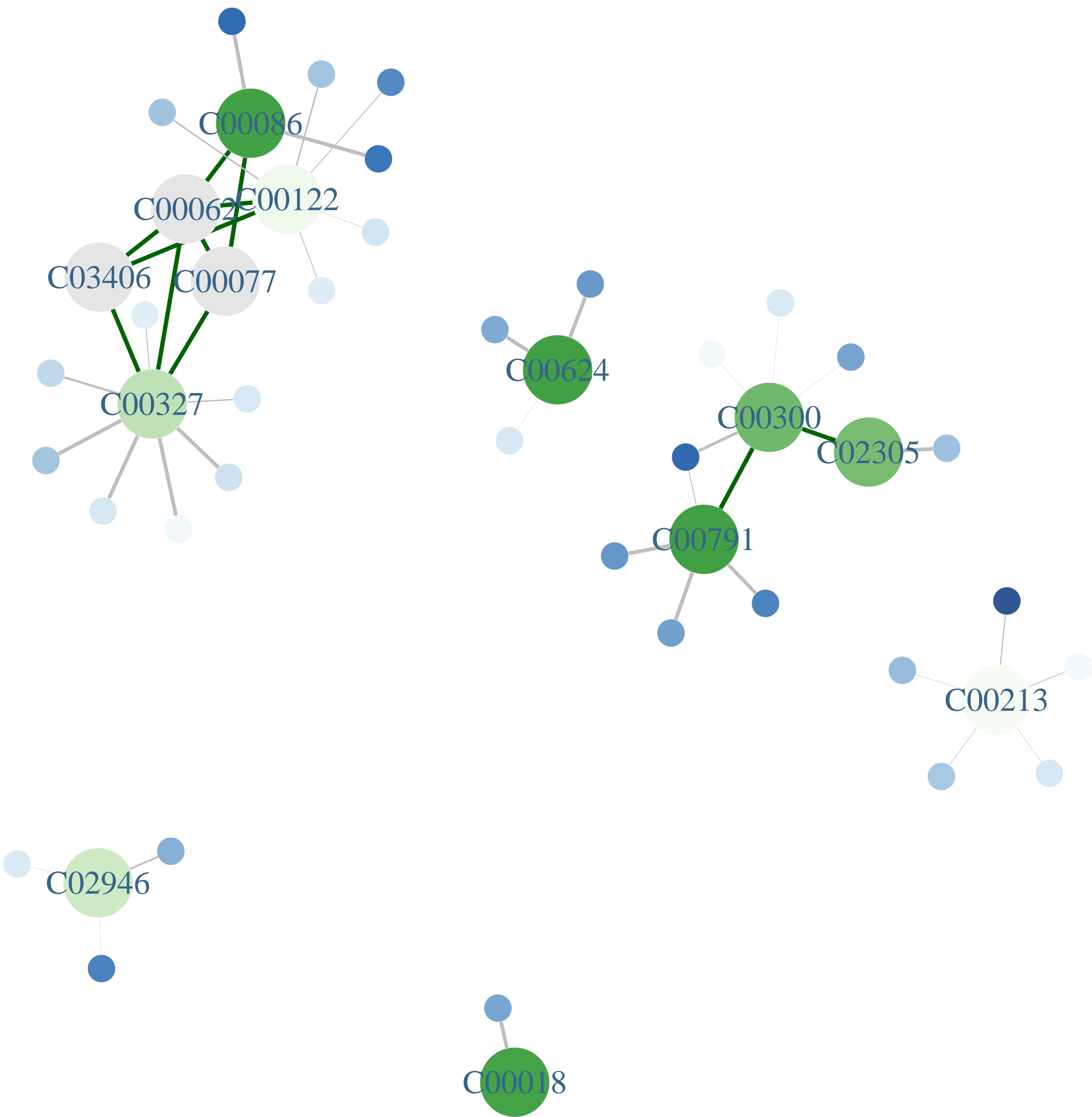
tyrosine metabolism ; p-value: 0.003



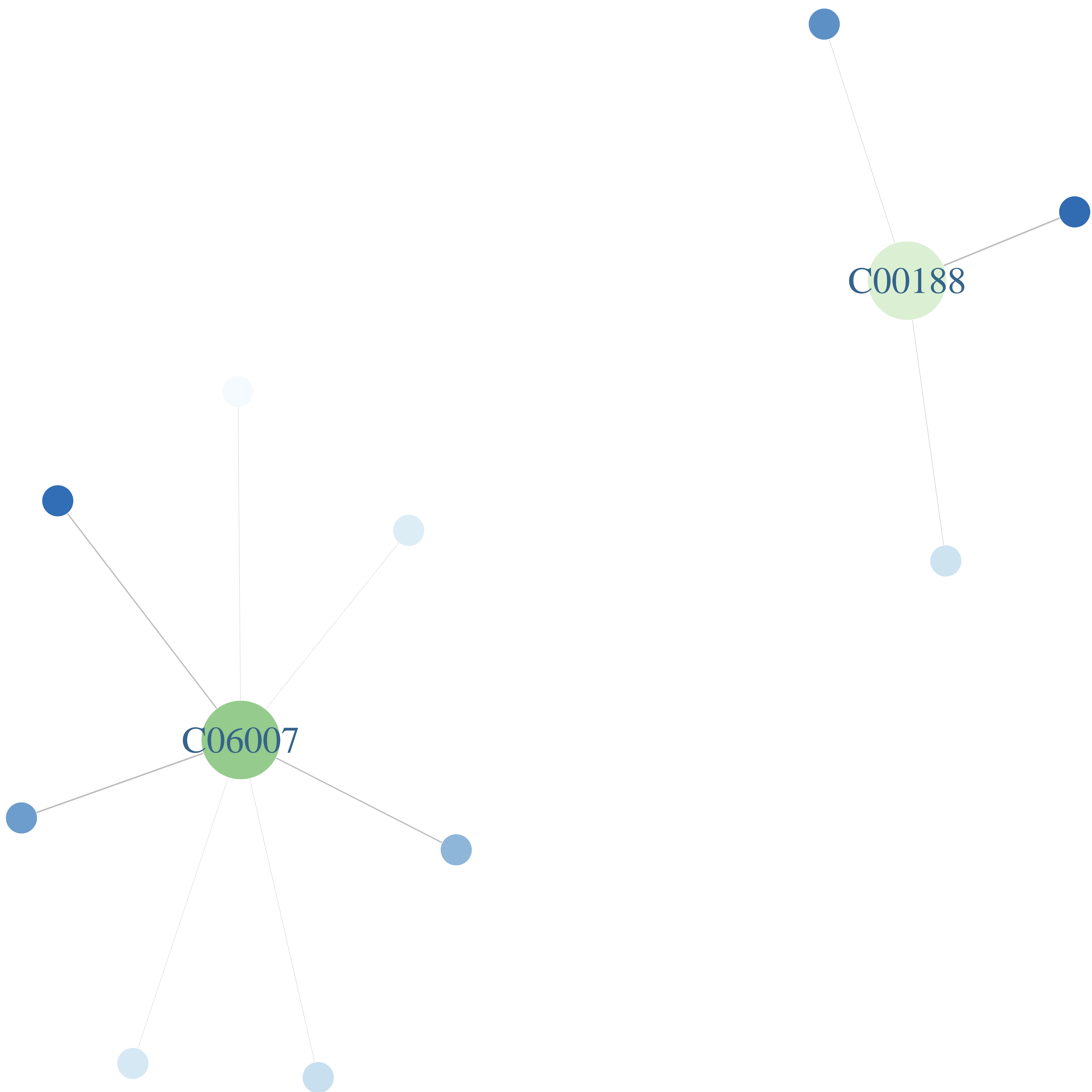
urea cycle ; p-value: 0.009



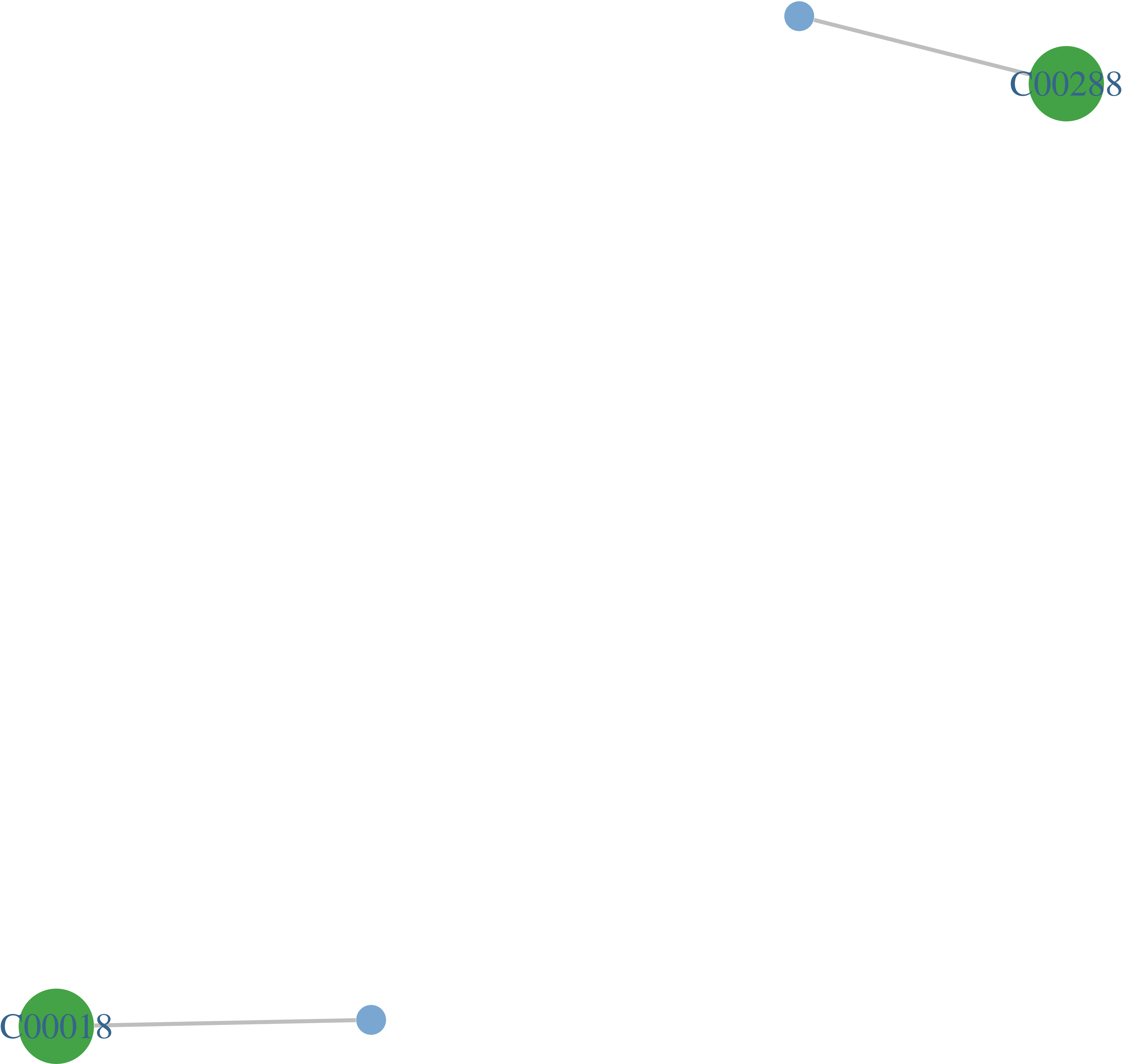
urea cycle/amino group metabolism ; p-value: 0.002



valine, leucine and isoleucine biosynthesis ; p-value: 0.436



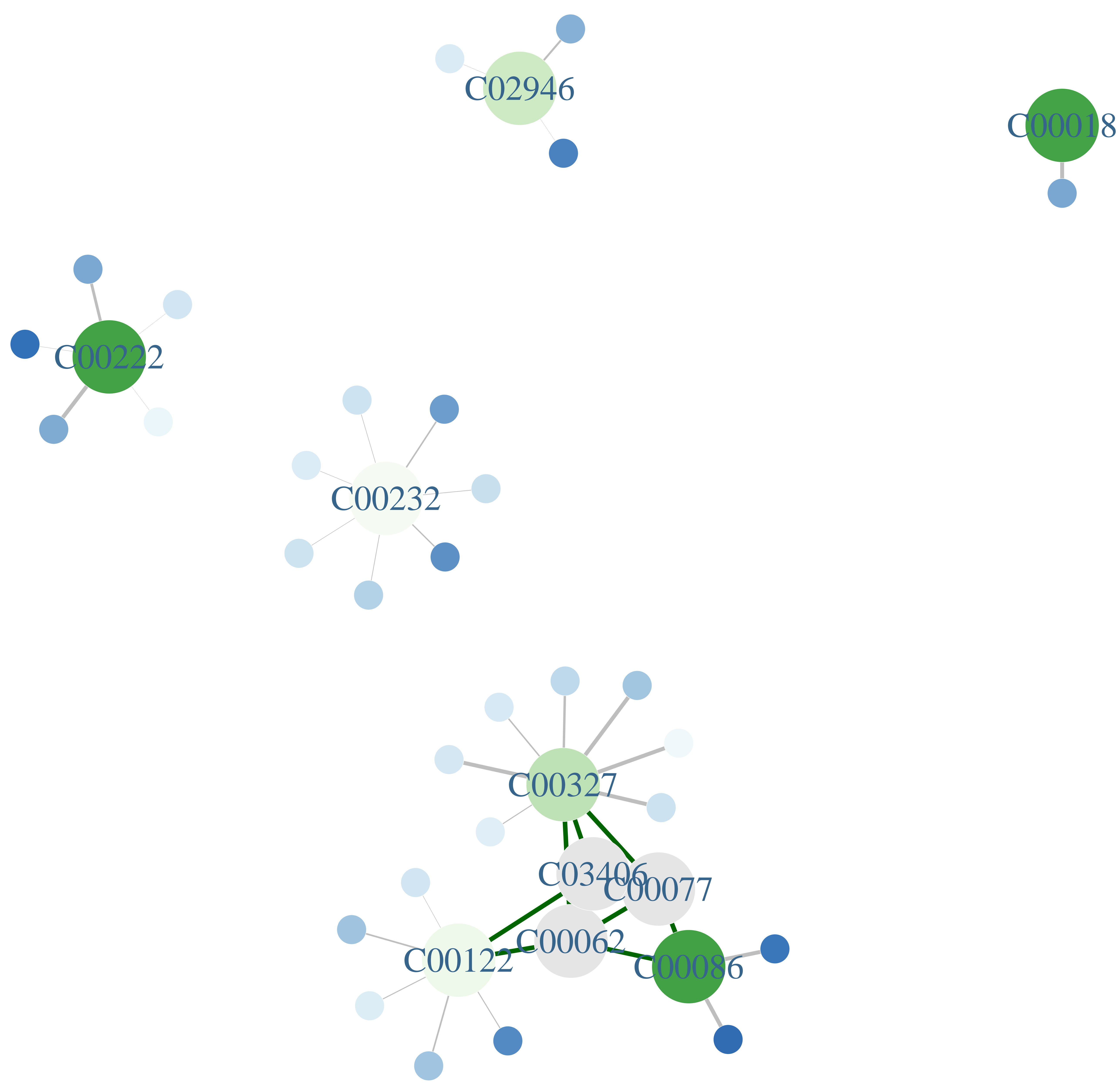
valine, leucine, and isoleucine degradation ; p-value: 0.884



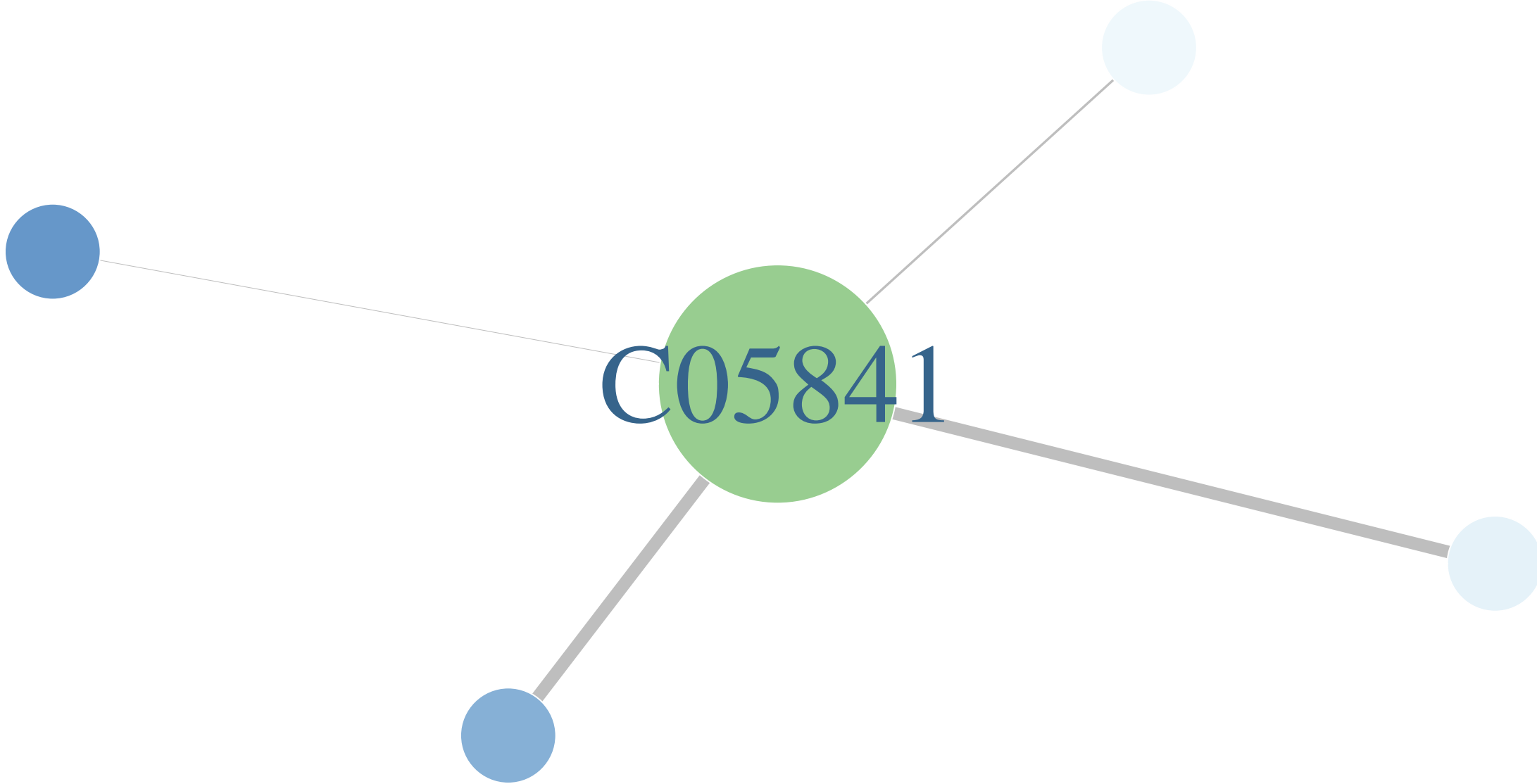
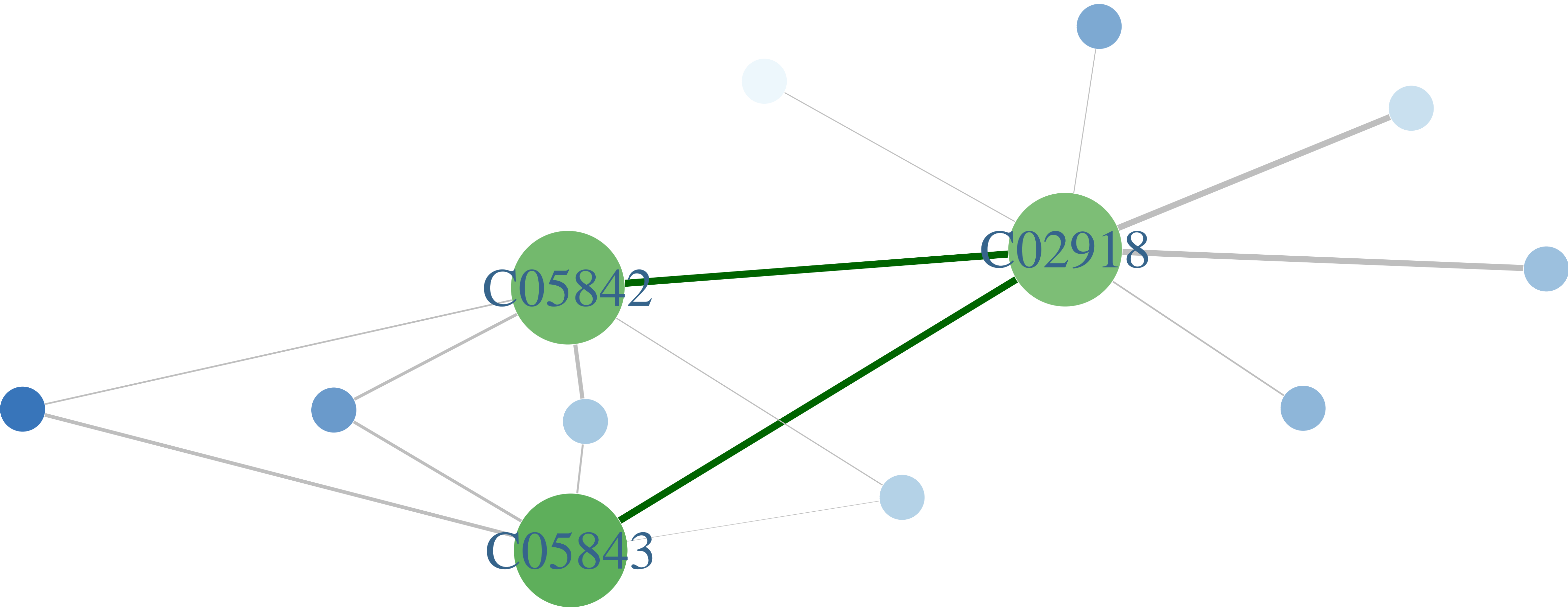
vancomycin resistance ; p-value: 0.044



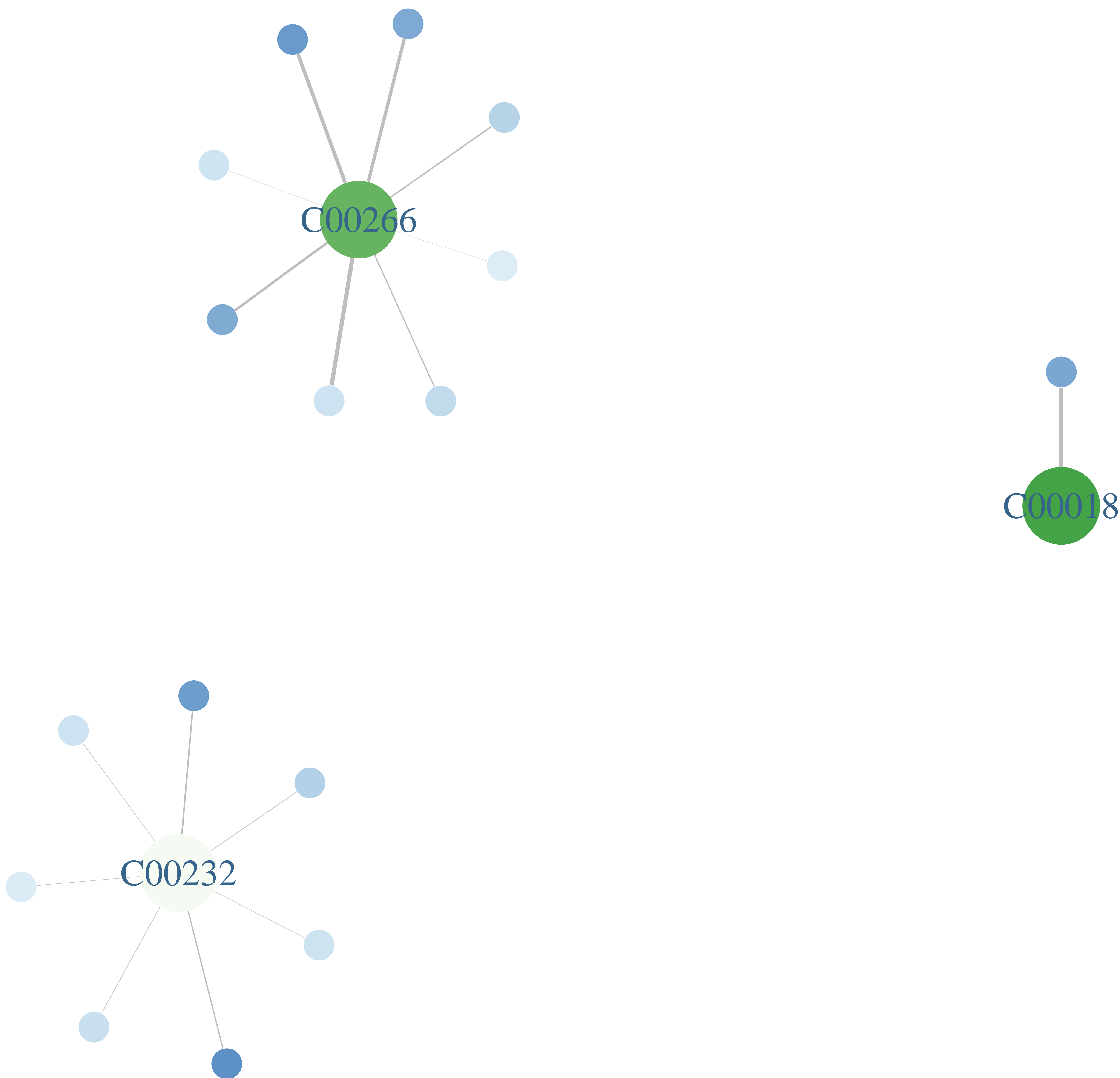
aspartate and asparagine metabolism ; p-value: 0.177



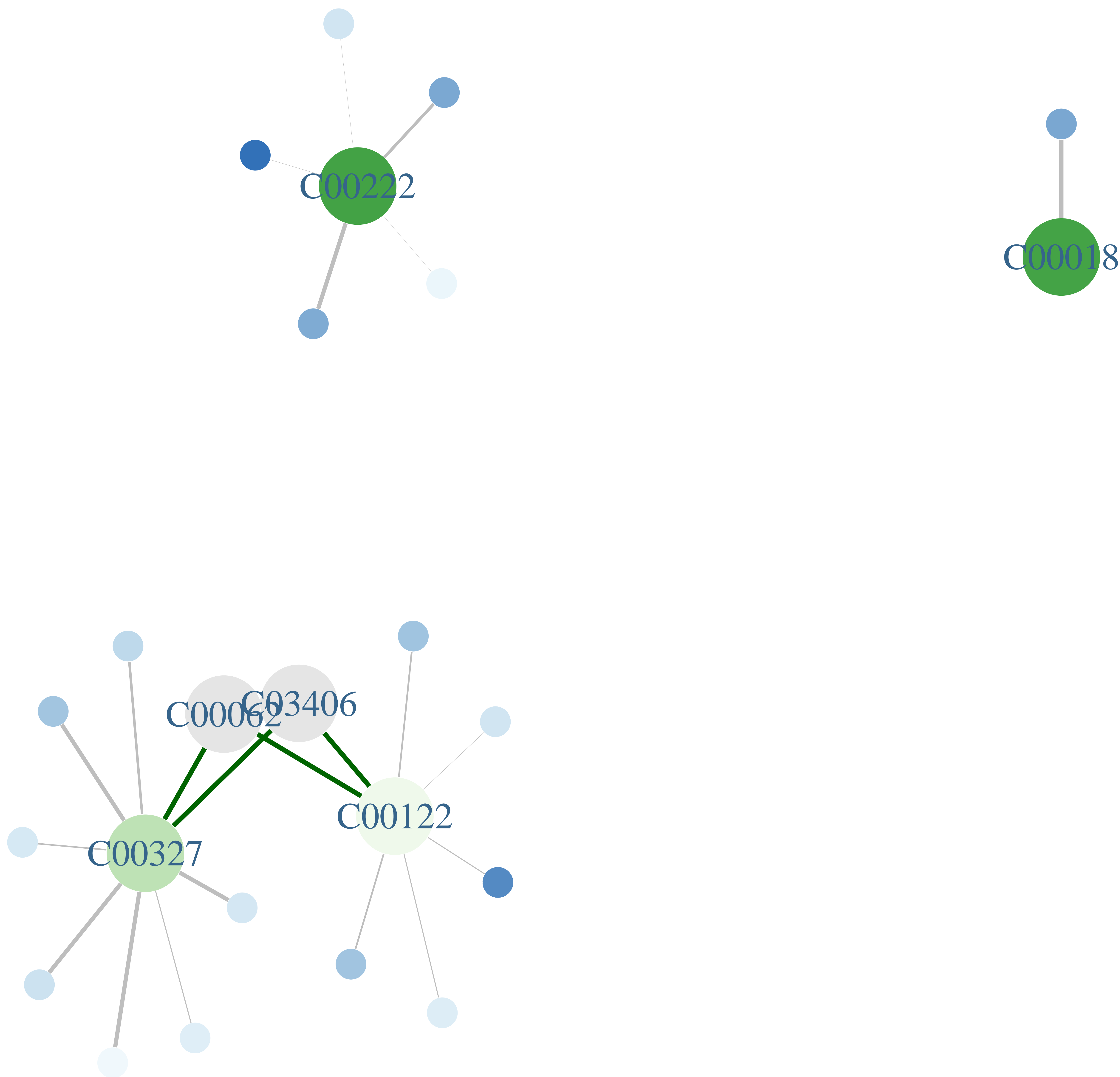
vitamin b3 (nicotinate and nicotinamide) metabolism ; p-value: 0.032



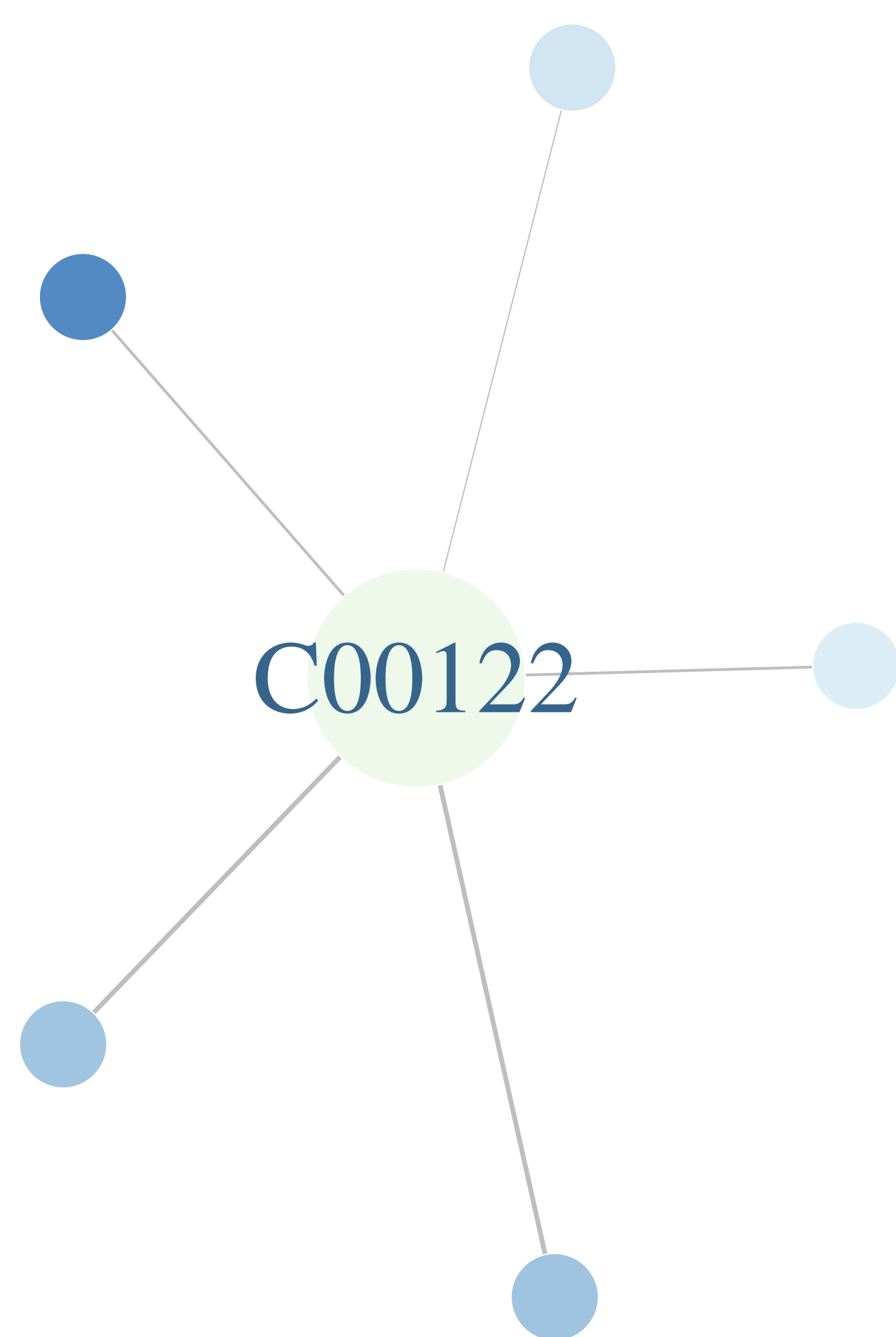
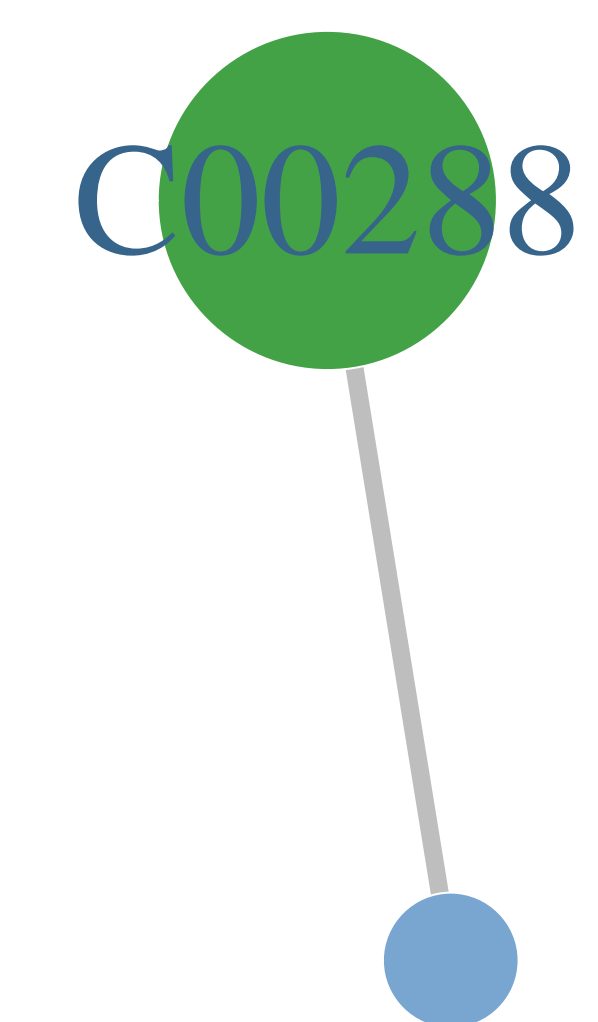
vitamin b6 metabolism ; p-value: 0.197



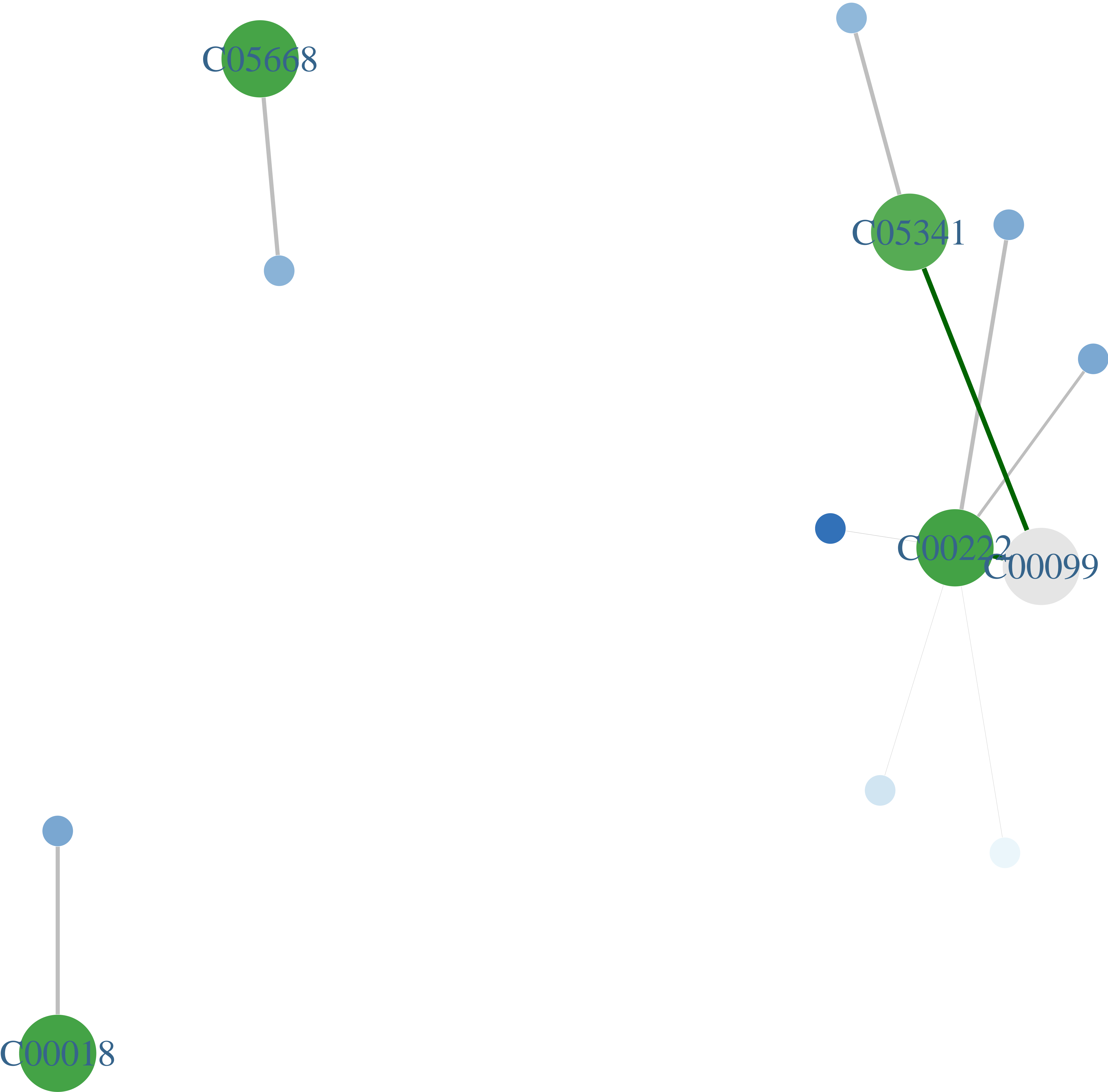
aspartate metabolism ; p-value: 0.051



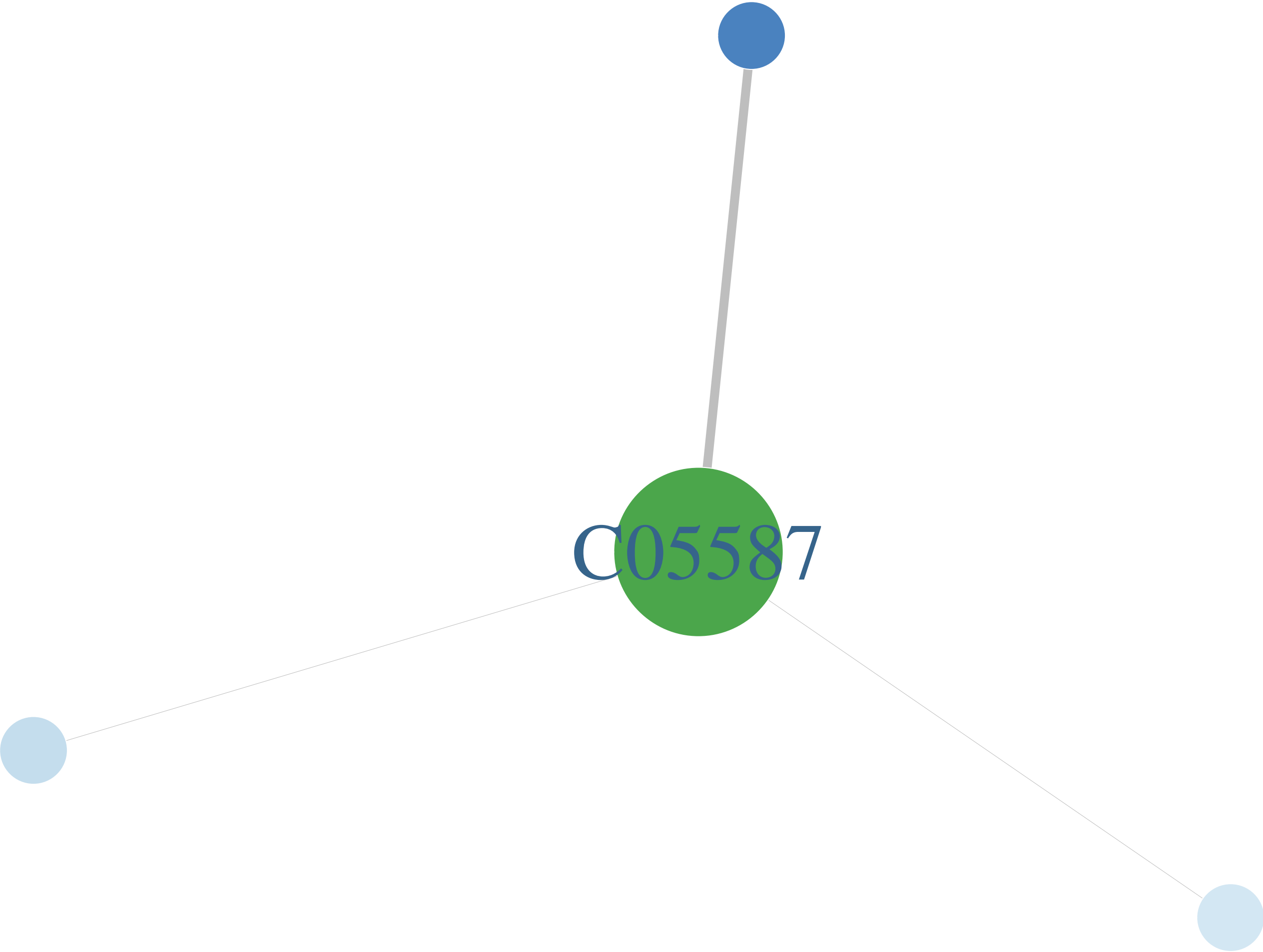
warburg effect ; p-value: 0.68



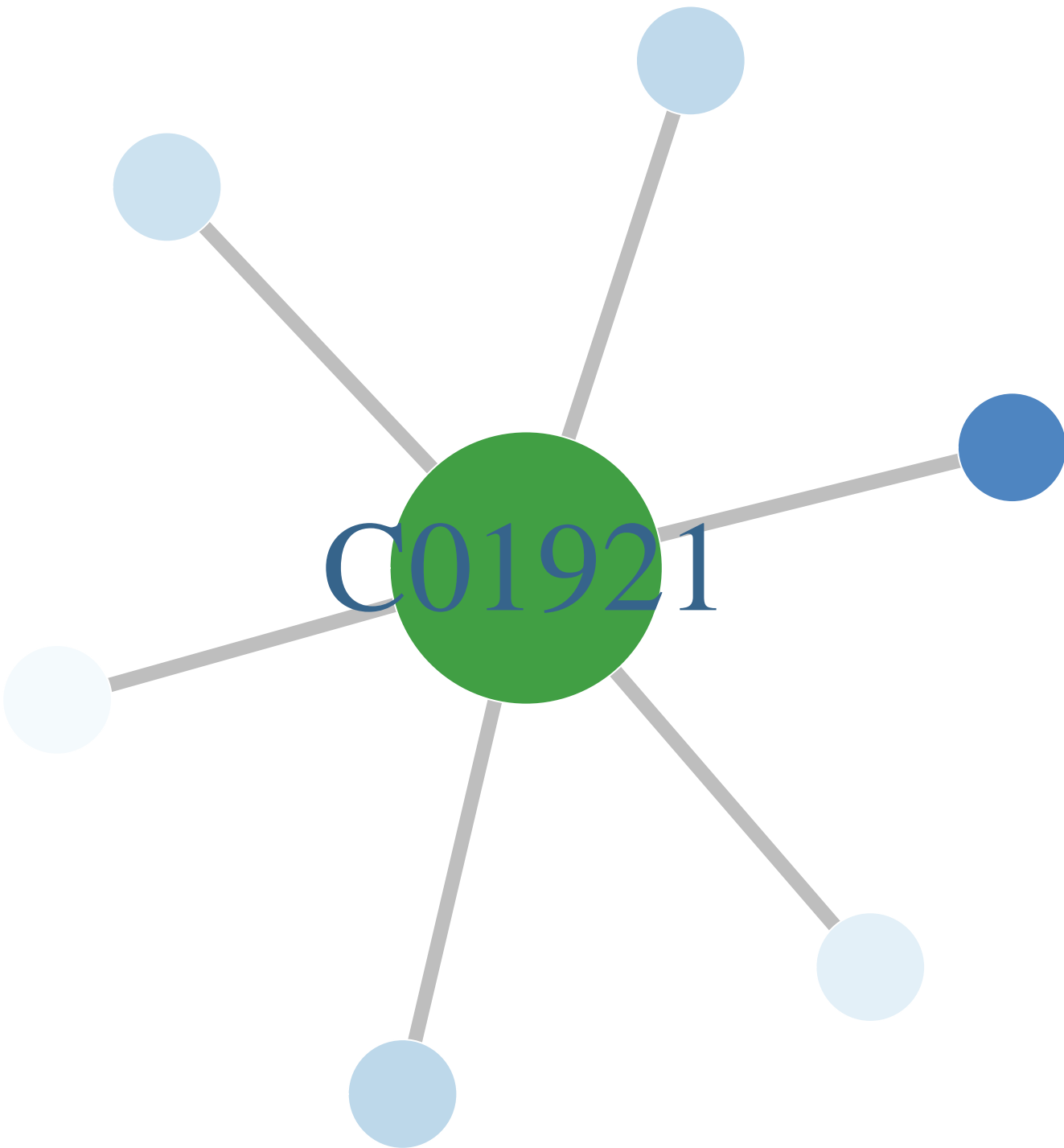
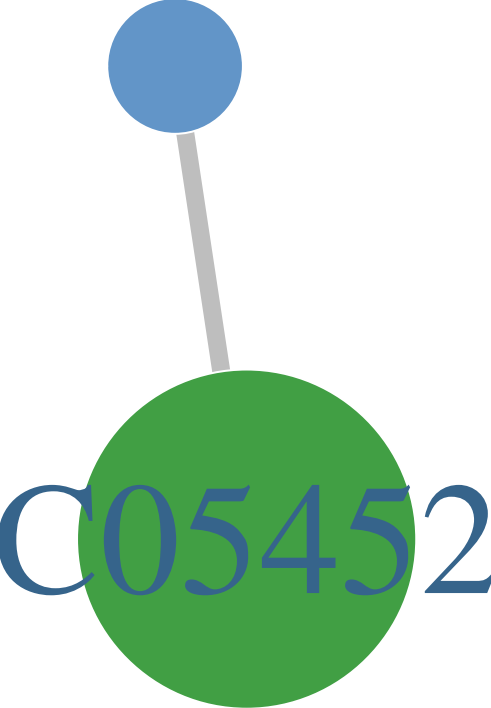
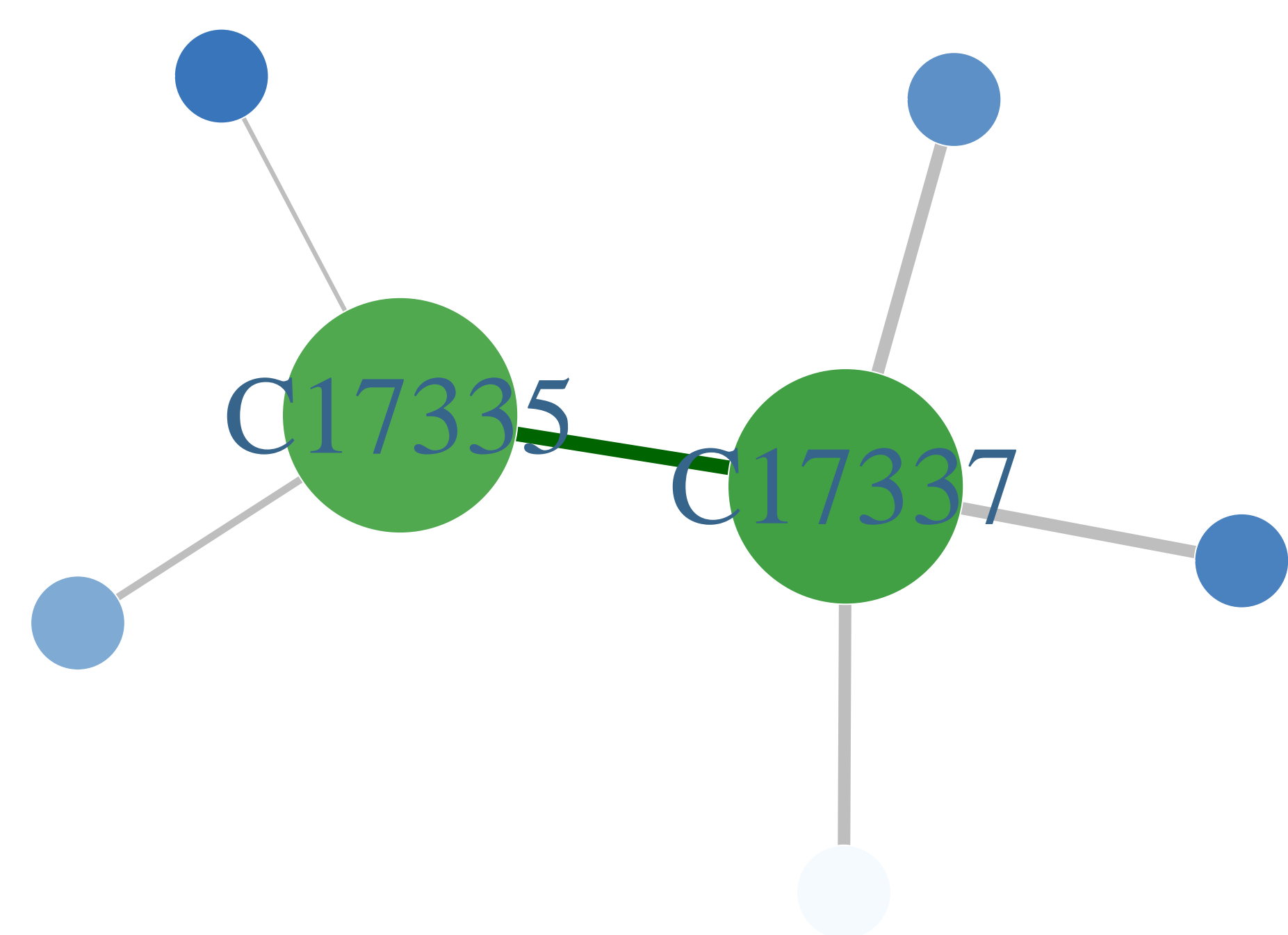
beta-alanine metabolism ; p-value: 0.248



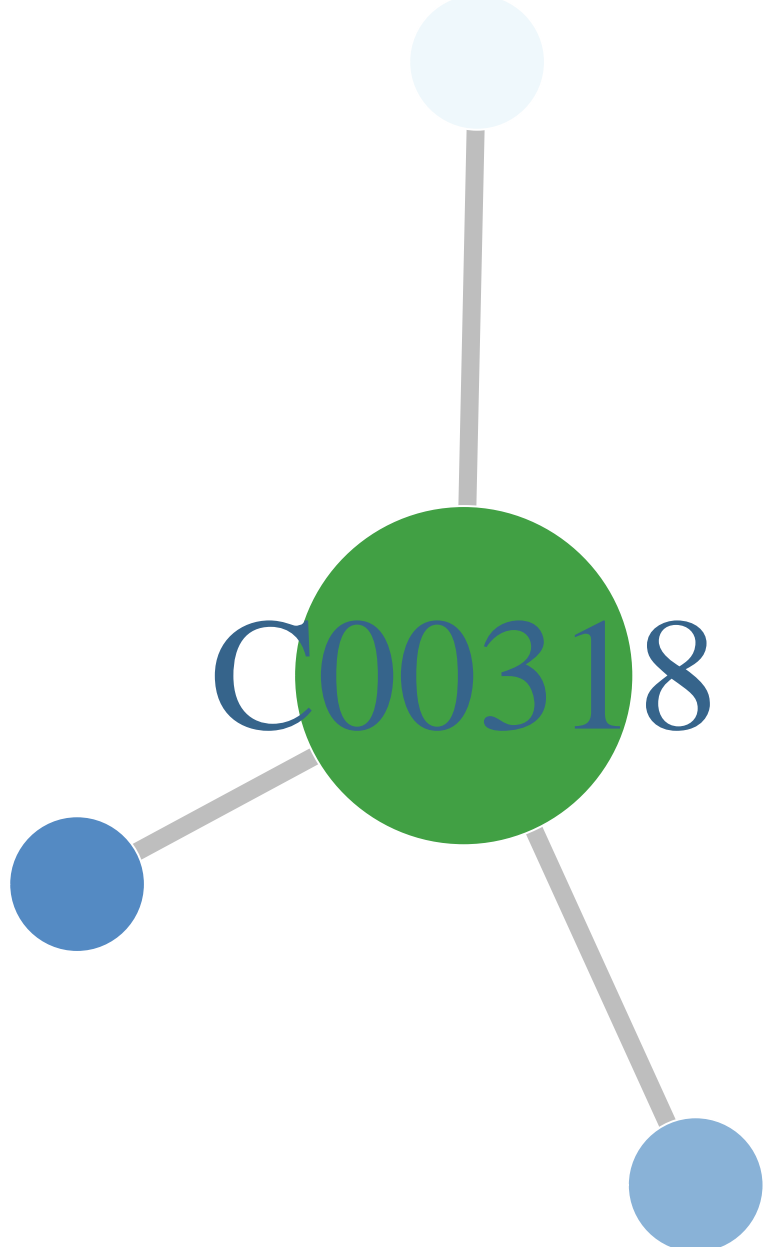
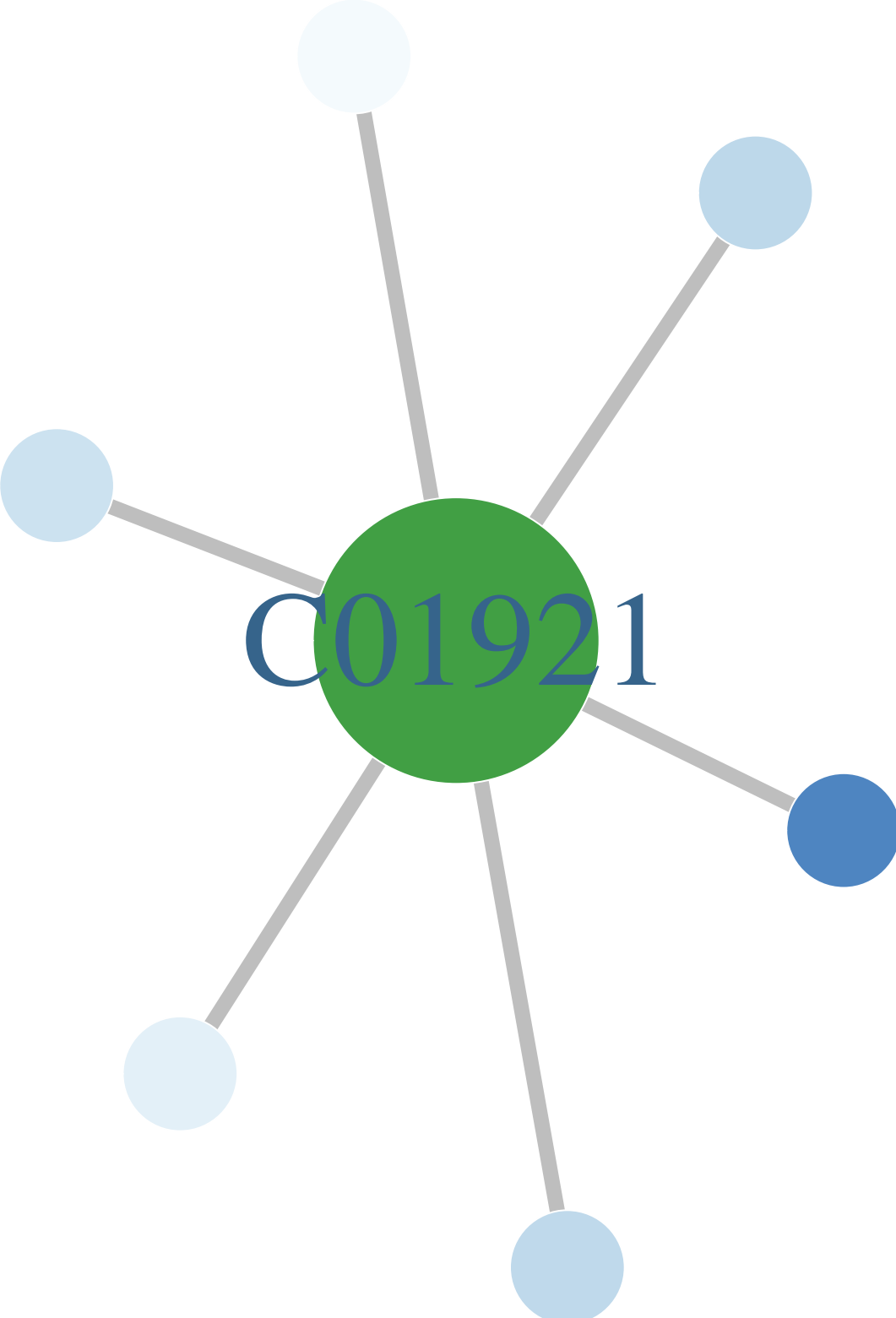
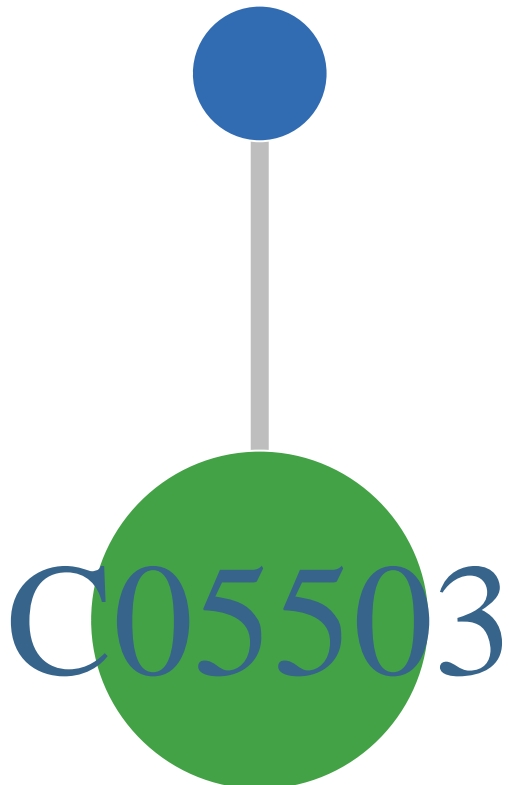
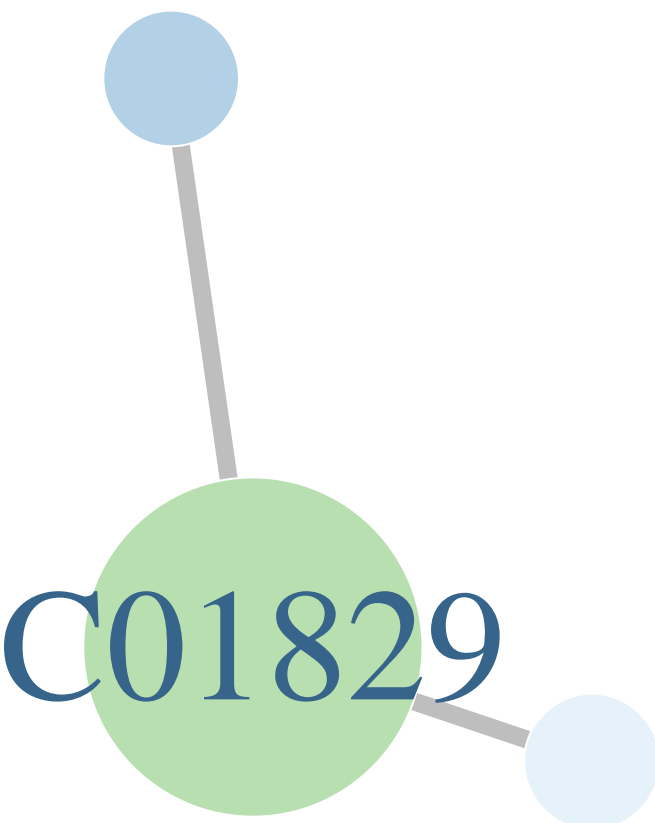
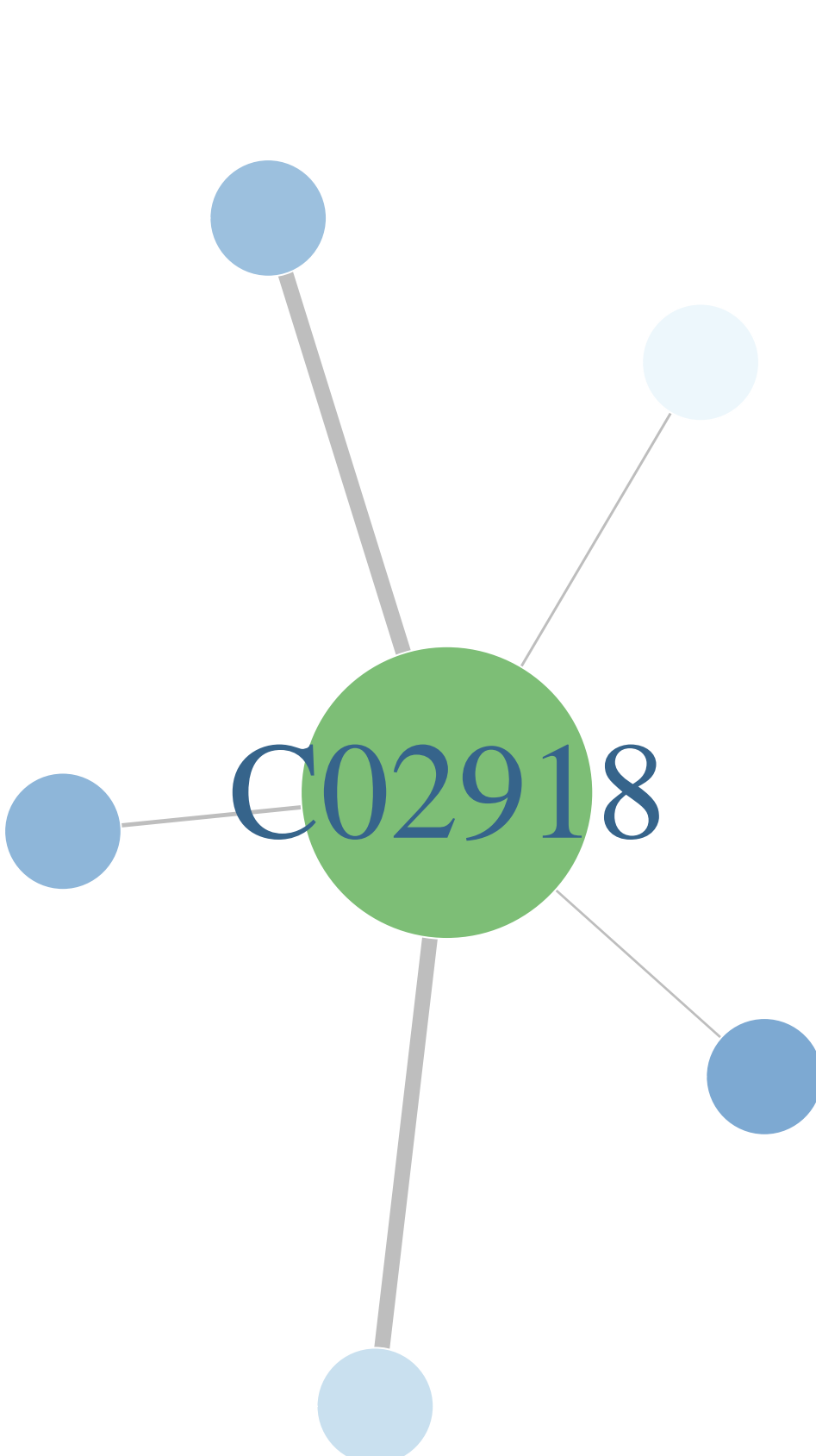
betalain biosynthesis ; p-value: 0.044



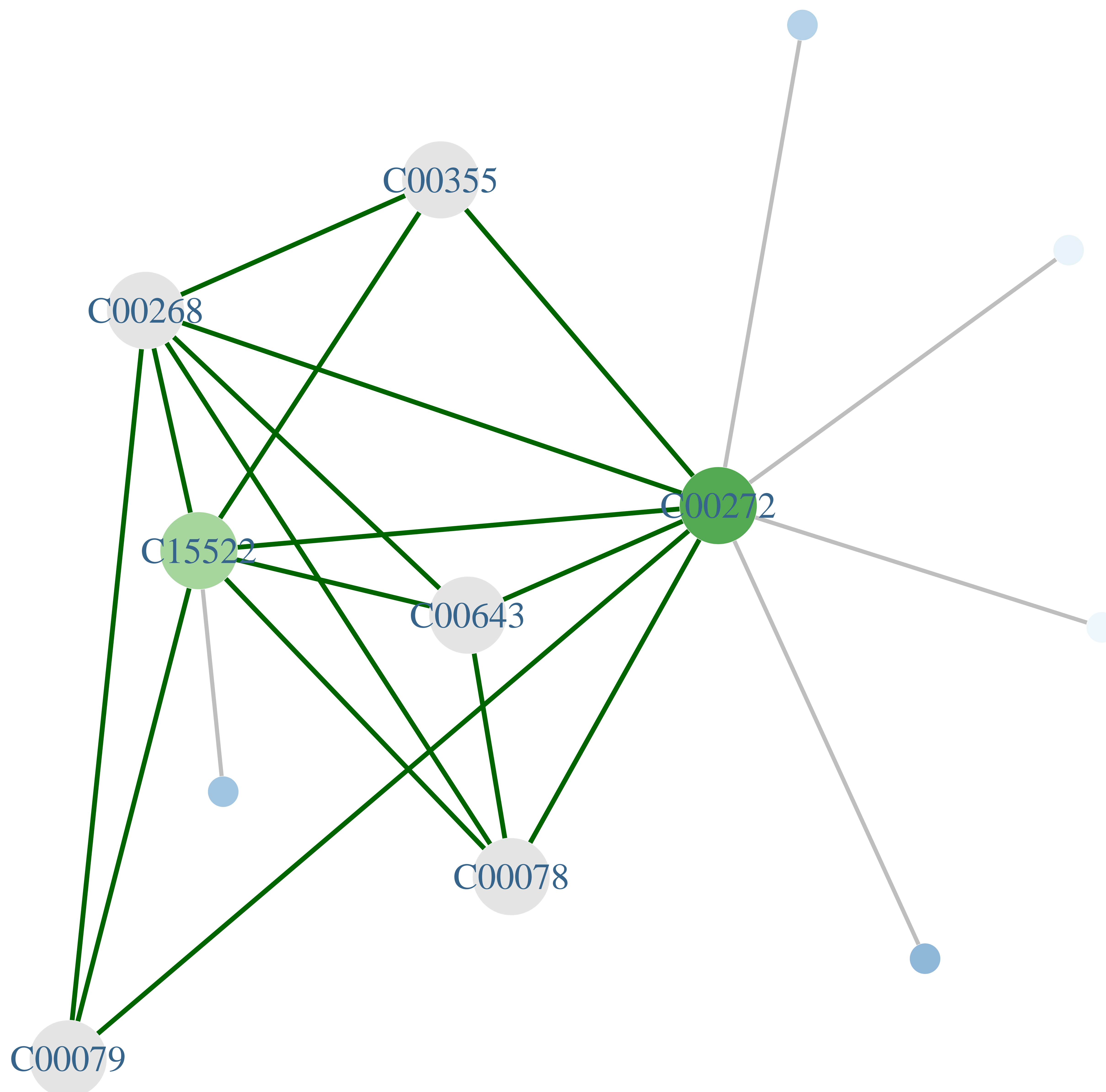
bile acid biosynthesis ; p-value: 0.561



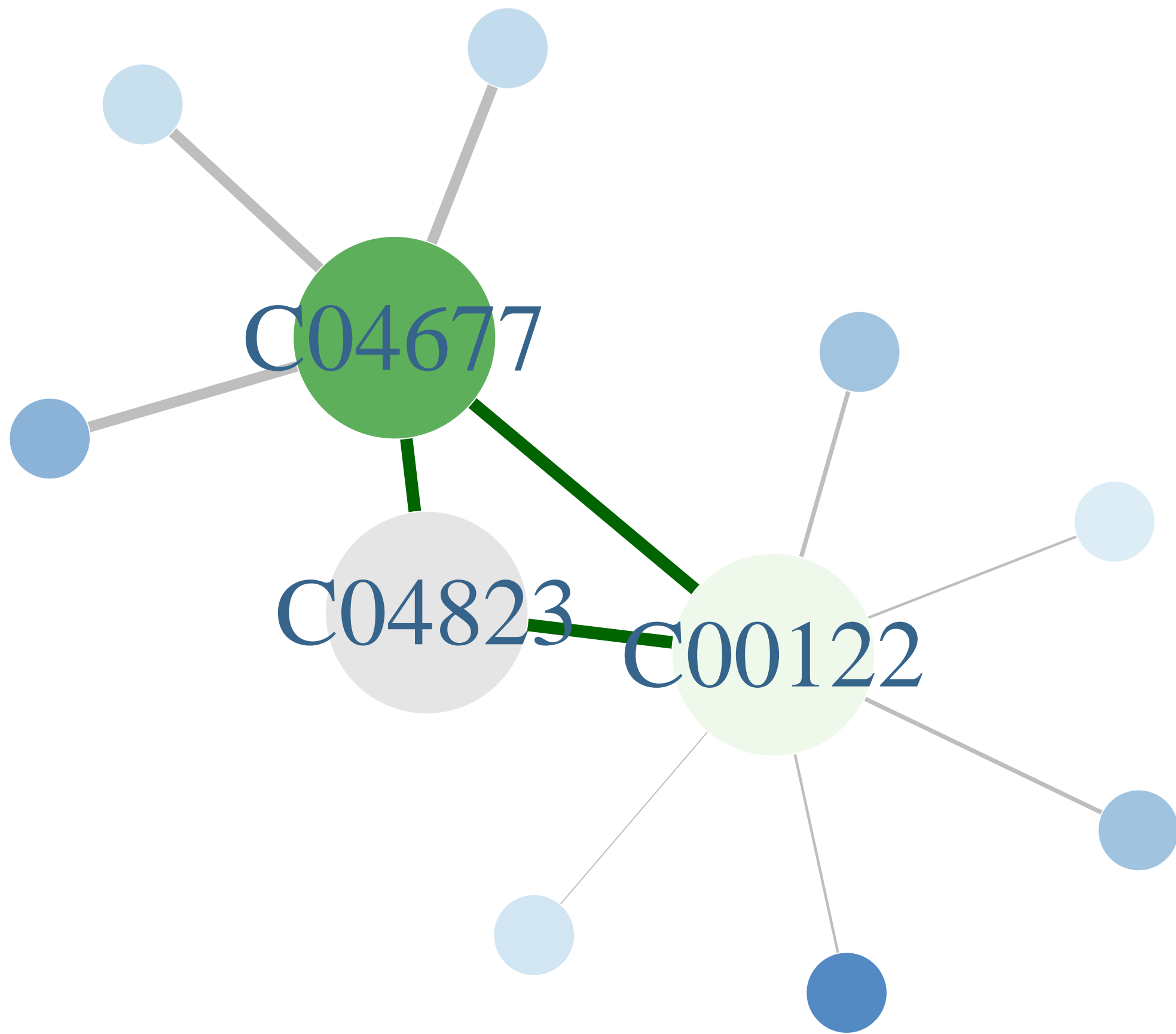
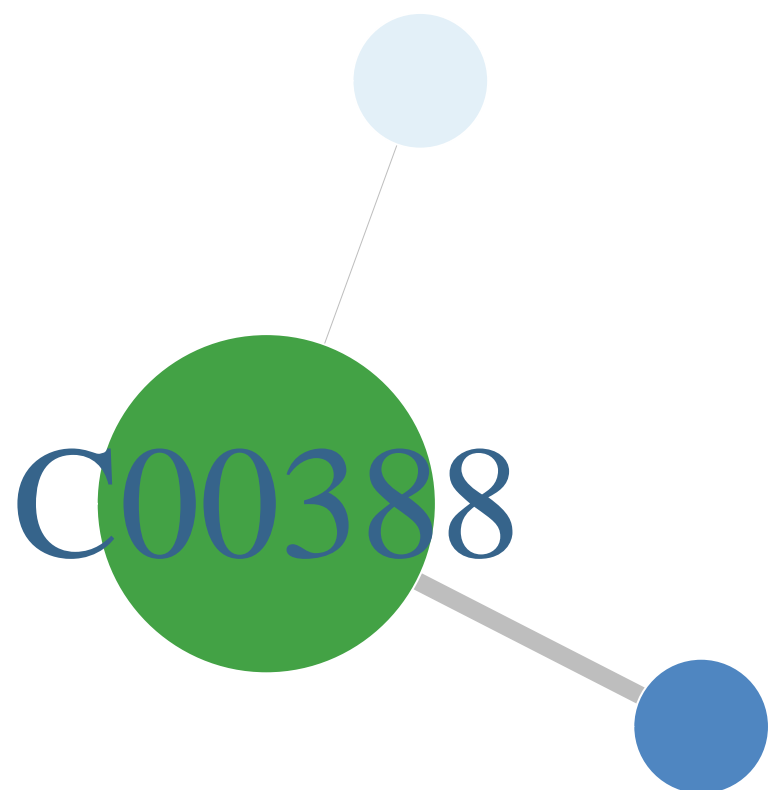
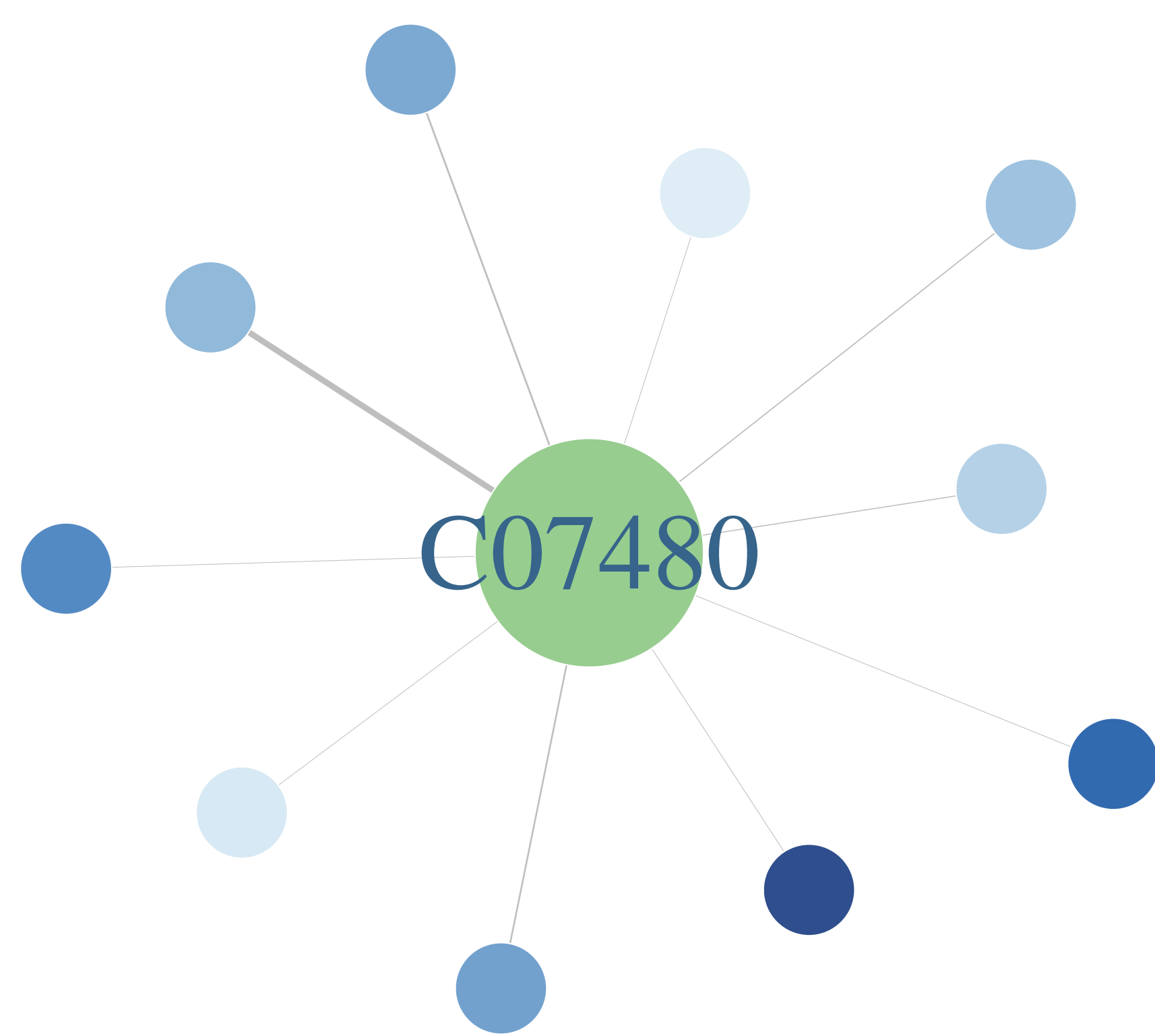
bile secretion ; p-value: 0.146



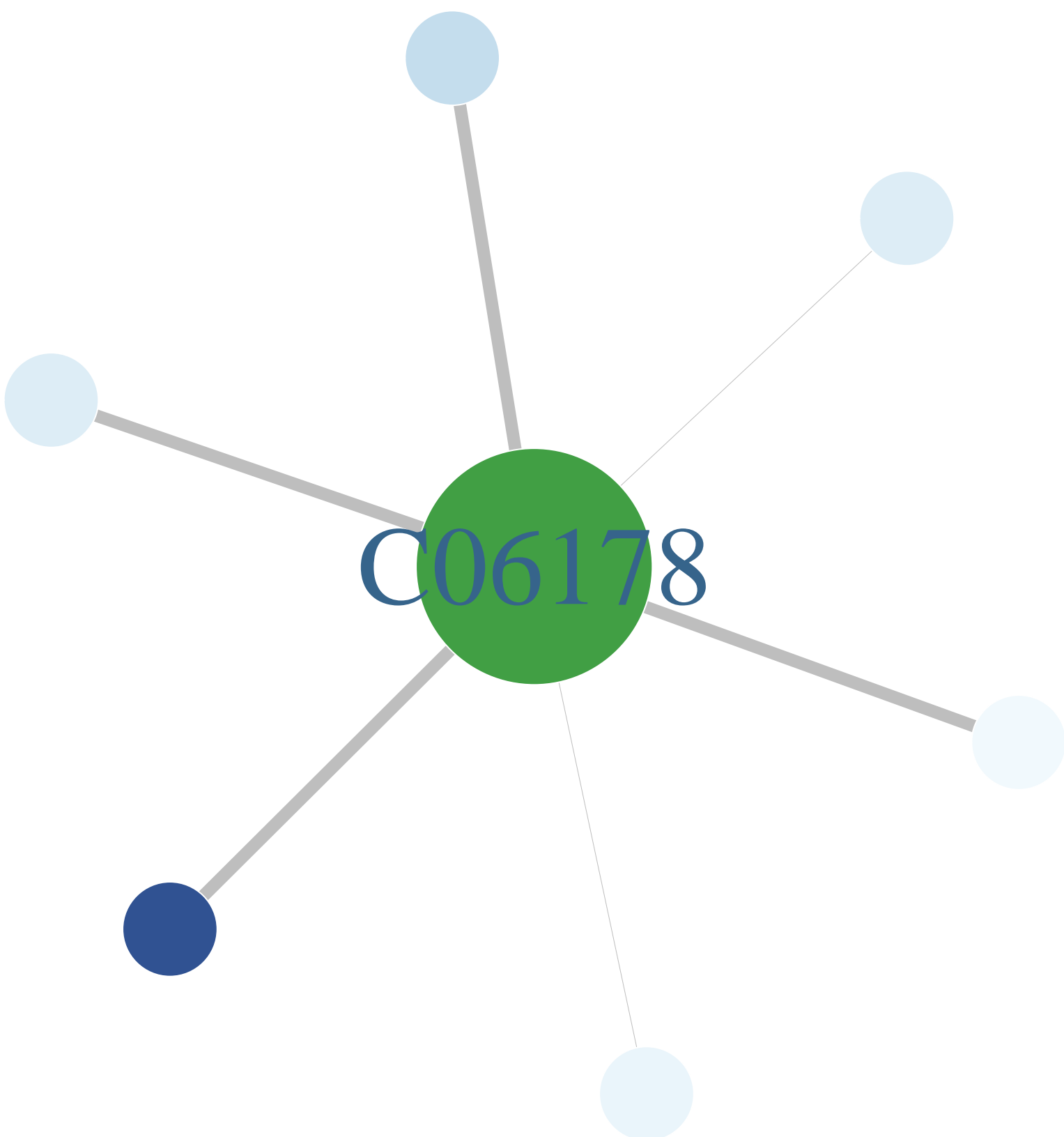
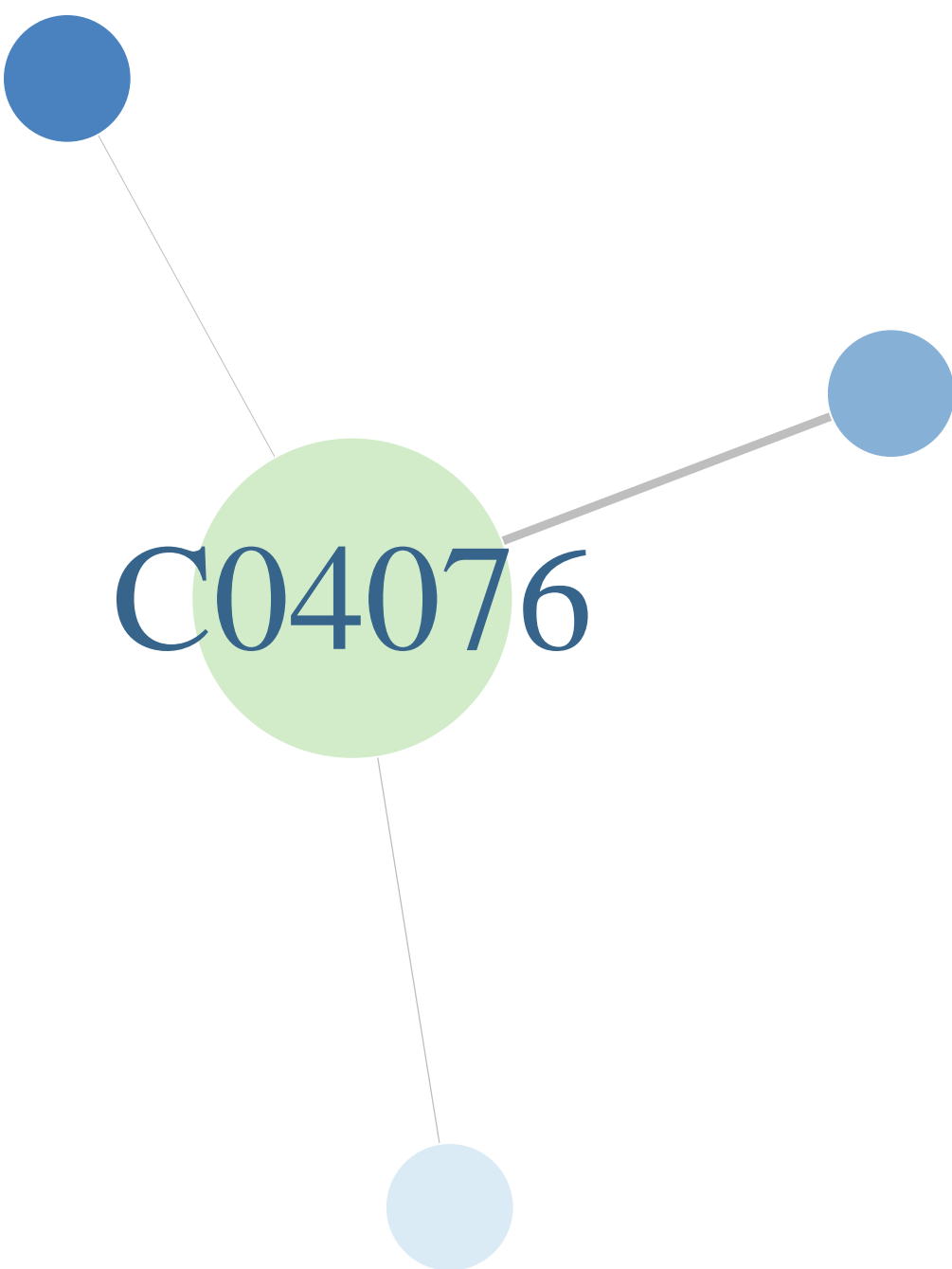
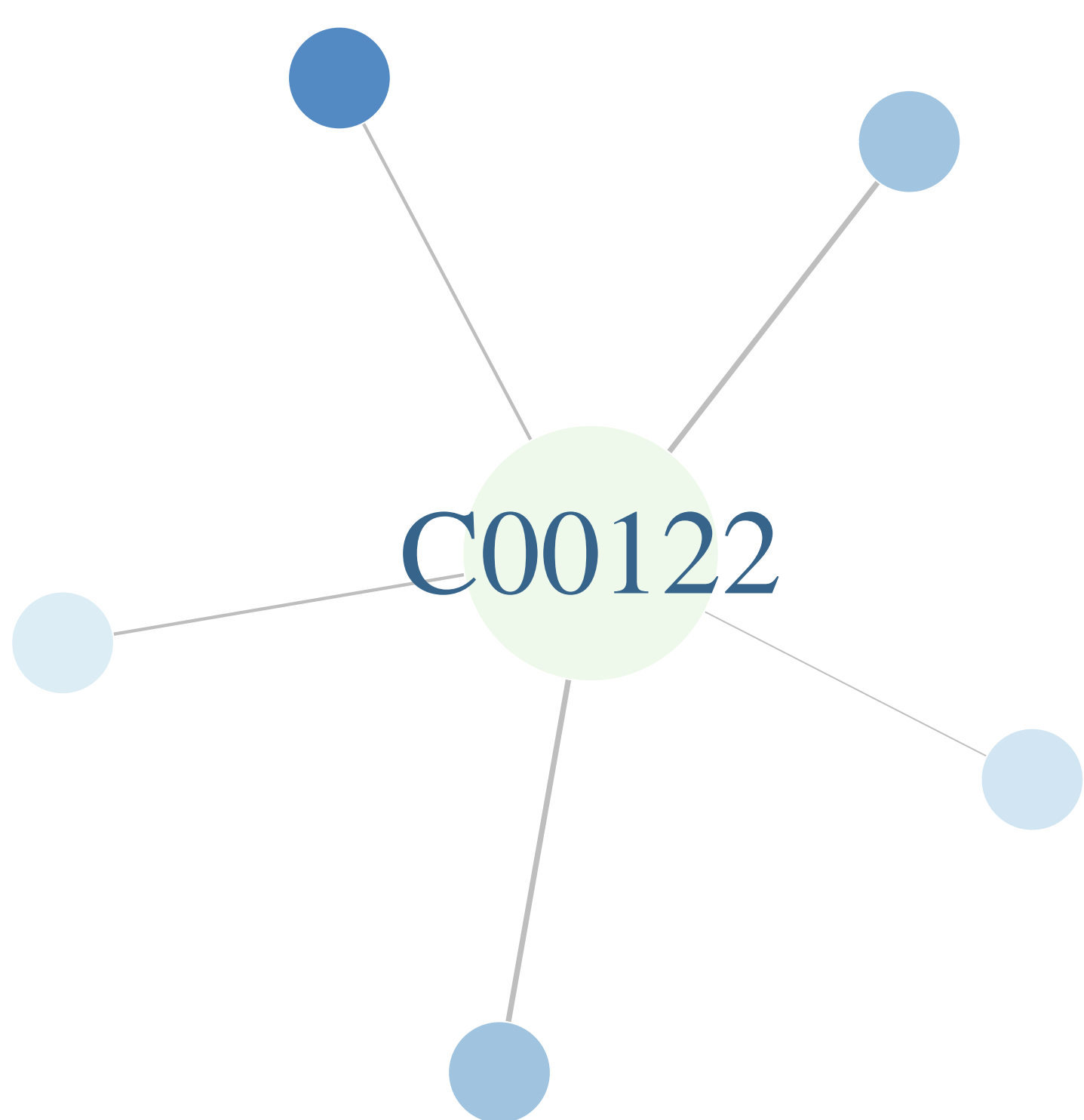
biopterin metabolism ; p-value: 0.3



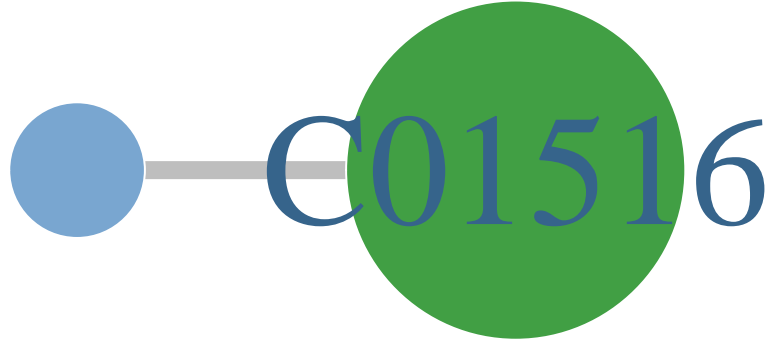
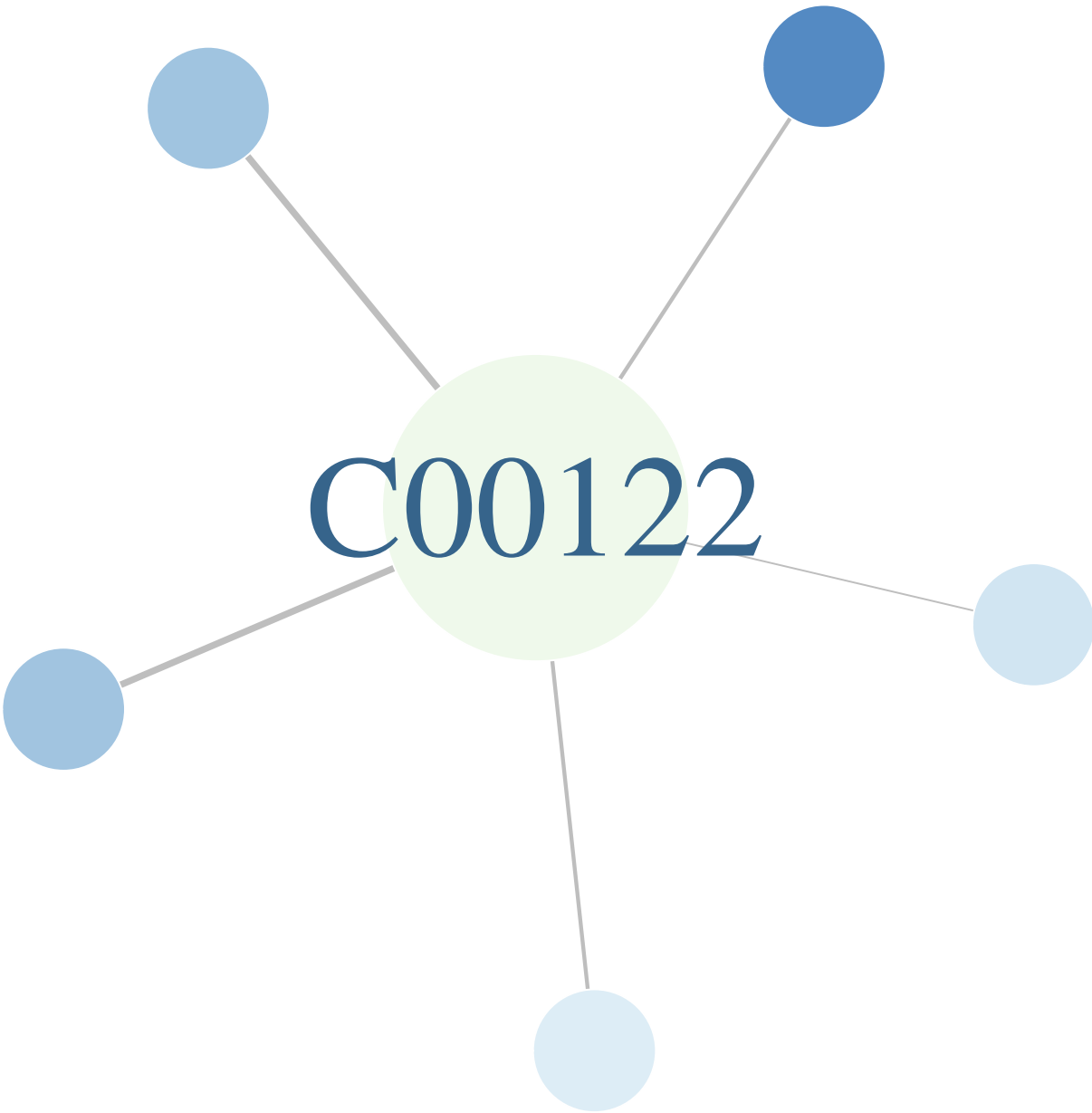
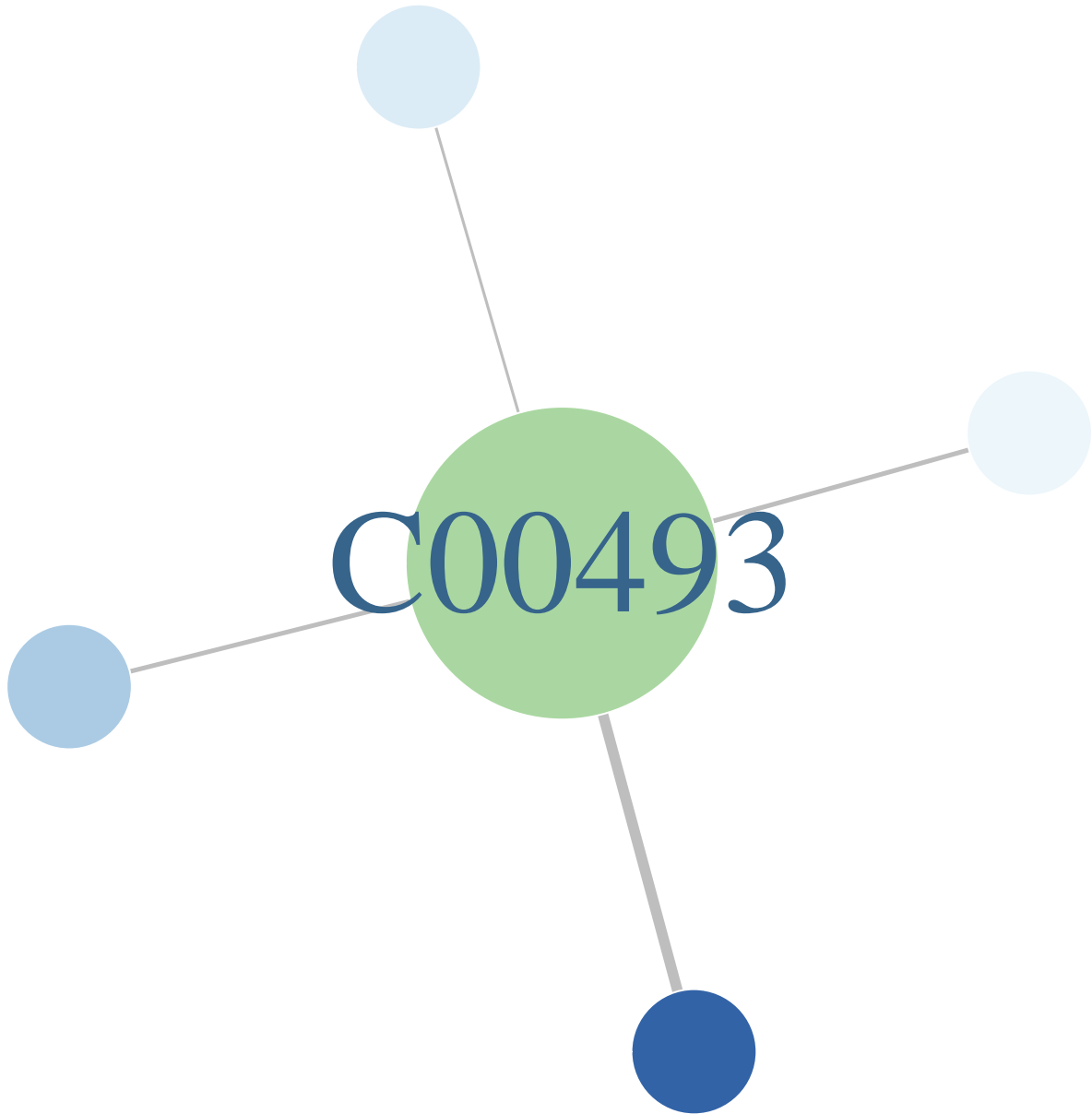
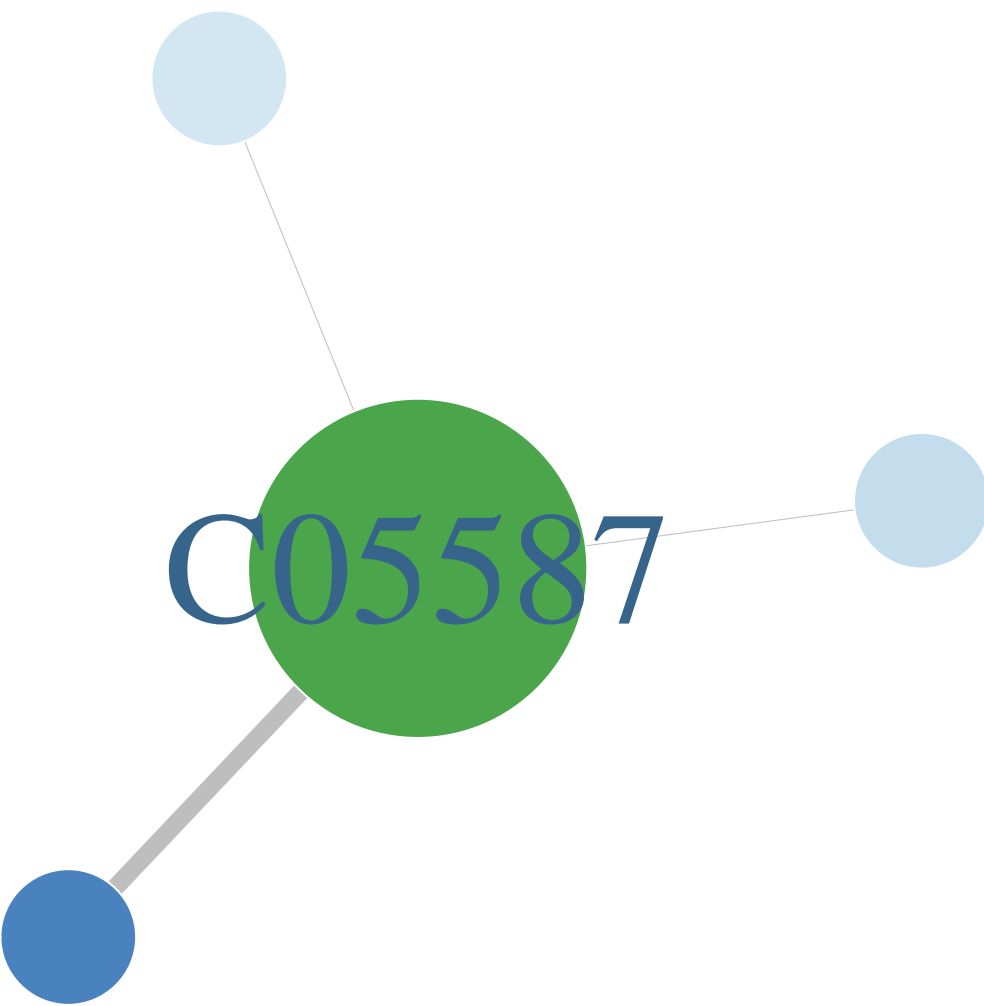
biosynthesis of alkaloids derived from histidine and purine ; p-value: 0.044



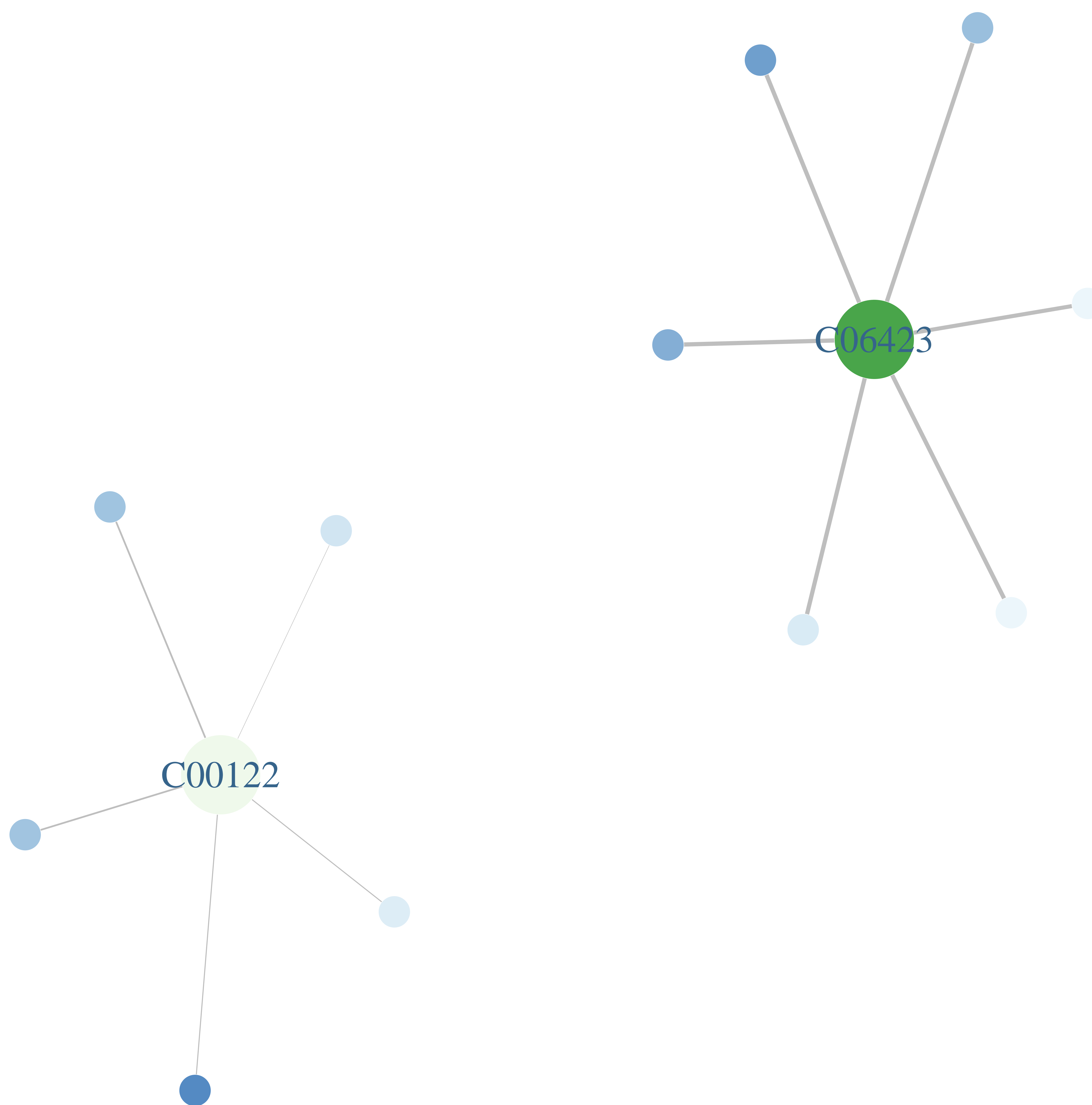
biosynthesis of alkaloids derived from ornithine, lysine and nicotinic acid ; p-value: 0.351



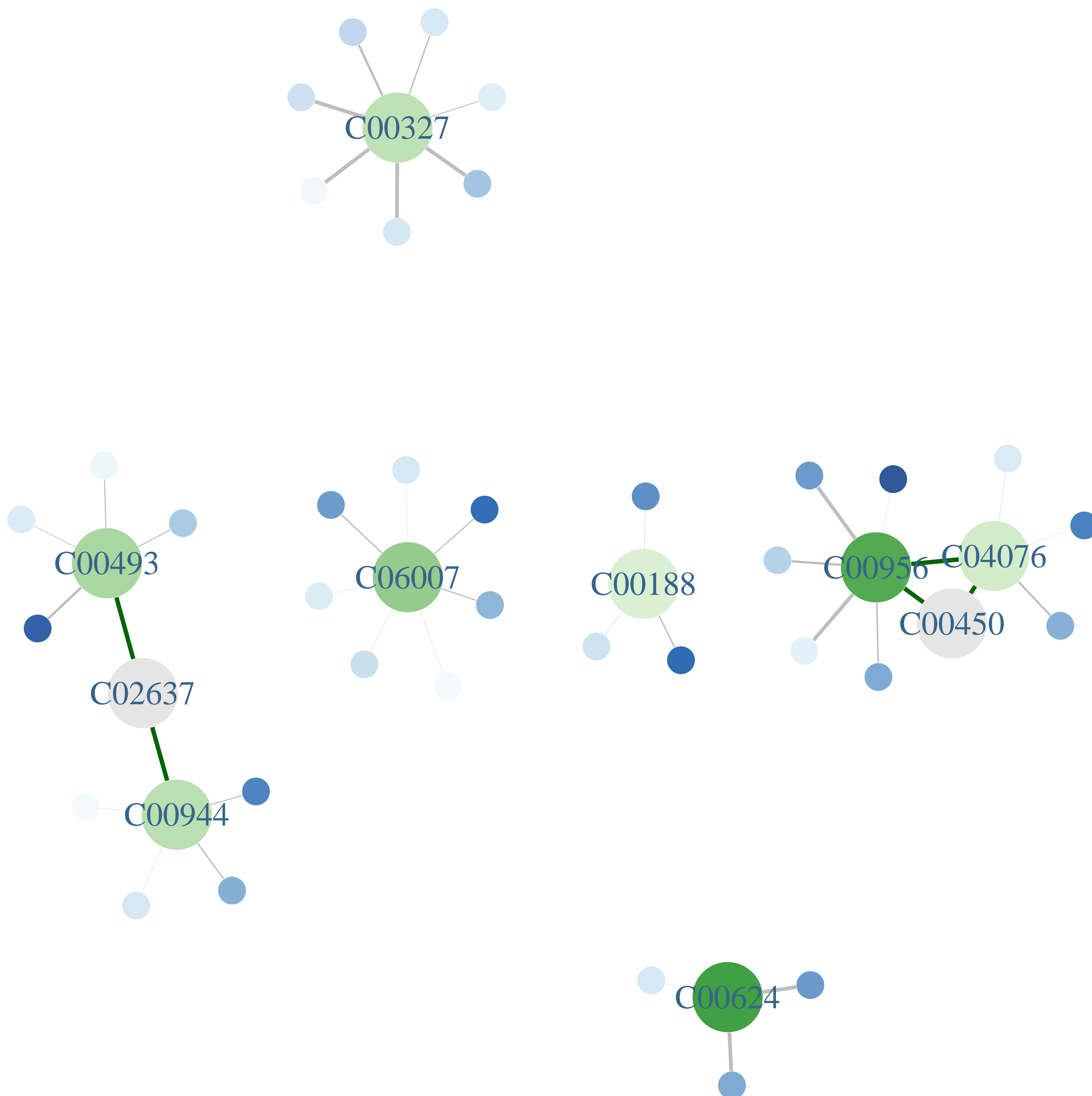
biosynthesis of alkaloids derived from shikimate pathway ; p-value: 0.354



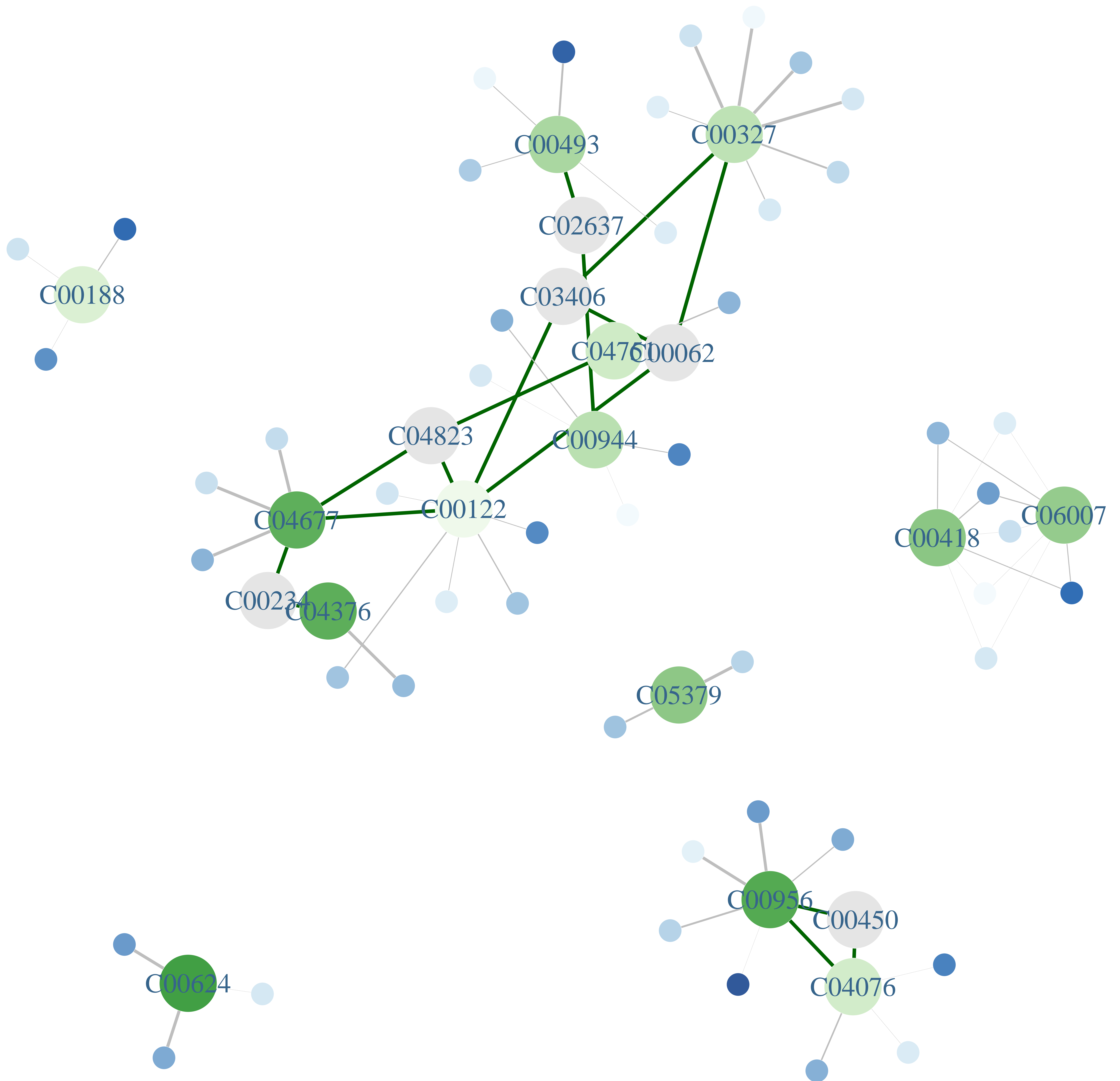
biosynthesis of alkaloids derived from terpenoid and polyketide ; p-value: 0.436



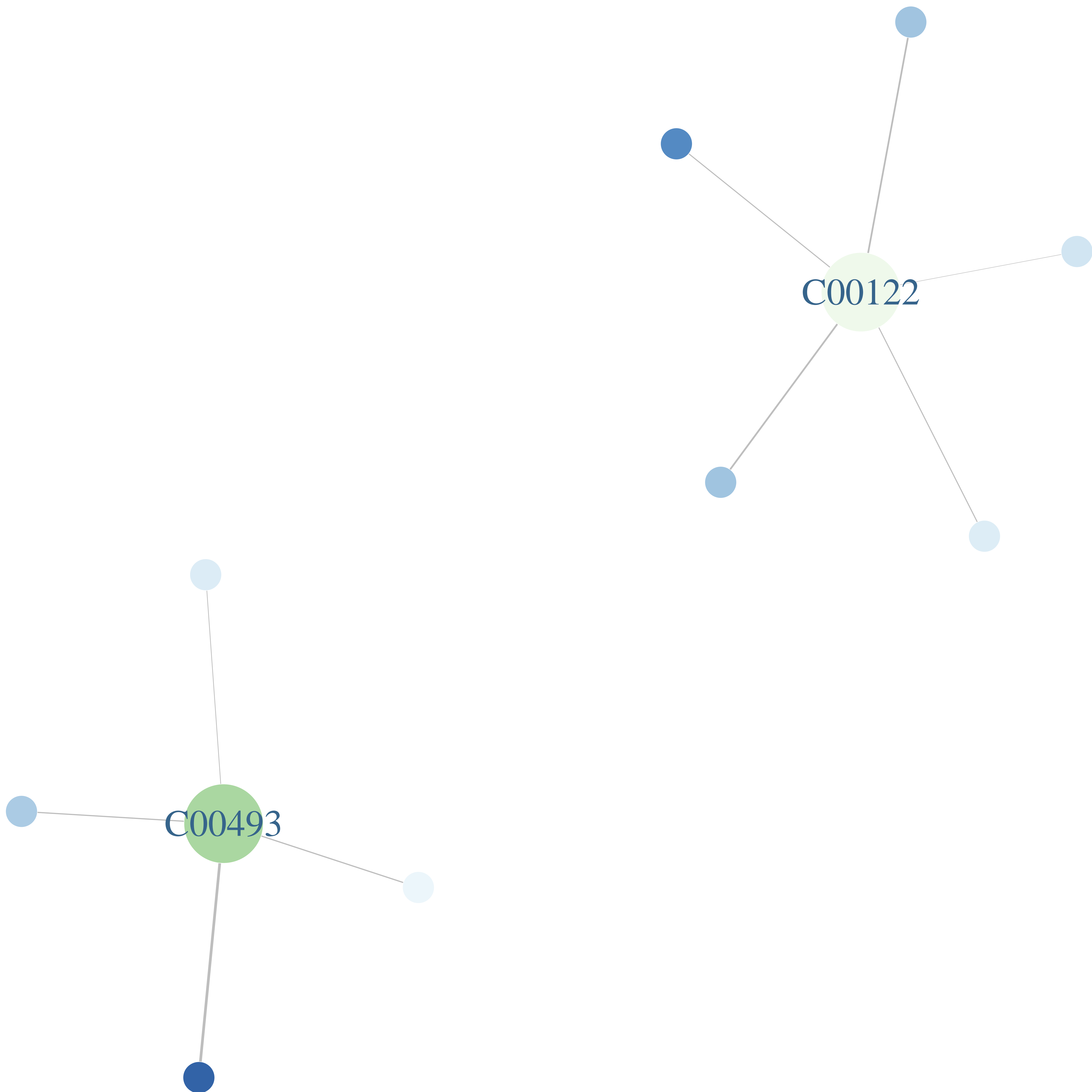
biosynthesis of amino acids ; p-value: 0.263



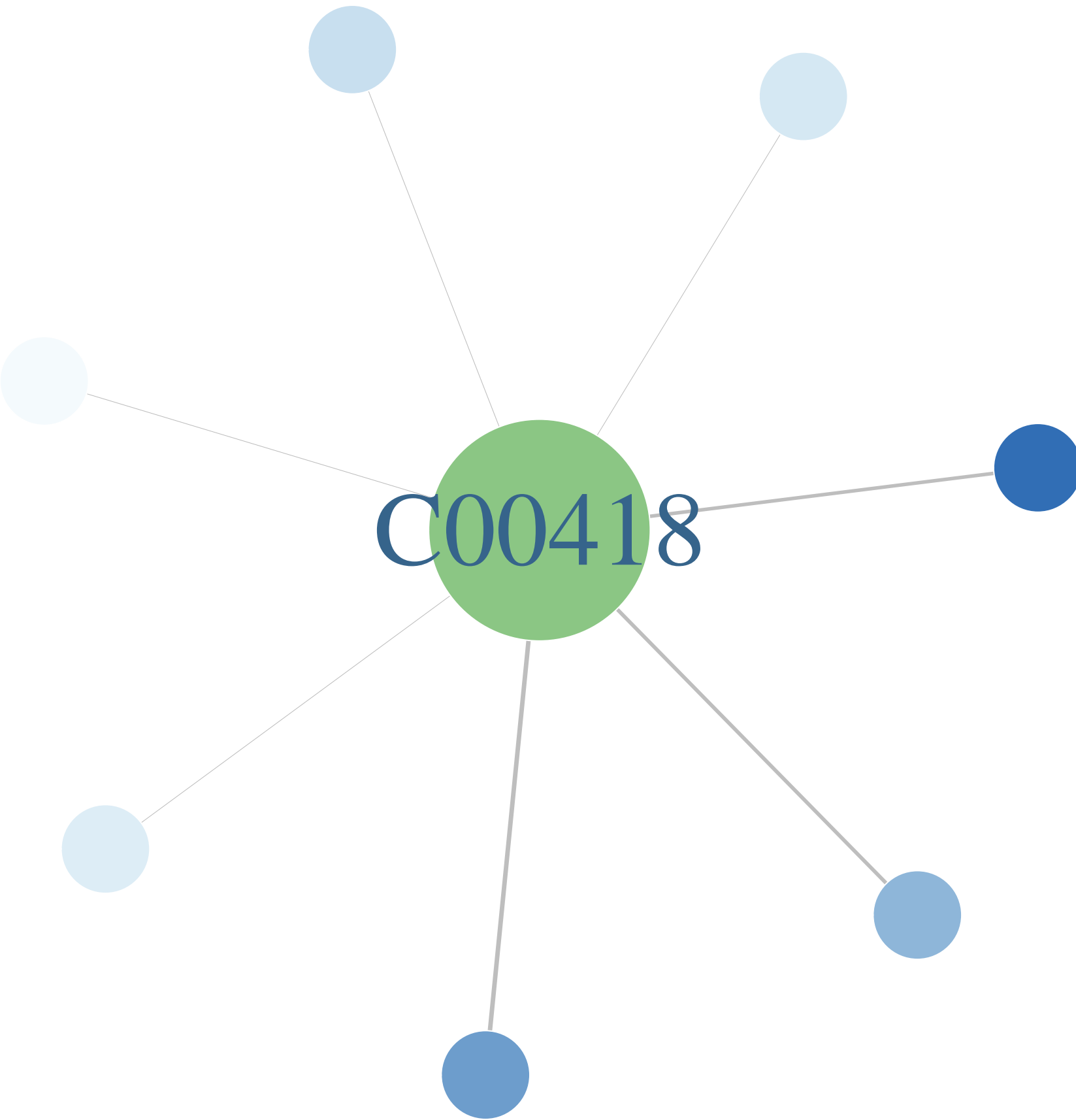
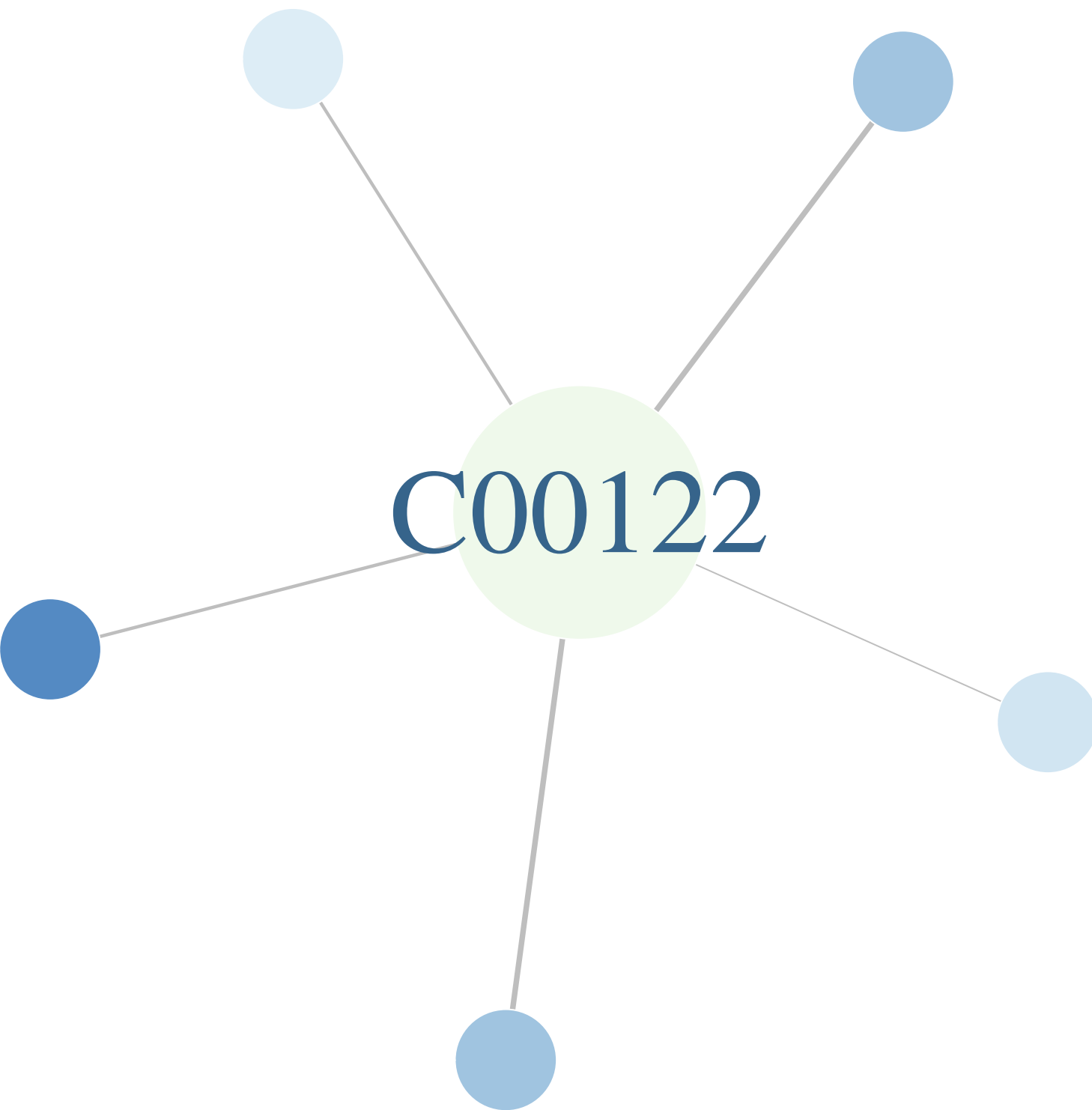
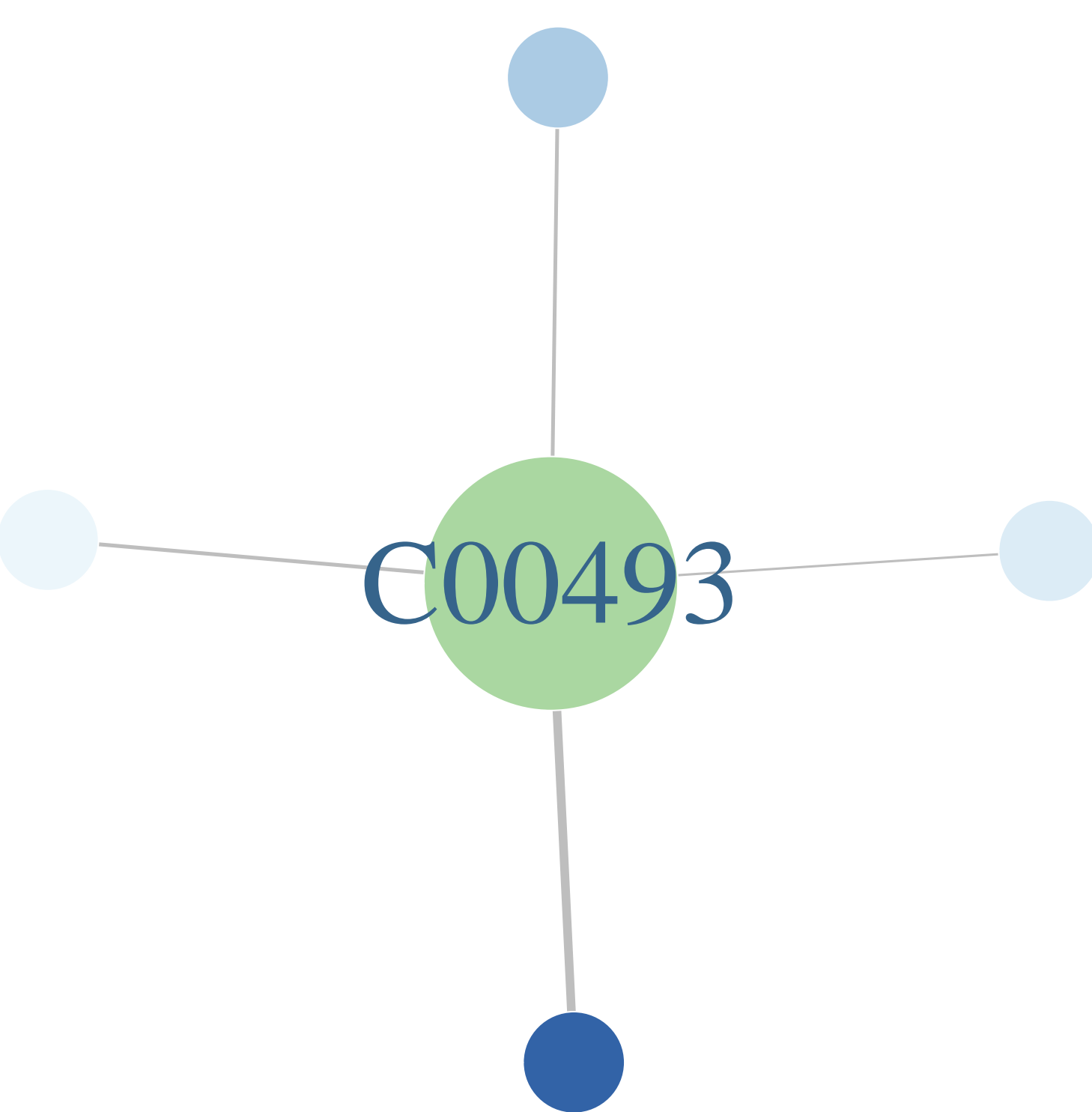
biosynthesis of antibiotics ; p-value: 0.283



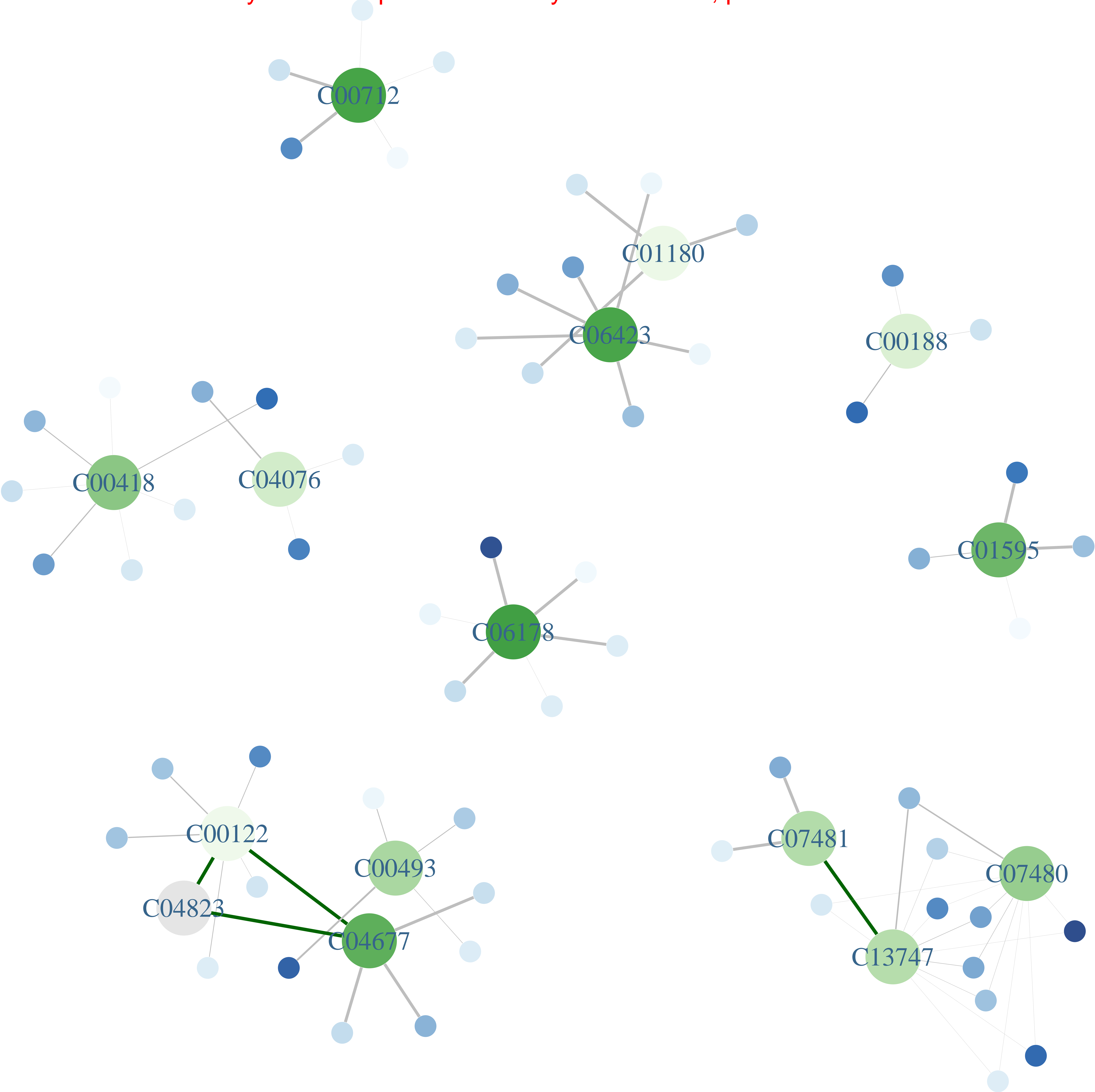
biosynthesis of phenylpropanoids ; p-value: 0.701



biosynthesis of plant hormones ; p-value: 0.525

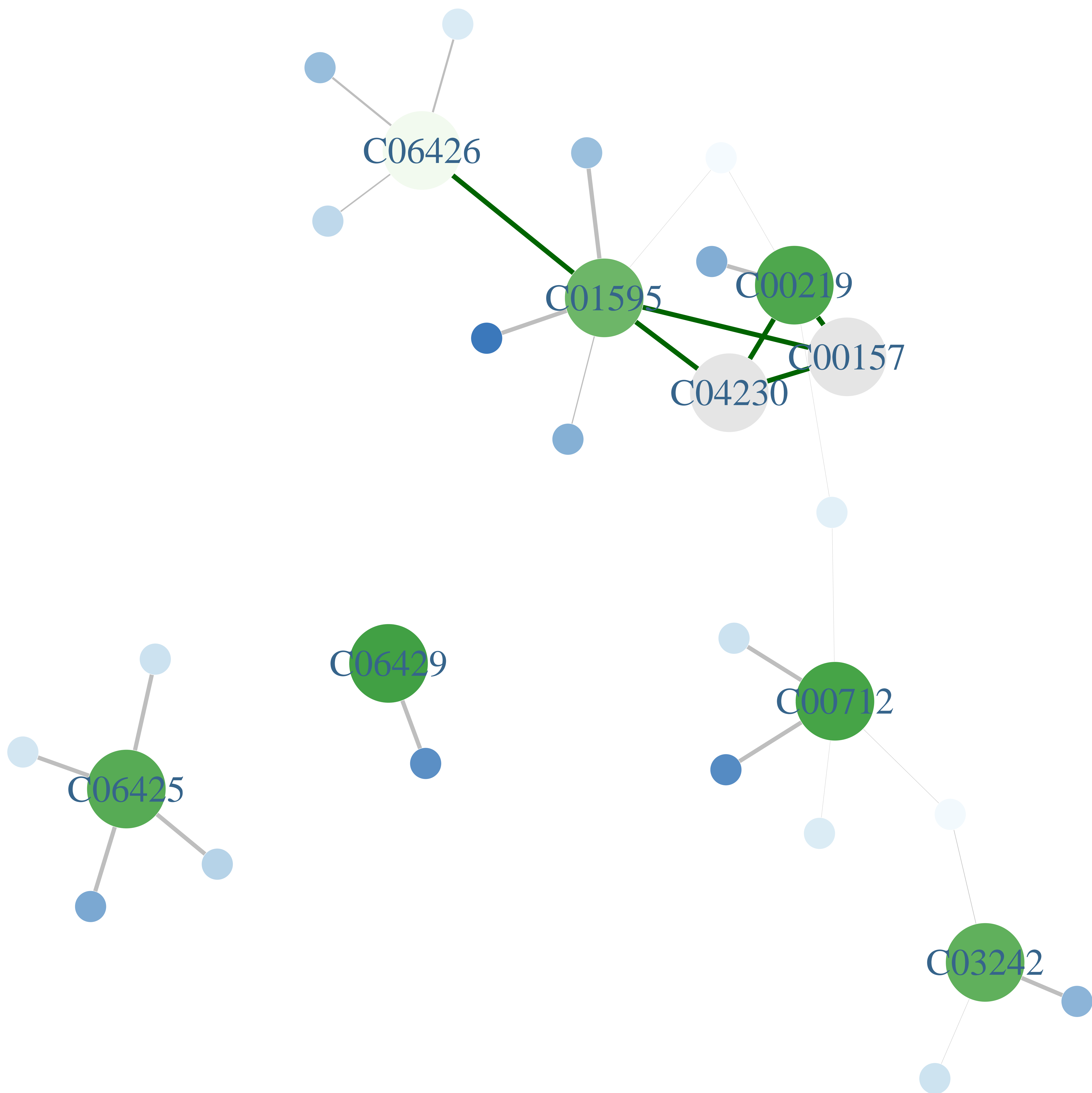


biosynthesis of plant secondary metabolites ; p-value: 0.006

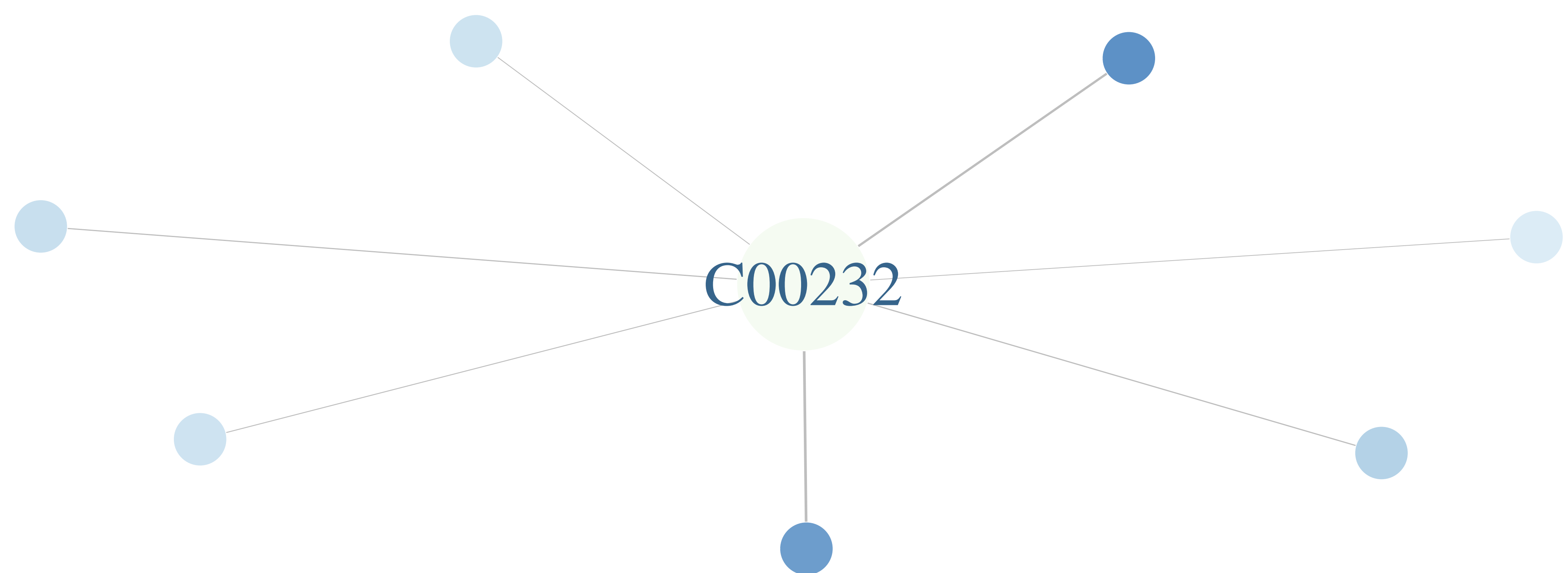
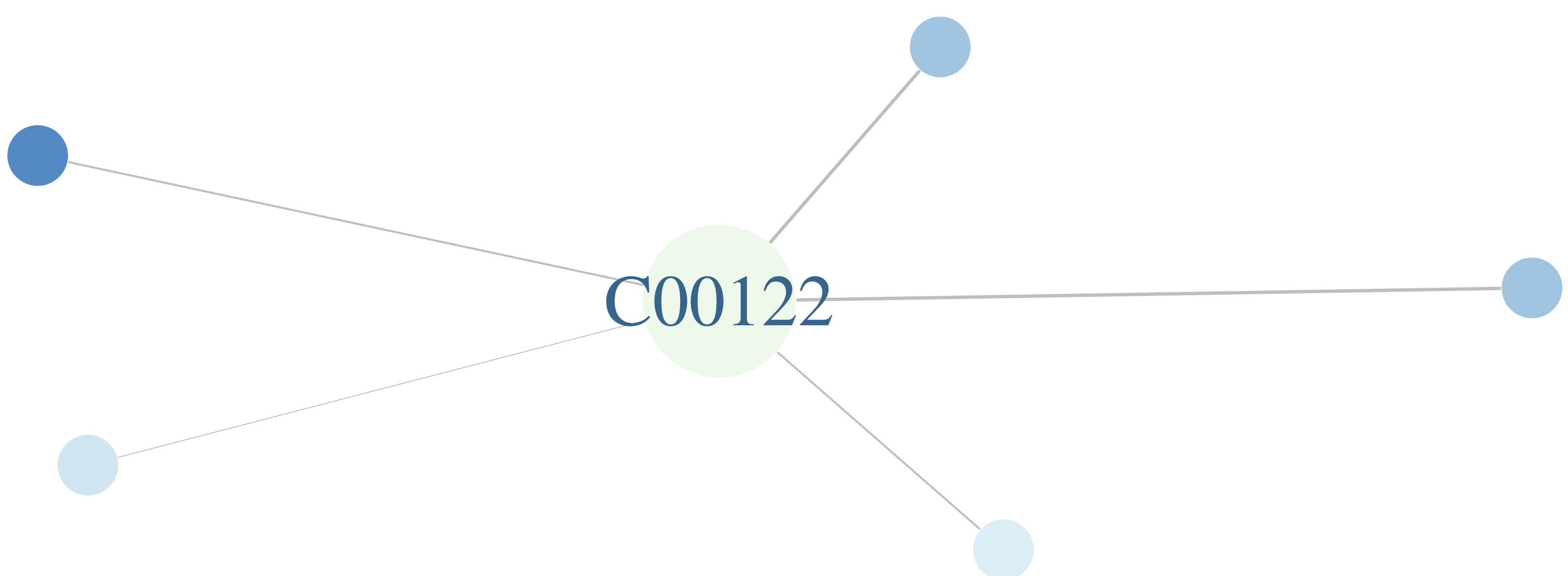


biosynthesis of terpenoids and steroids ; p-value: 0.635

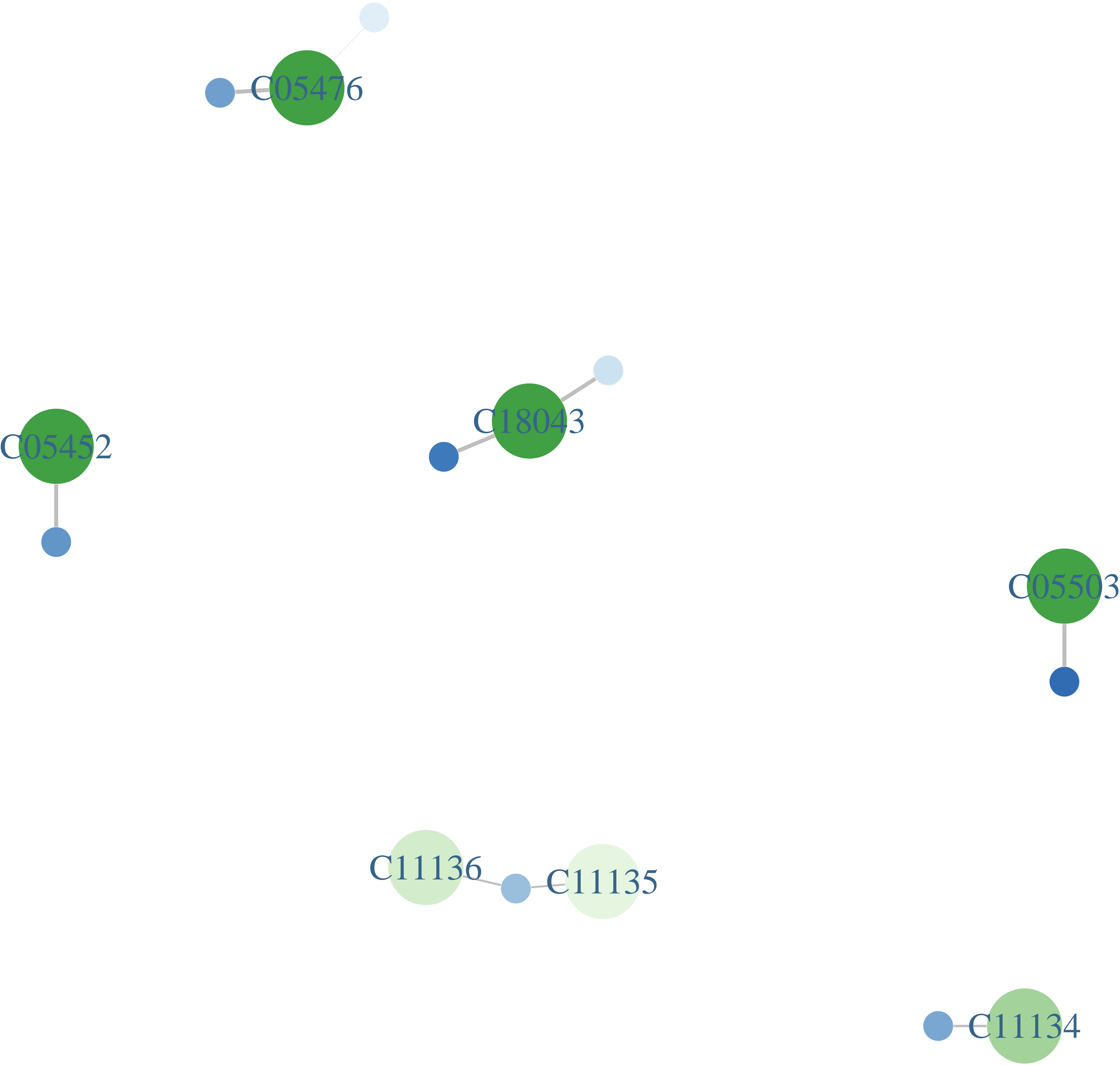
biosynthesis of unsaturated fatty acids ; p-value: 0.001



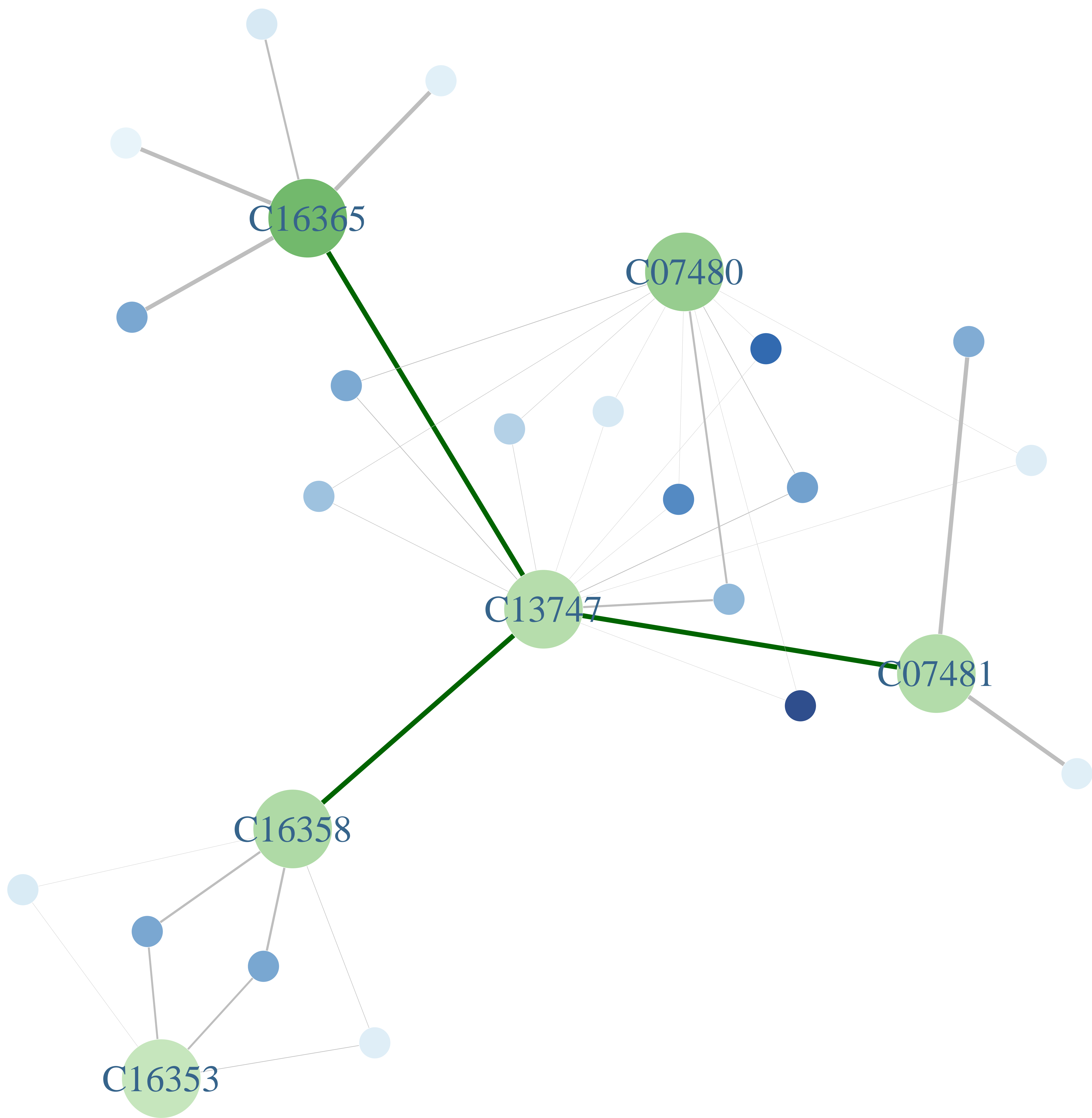
butanoate metabolism ; p-value: 0.499



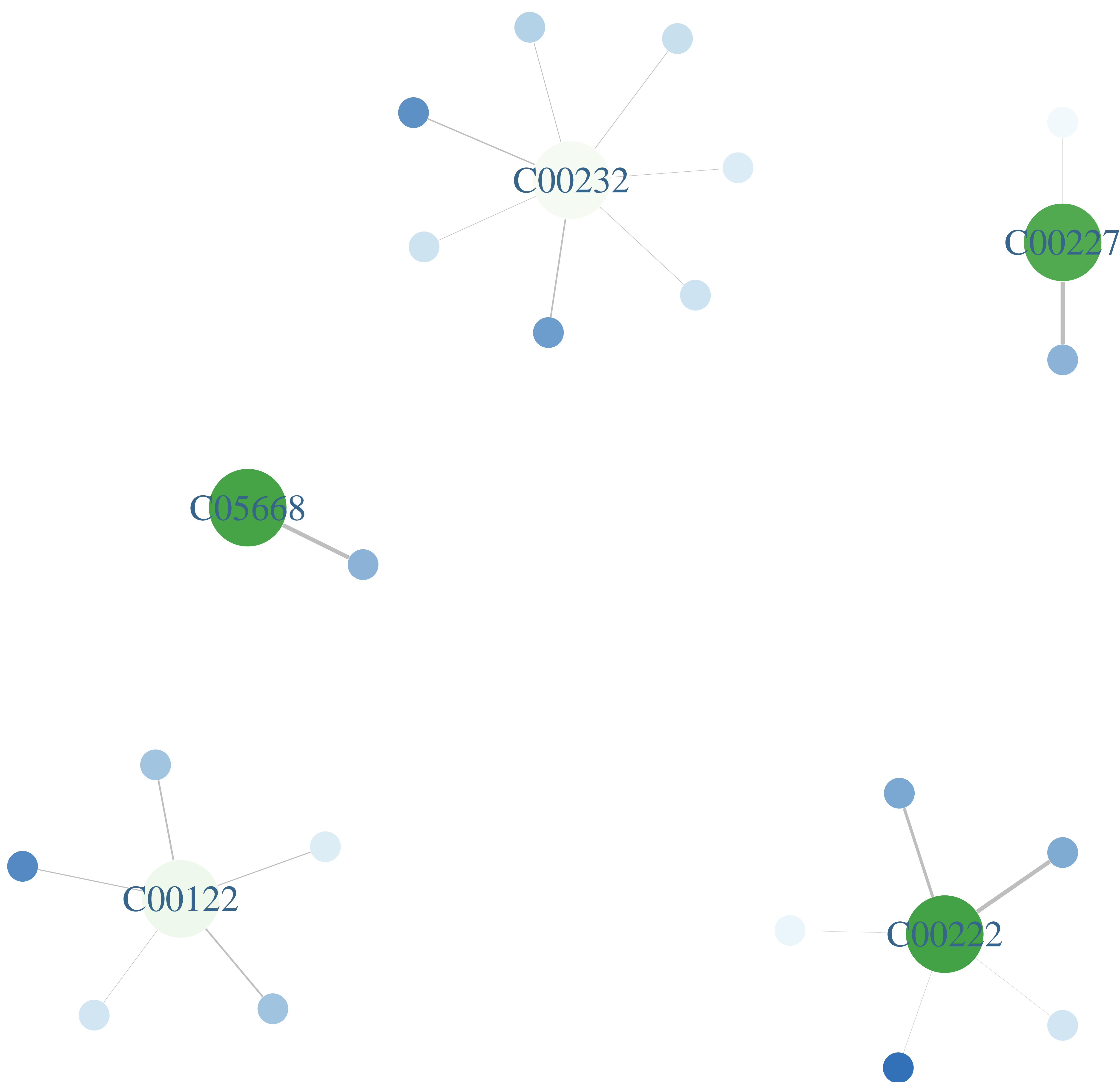
c21–steroid hormone biosynthesis and metabolism ; p–value: 0.274



caffeine metabolism ; p-value: 0.001



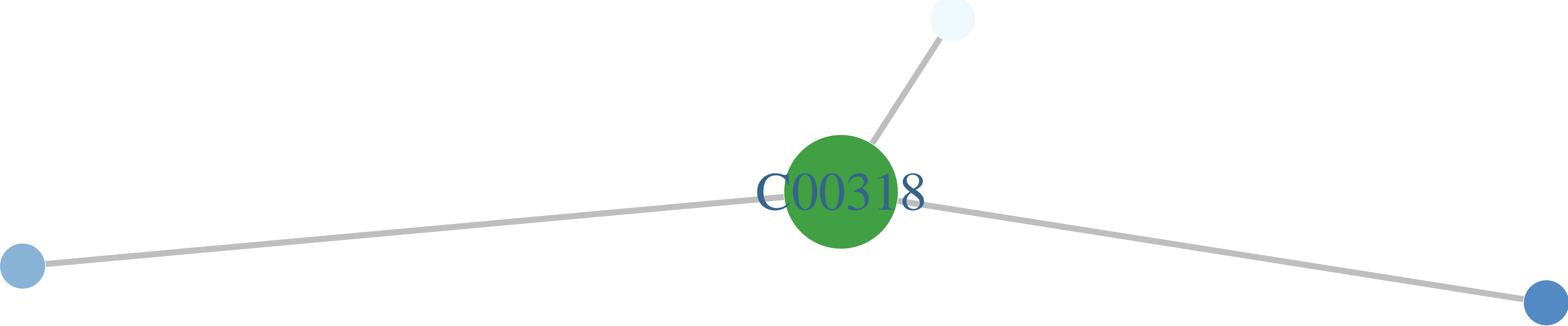
carbon fixation pathways in prokaryotes ; p-value: 0.093



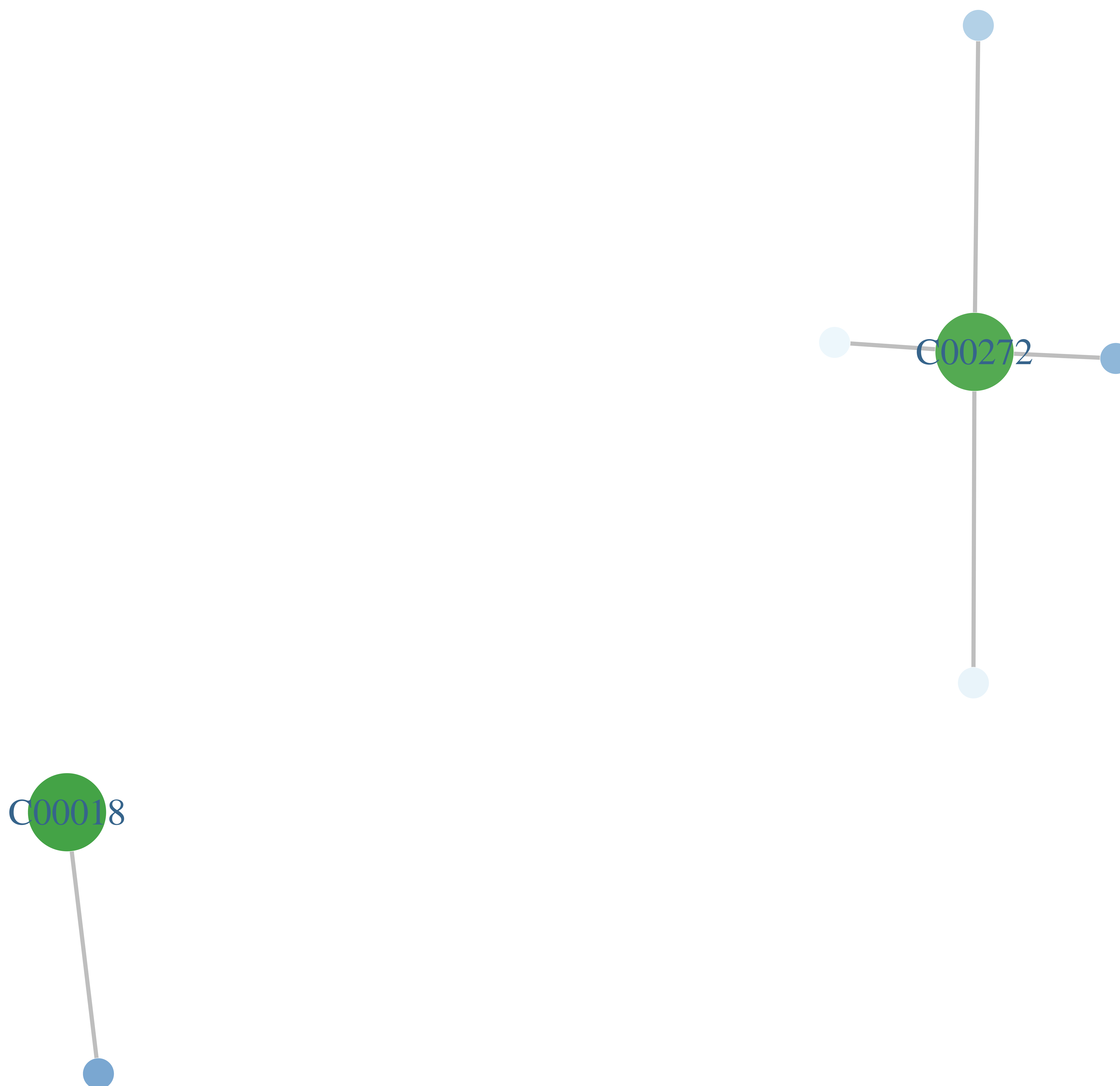
carbon metabolism ; p-value: 0.487



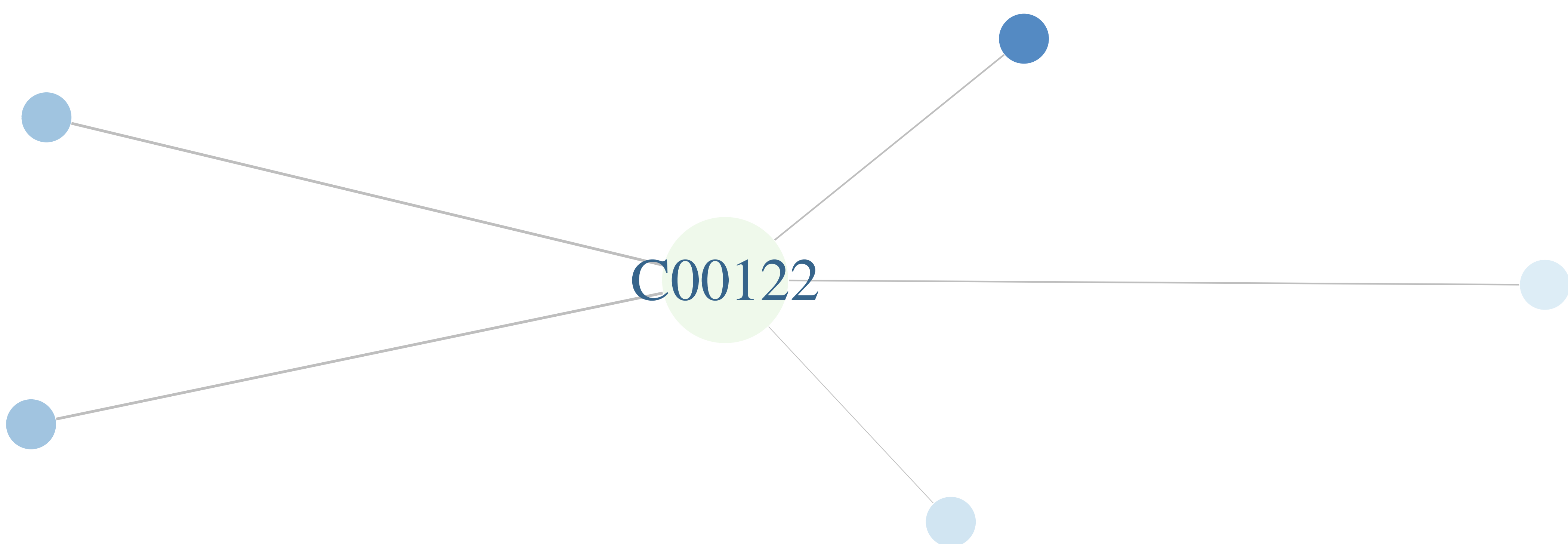
carnitine synthesis ; p-value: 0.195



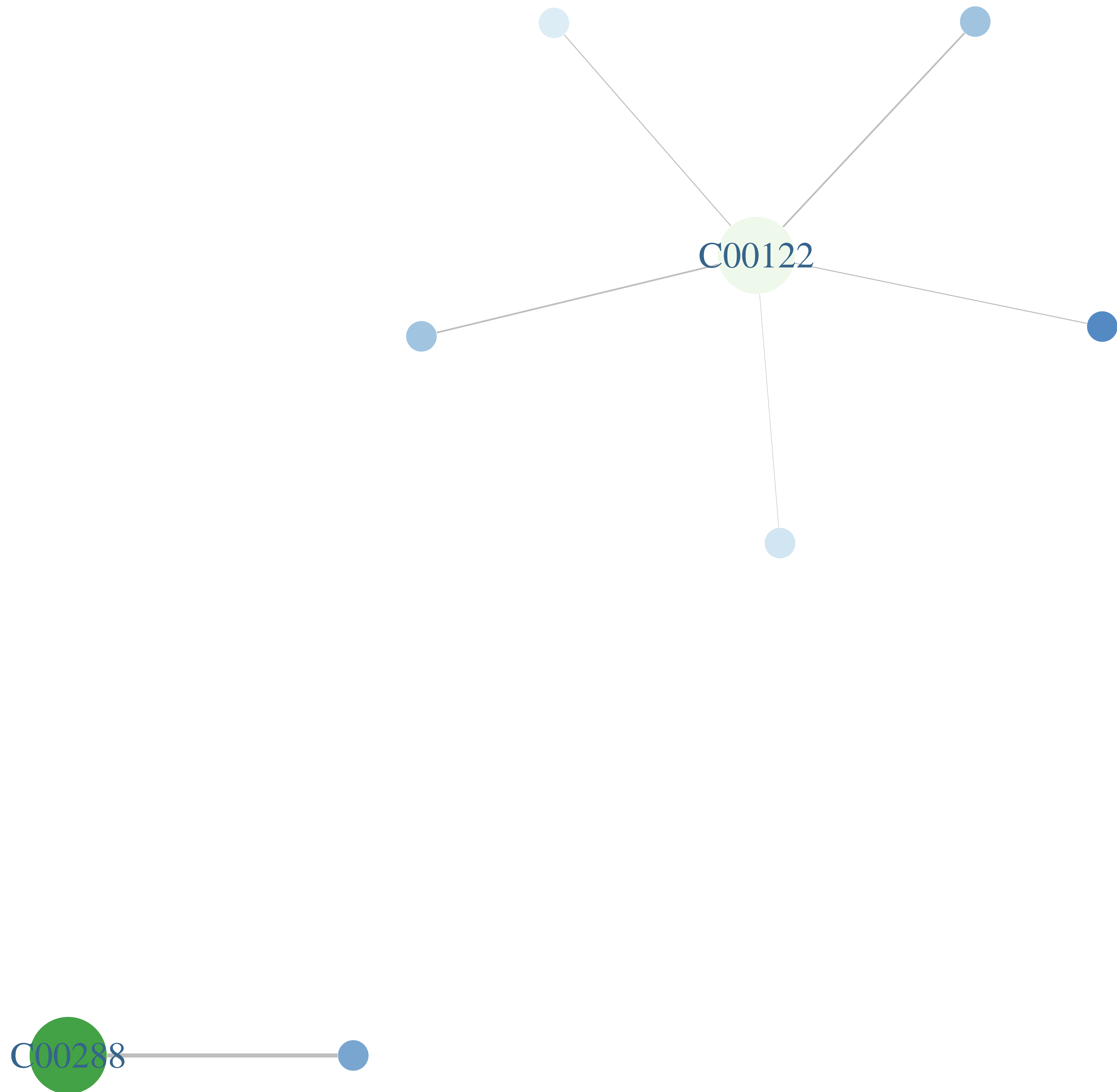
catecholamine biosynthesis ; p-value: 0.195



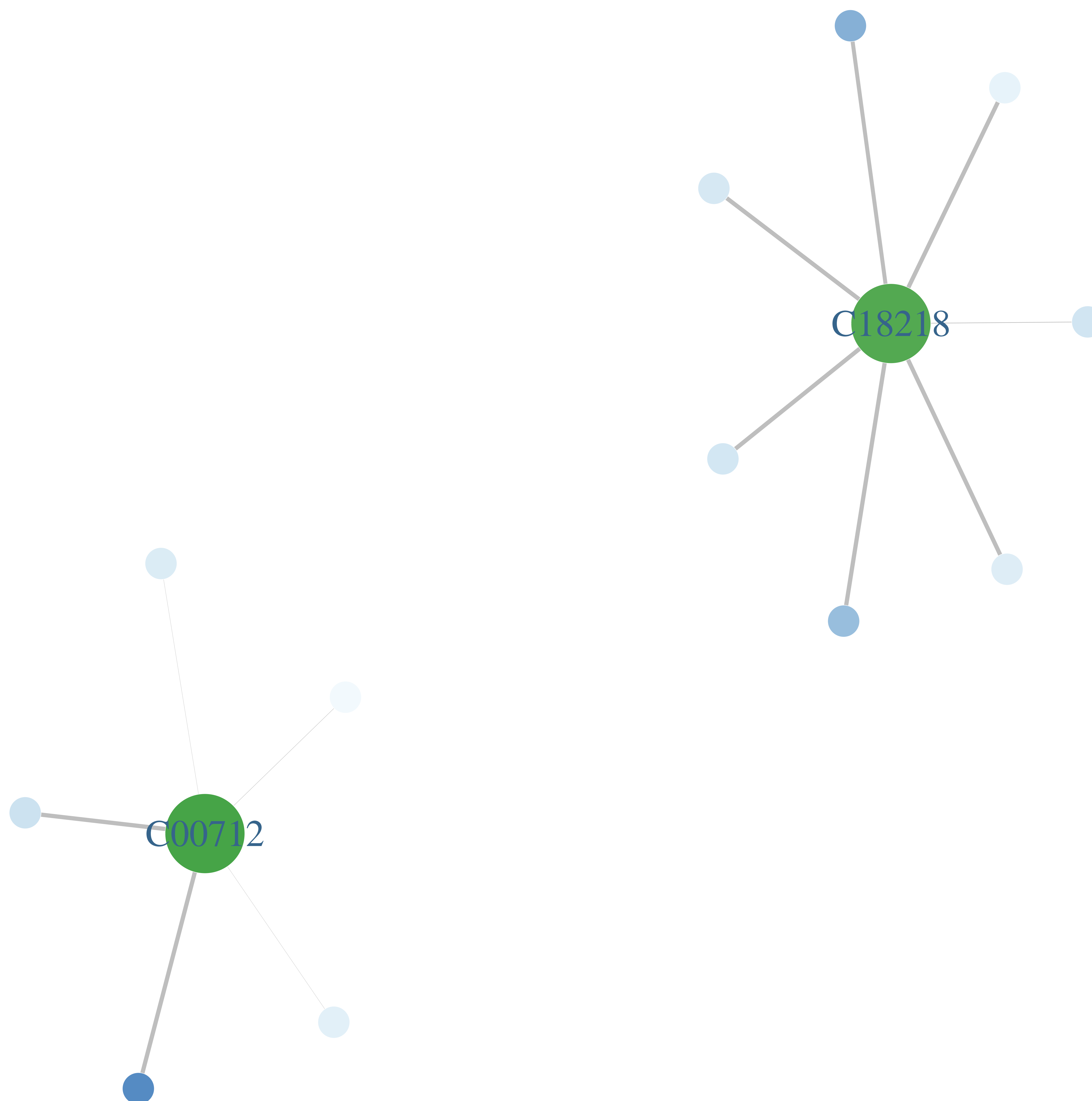
citrate cycle (tca cycle) ; p-value: 0.265



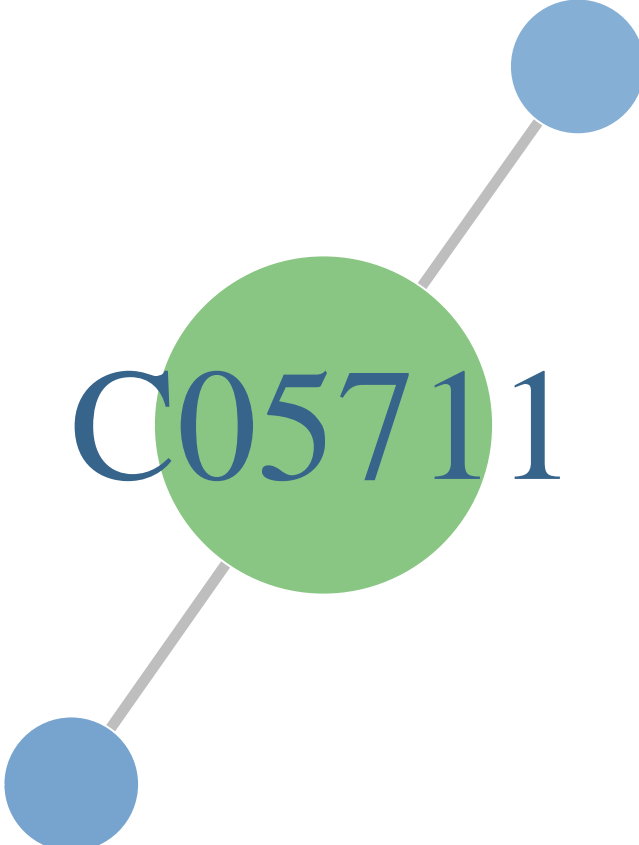
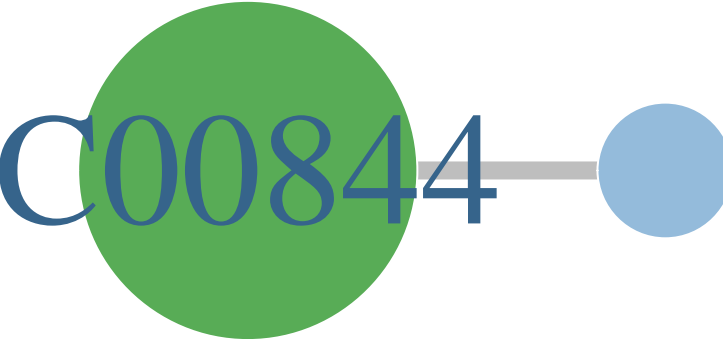
citric acid cycle ; p-value: 0.265



cutin, suberine and wax biosynthesis ; p-value: 0.023

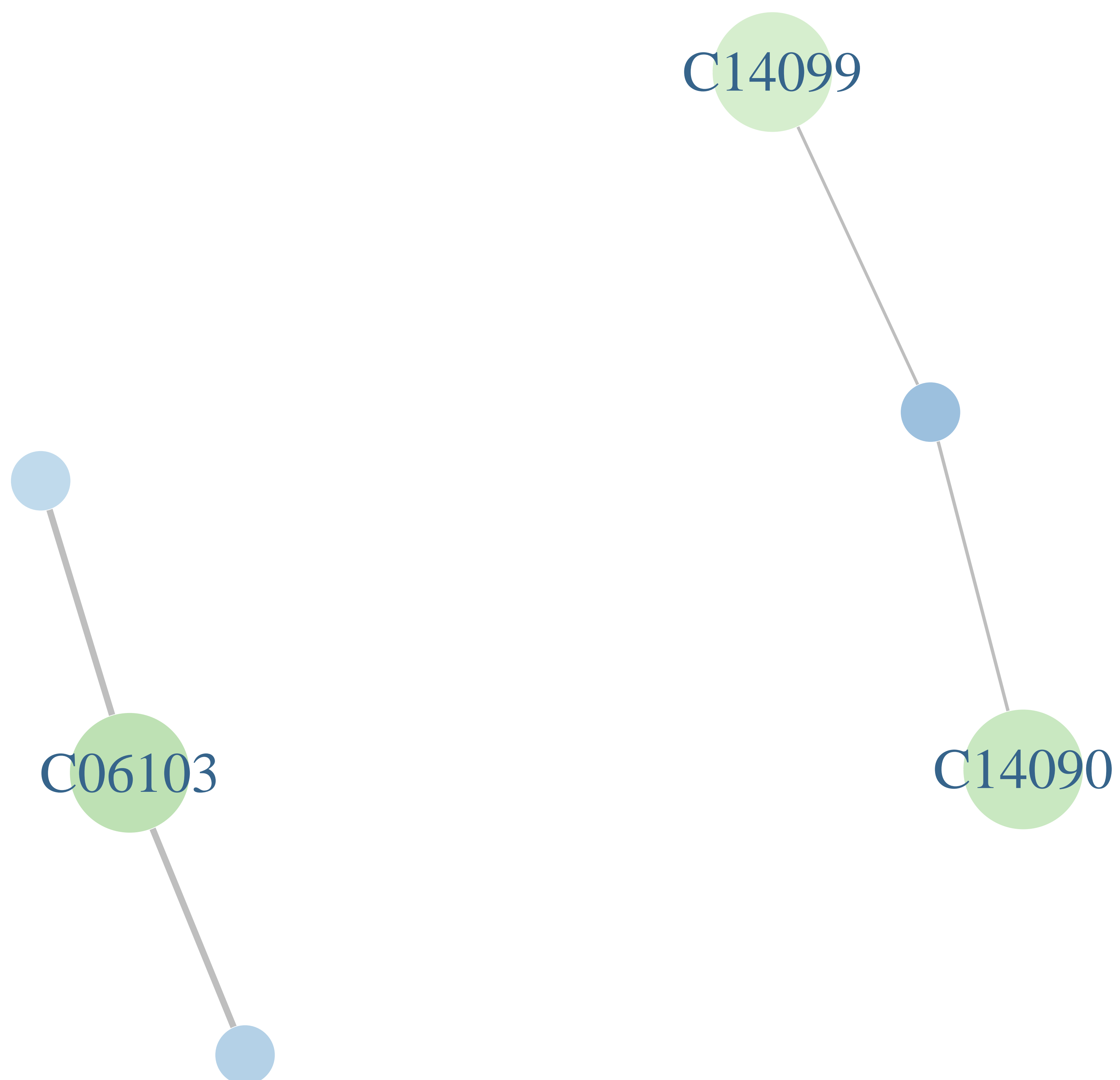


cyanoamino acid metabolism ; p-value: 0.074

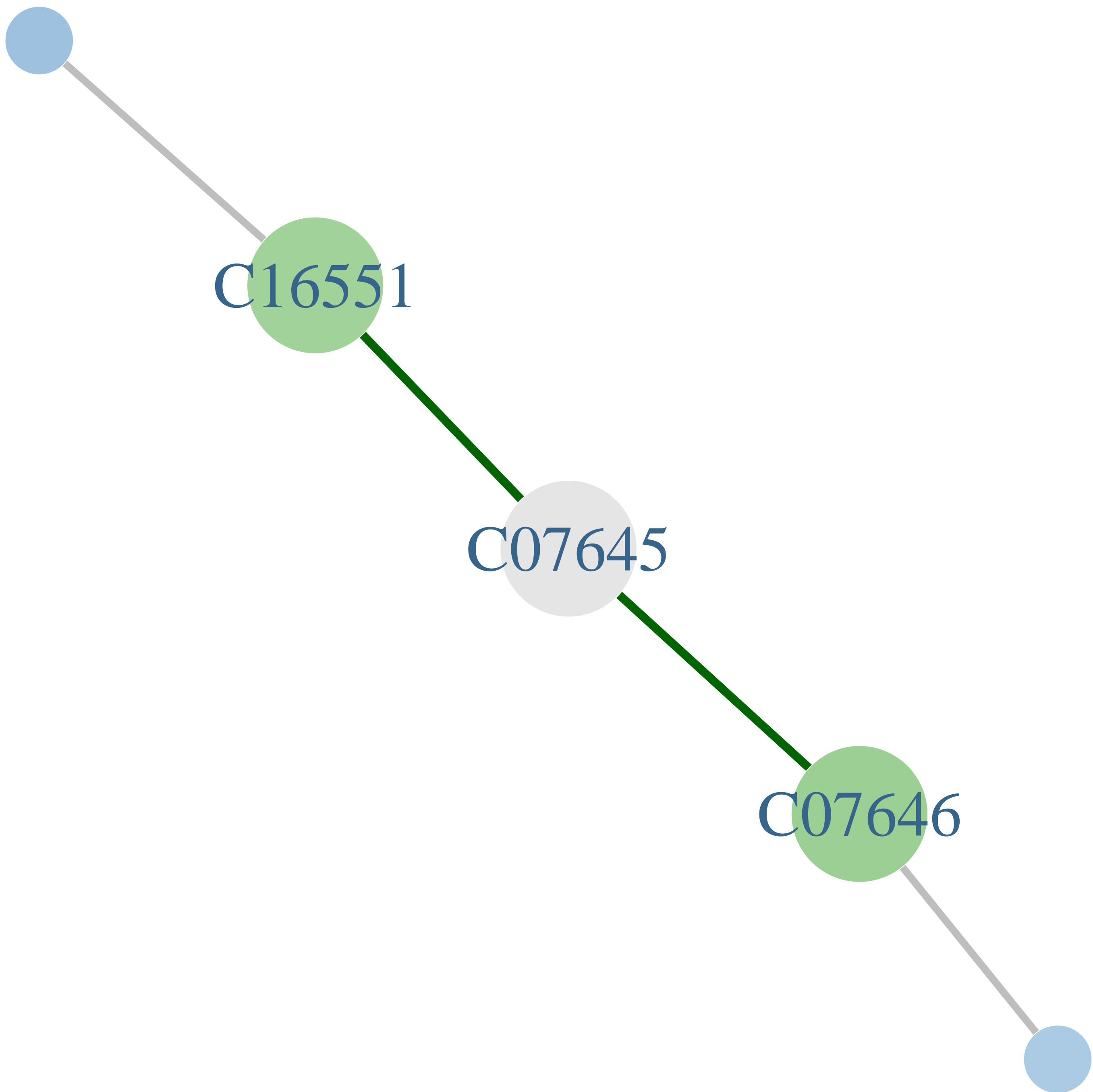


Mouse Brain Metabolomics Data
Hippocampus Week 3 v.s. Week 16
Pathway Plots

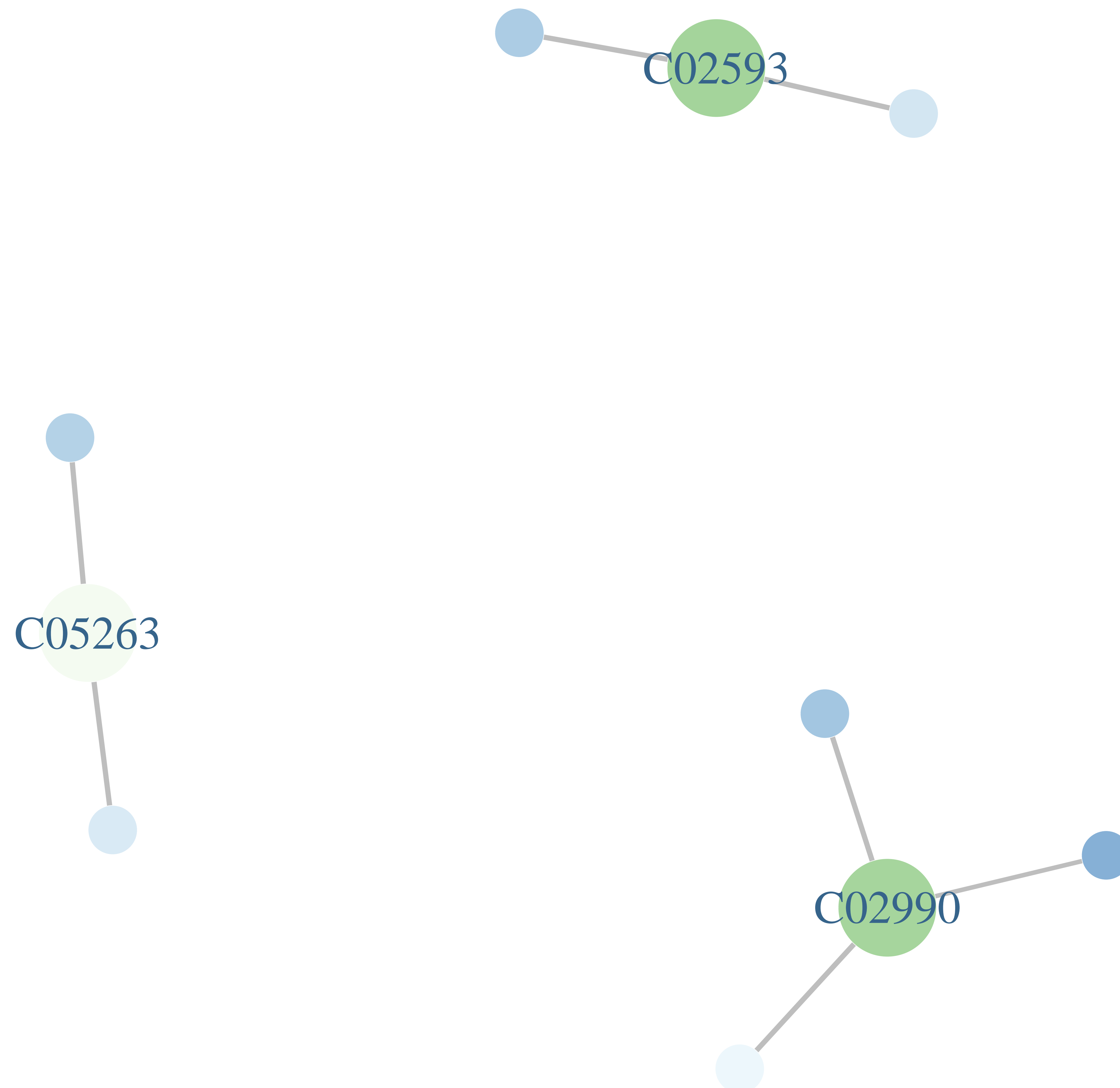
degradation of aromatic compounds ; p-value: 0.091



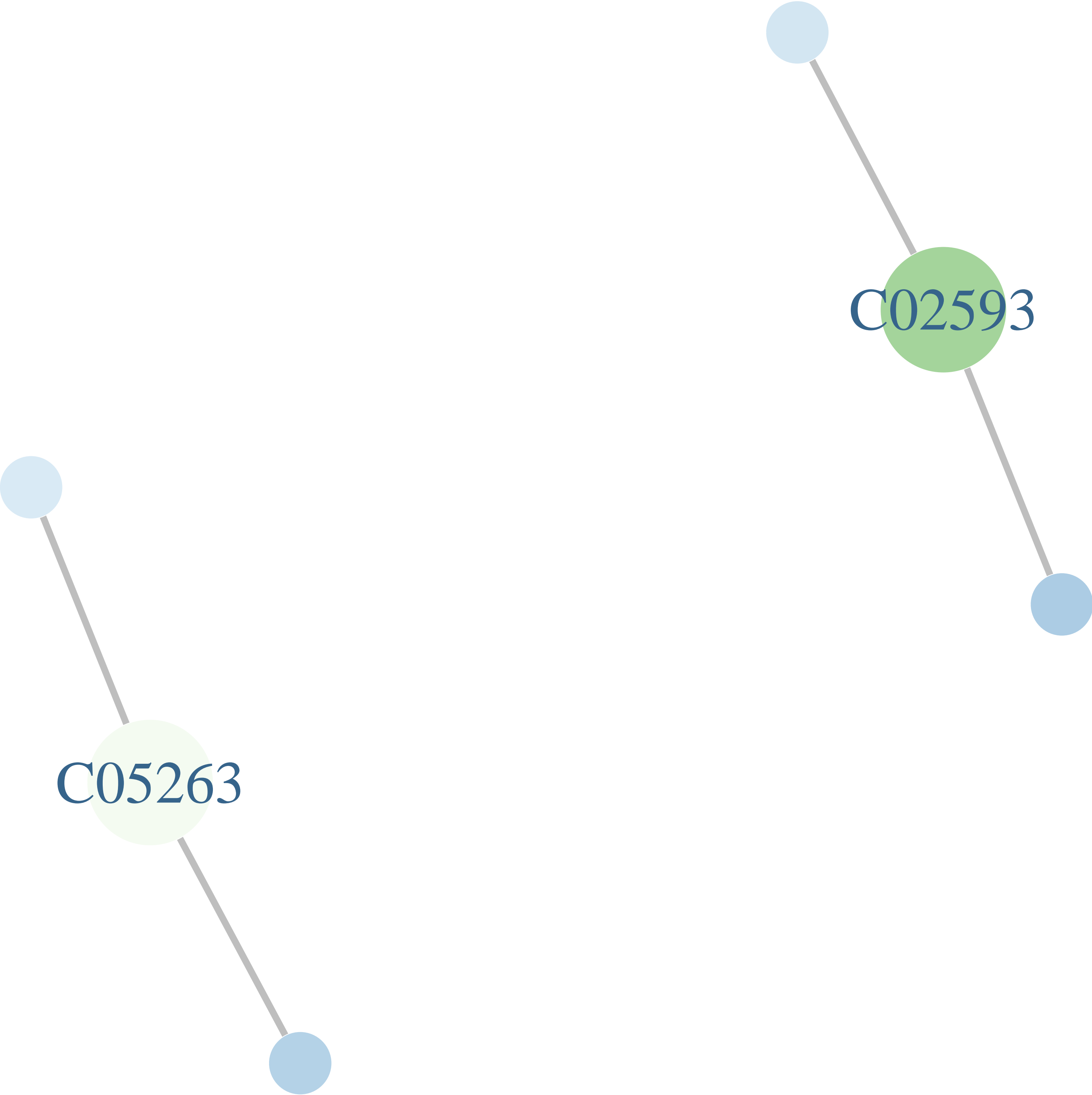
drug metabolism – cytochrome p450 ; p-value: 0.28



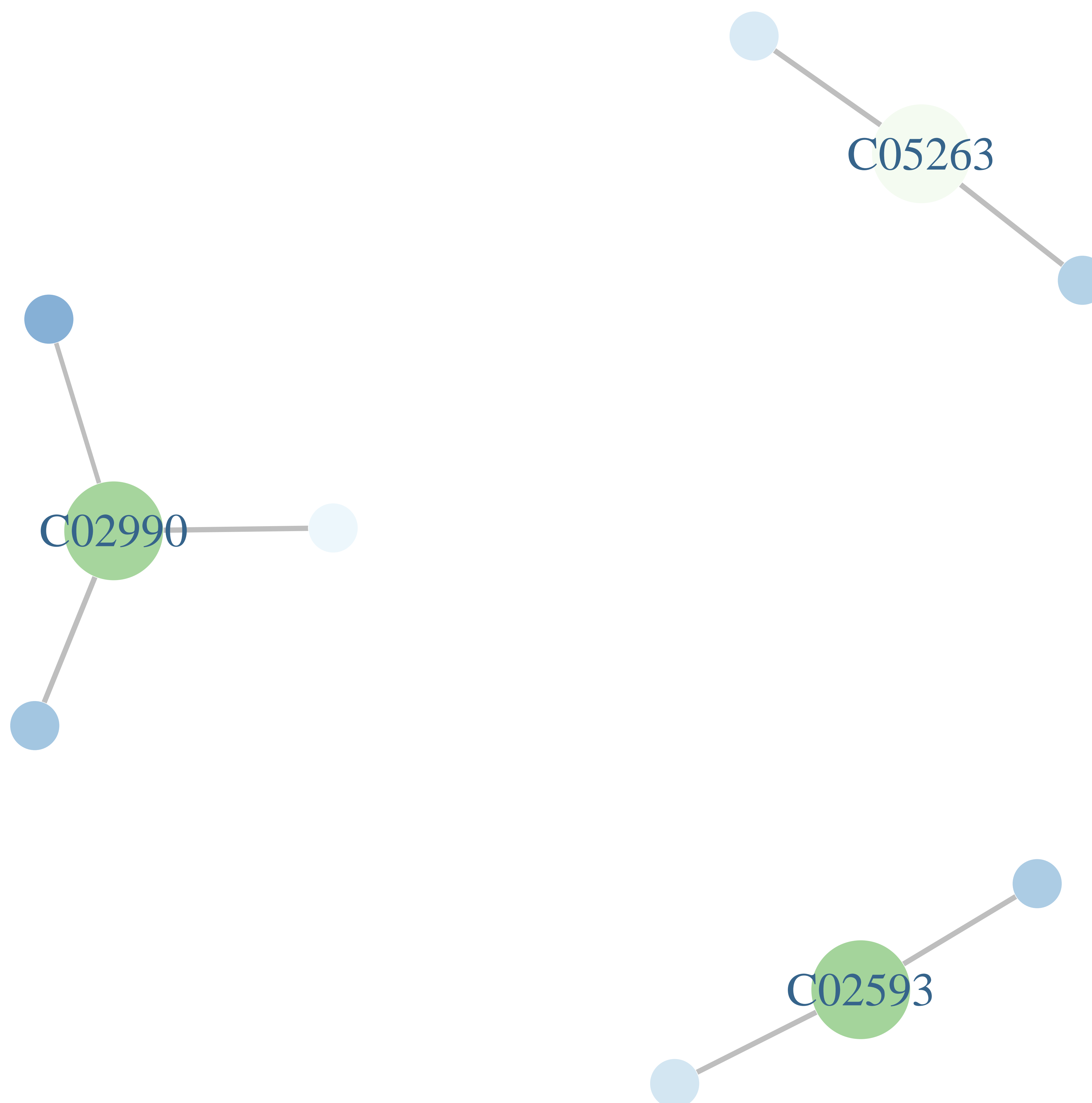
fatty acid degradation ; p-value: 0.144



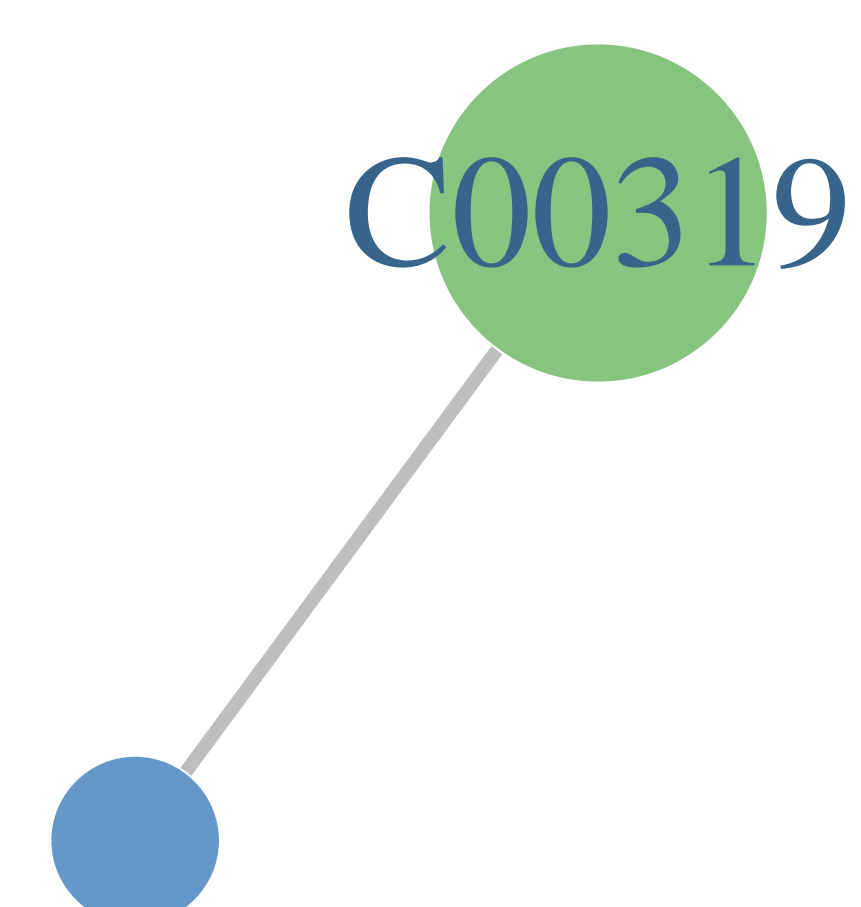
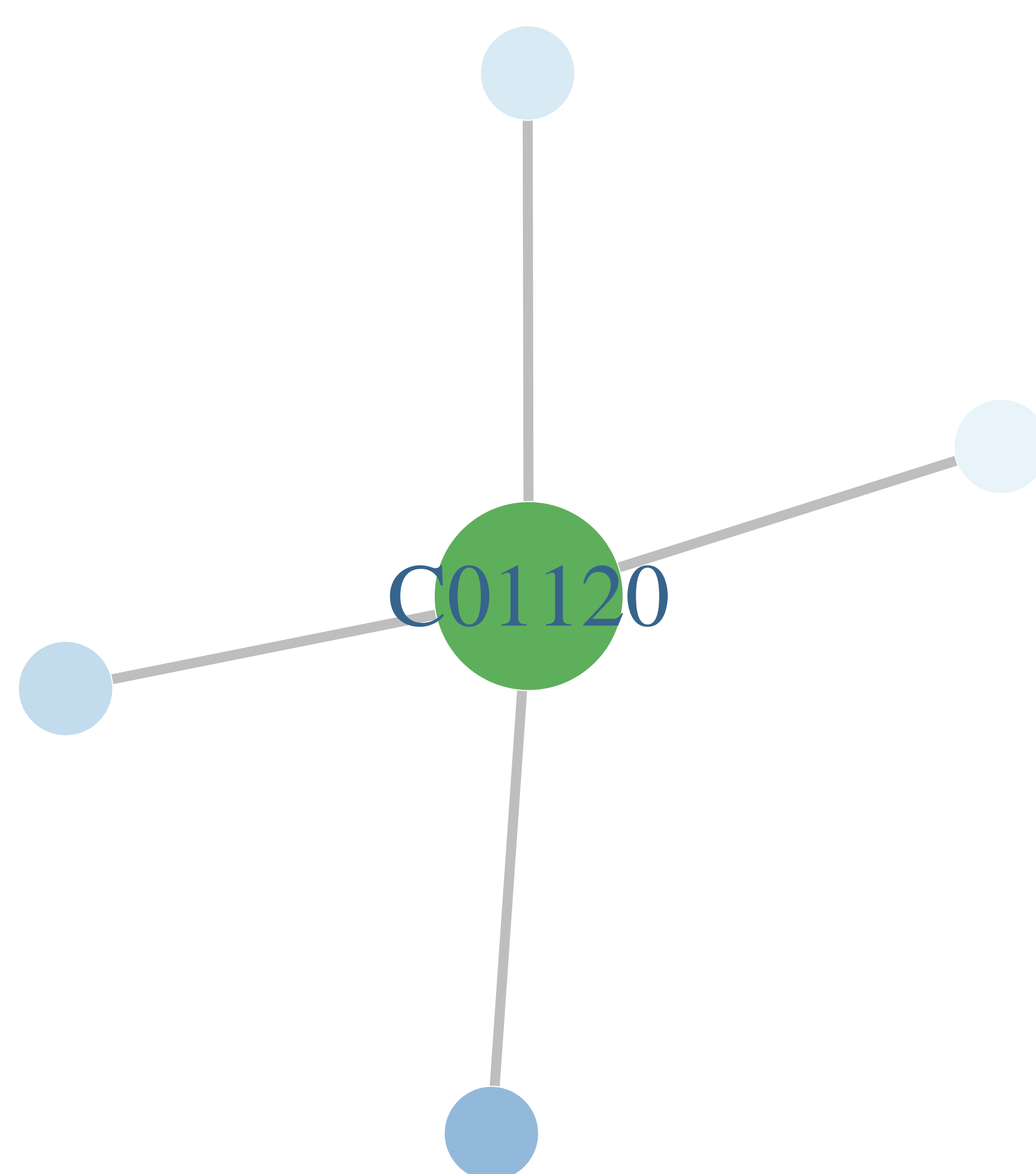
fatty acid elongation in mitochondria ; p-value: 0.28



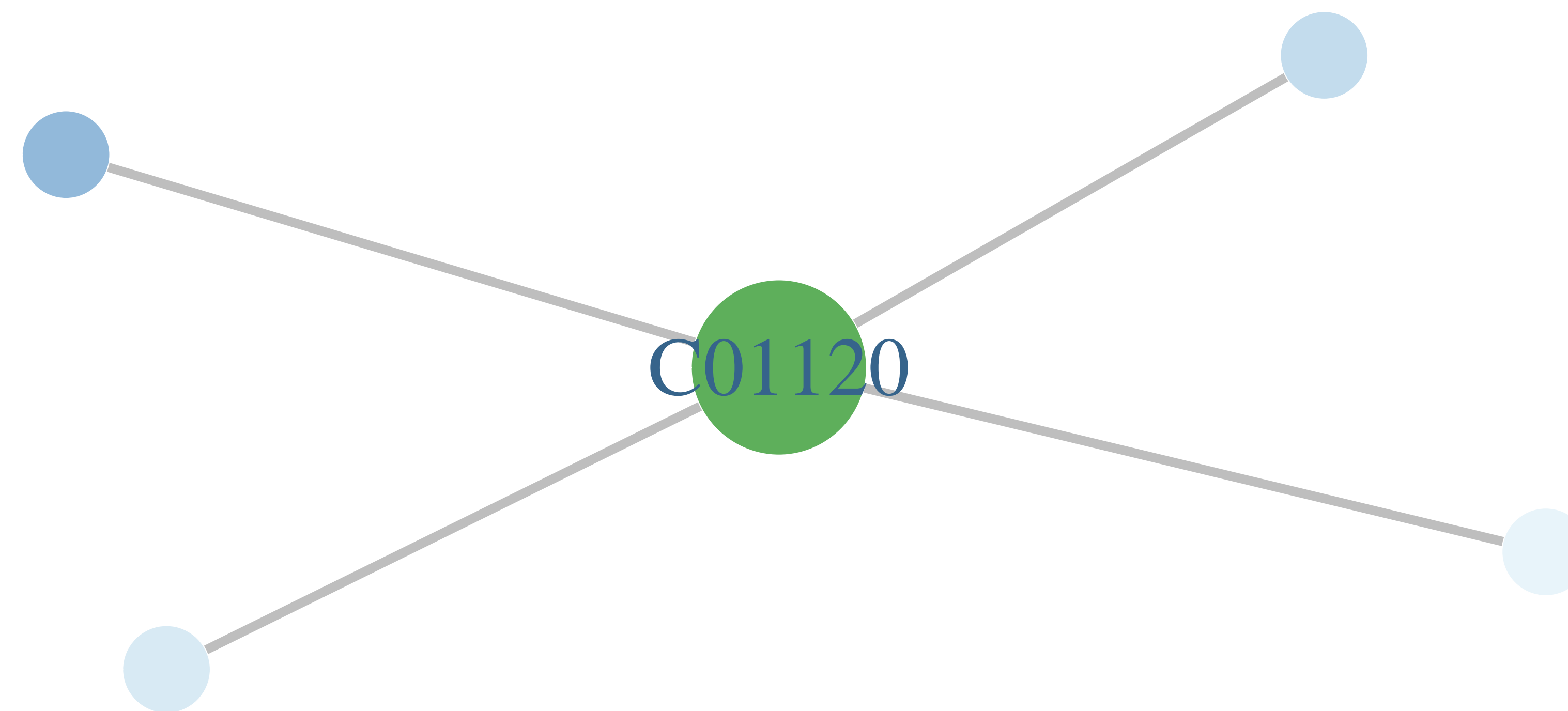
fatty acid metabolism ; p-value: 0.391



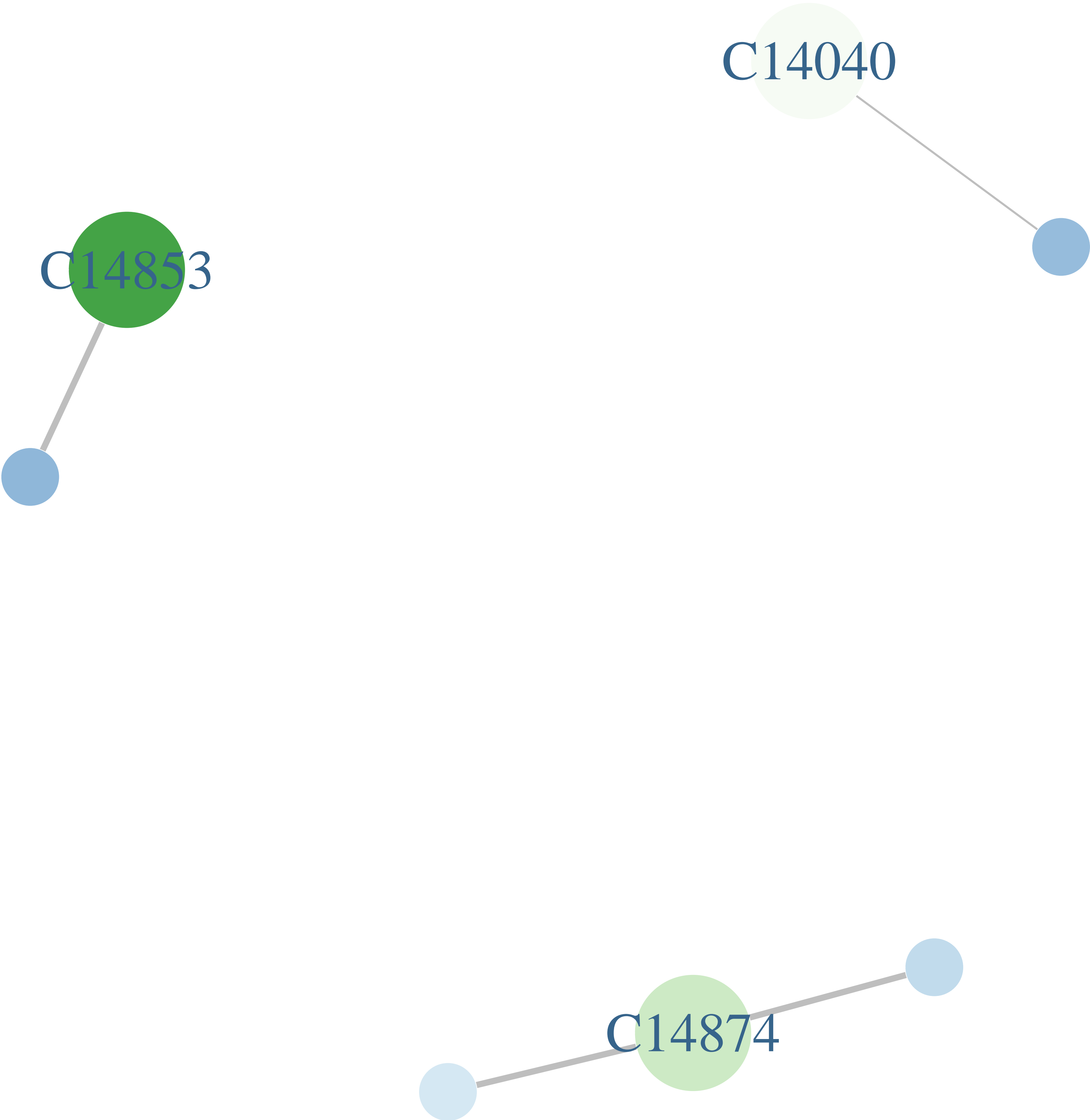
glycerophospholipid metabolism ; p-value: 0.626



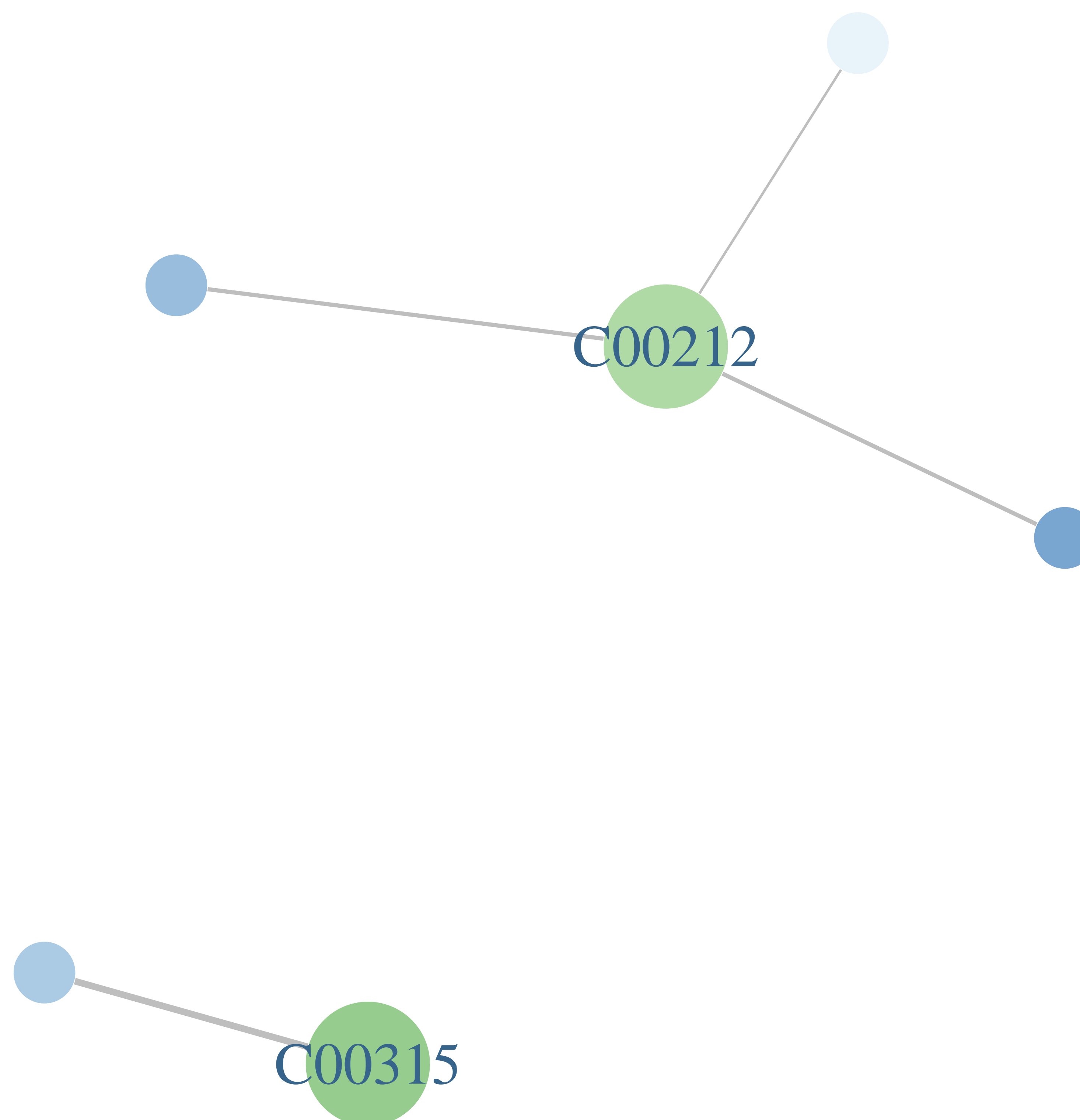
glycosphingolipid metabolism ; p-value: 0.22



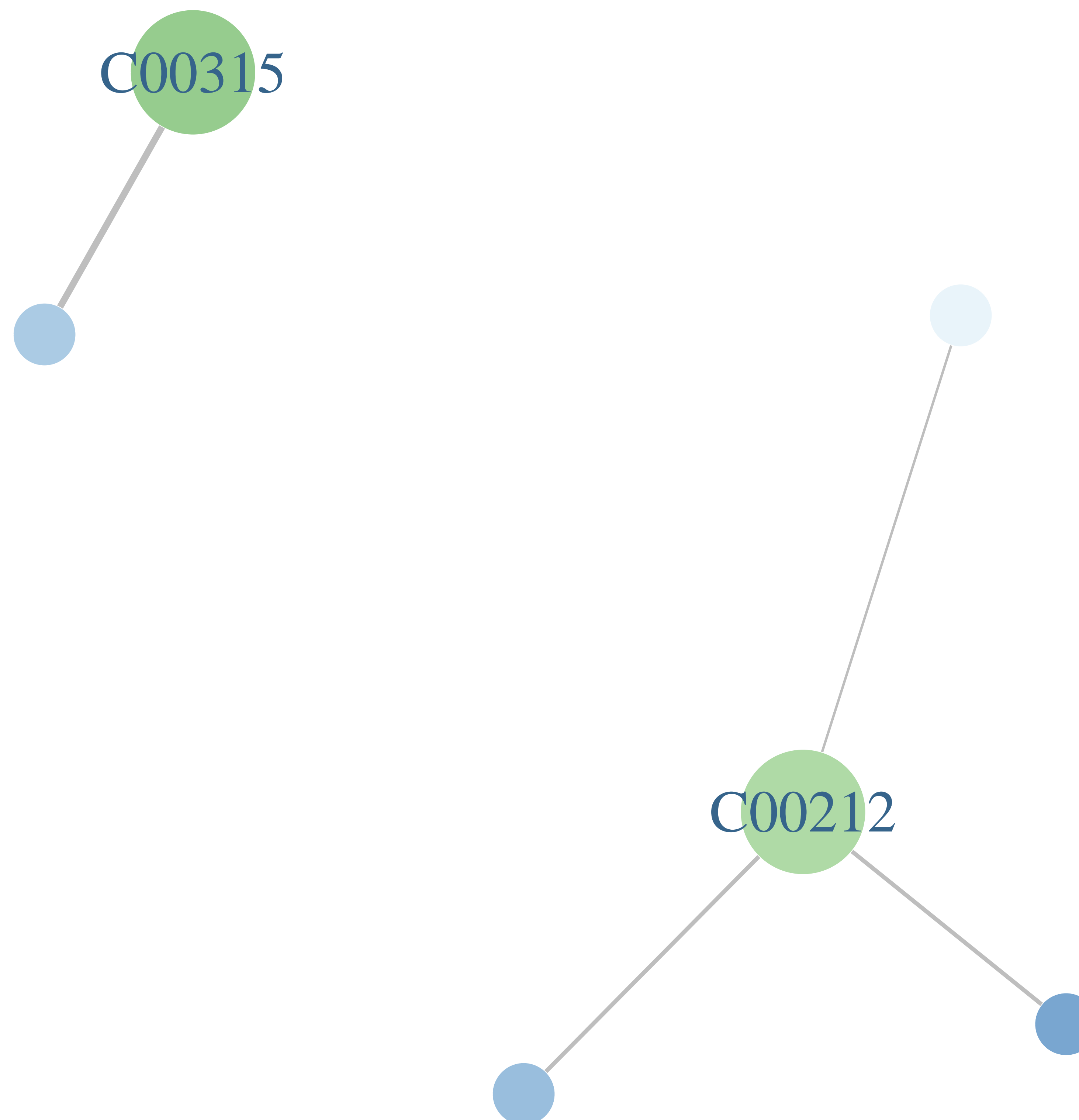
metabolism of xenobiotics by cytochrome p450 ; p-value: 0.369



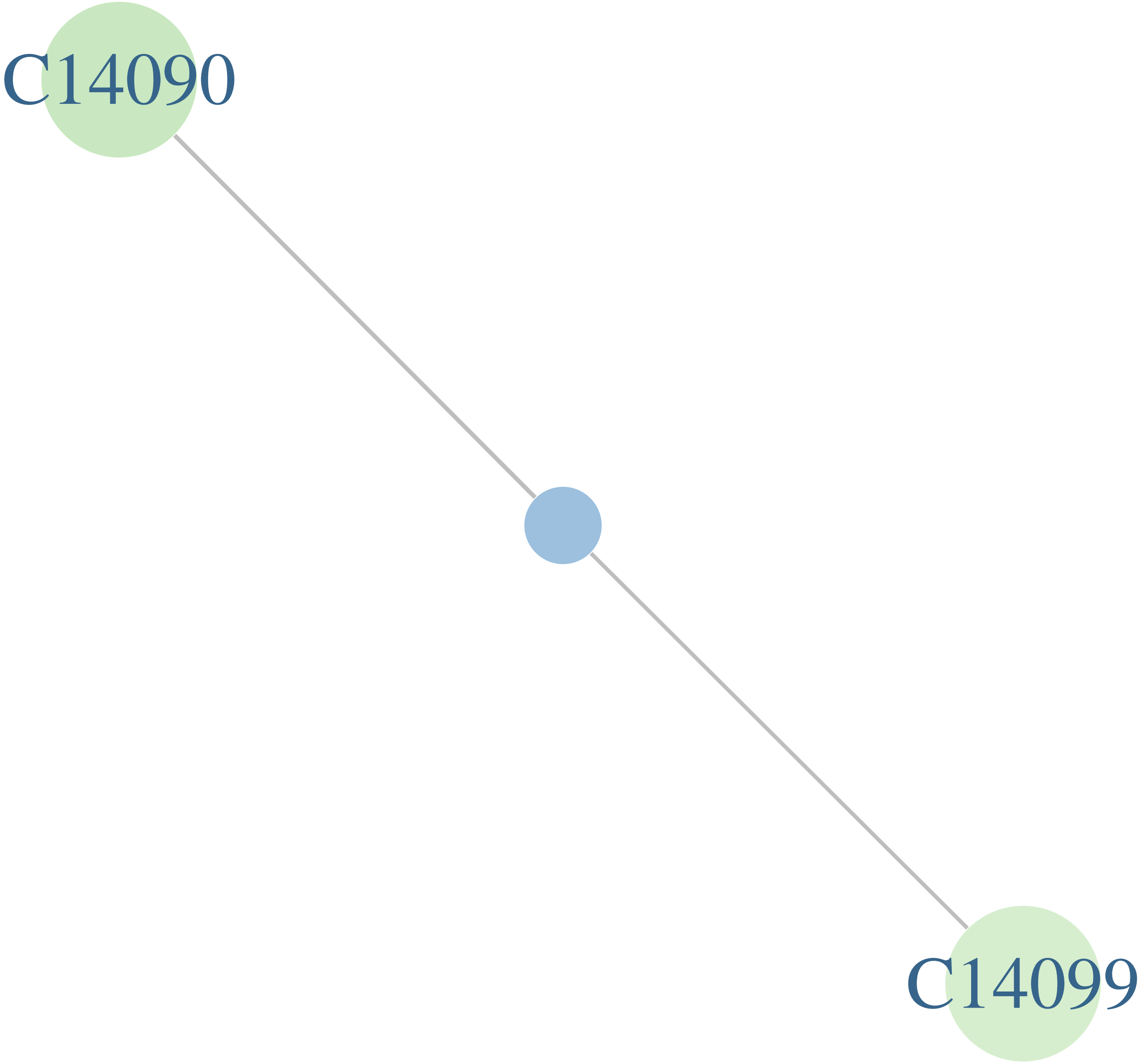
methionine and cysteine metabolism ; p-value: 0.469



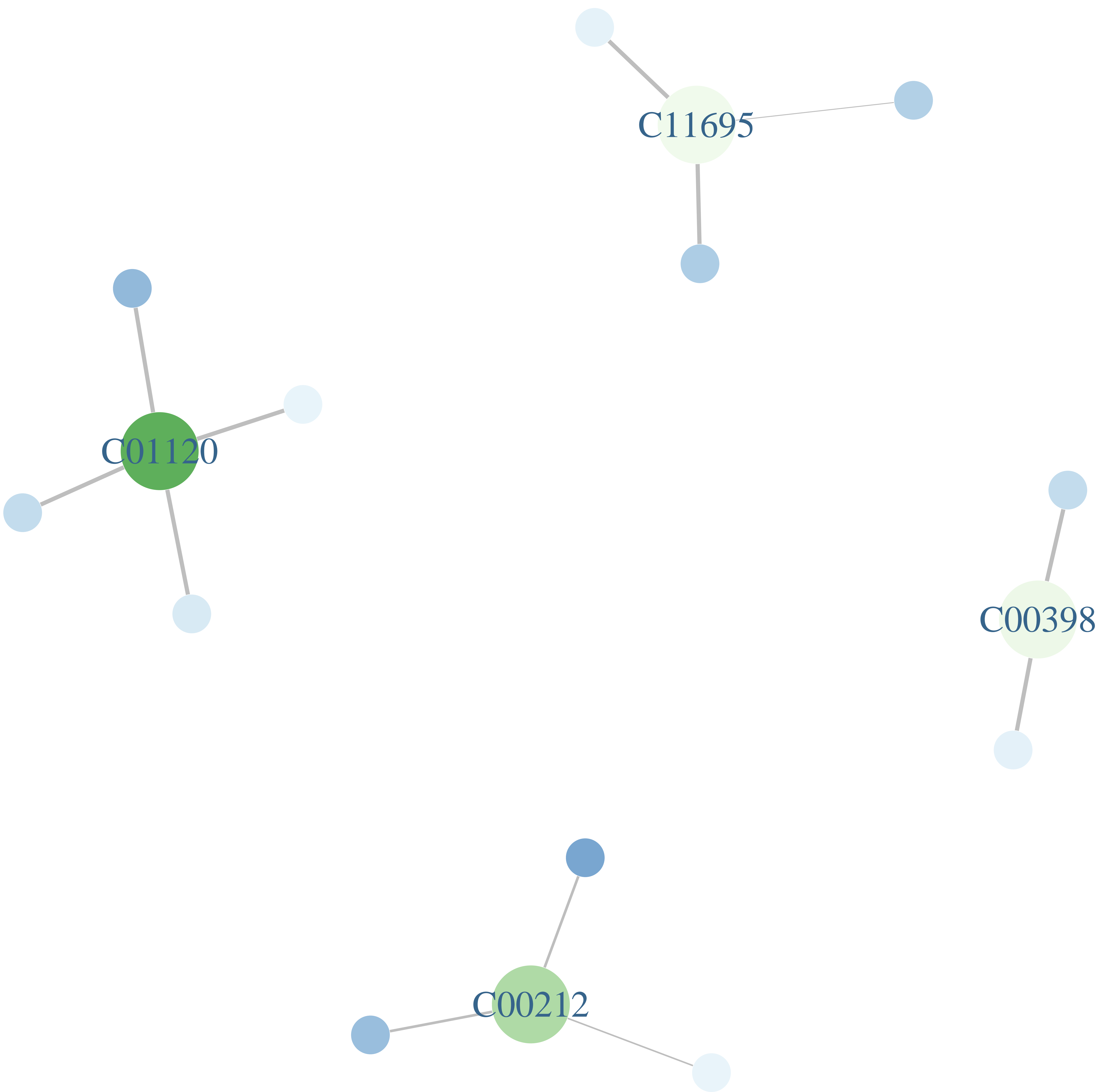
methionine metabolism ; p-value: 0.175



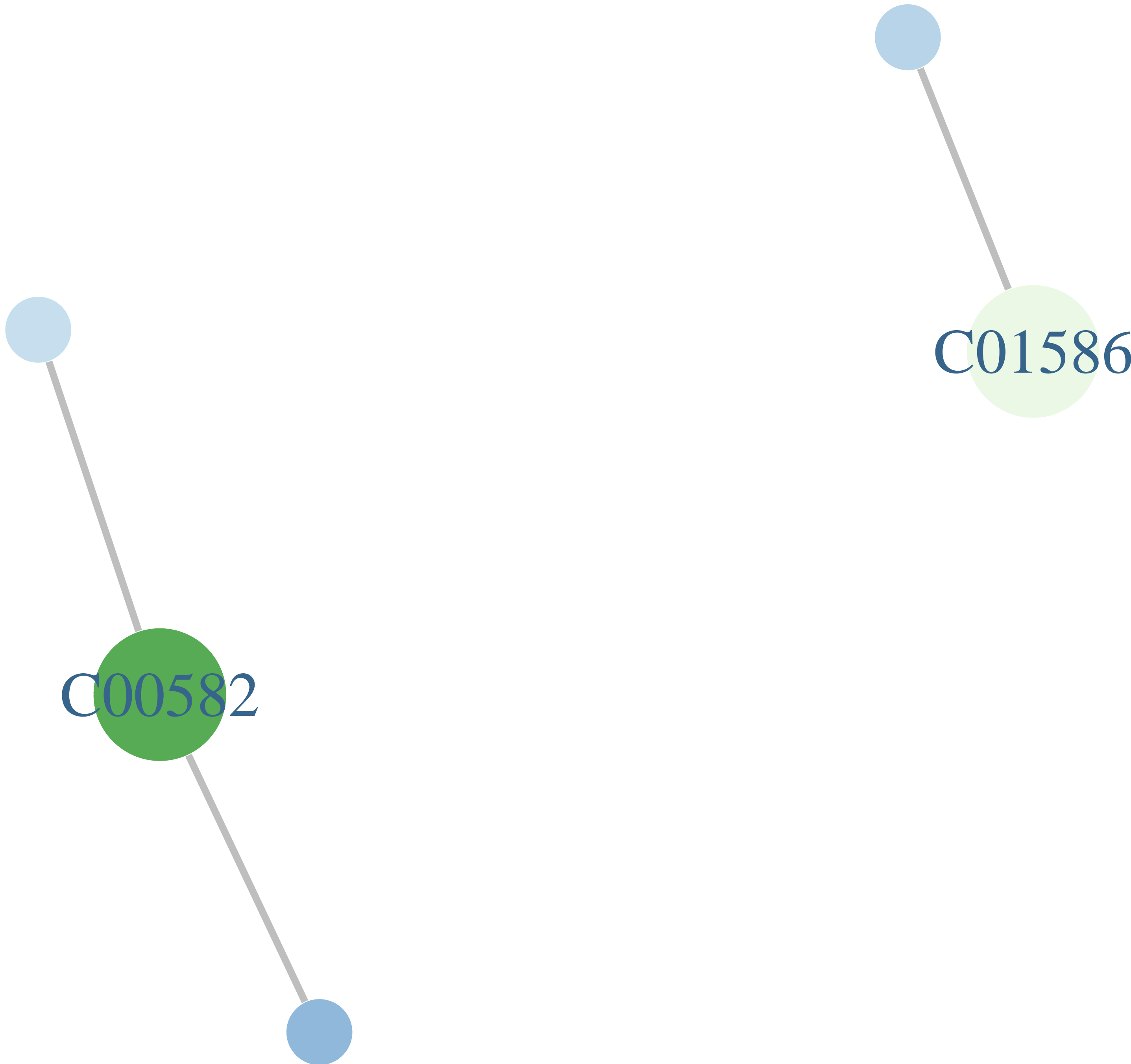
naphthalene degradation ; p-value: 0.009



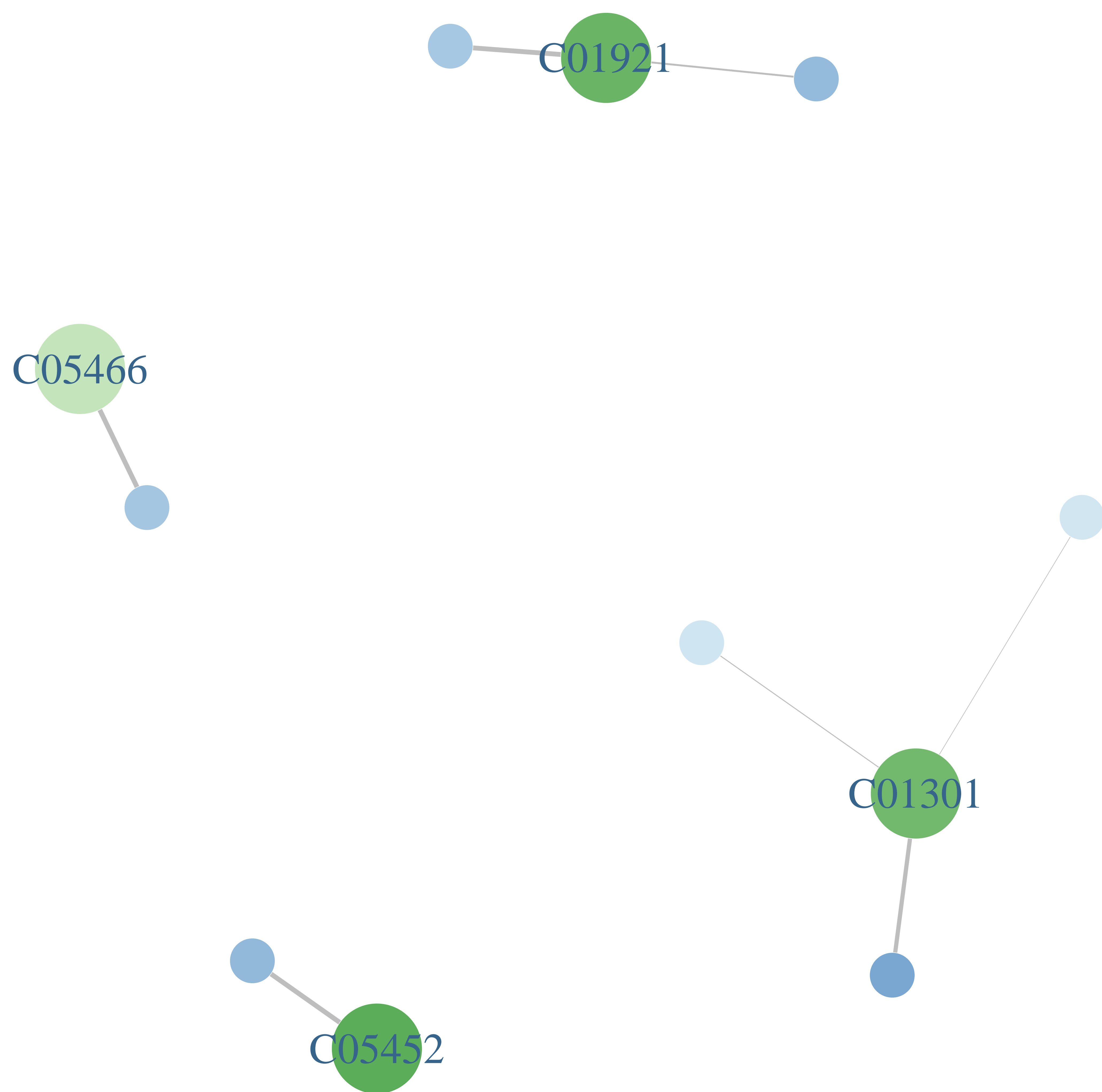
neuroactive ligand–receptor interaction ; p–value: 0.033



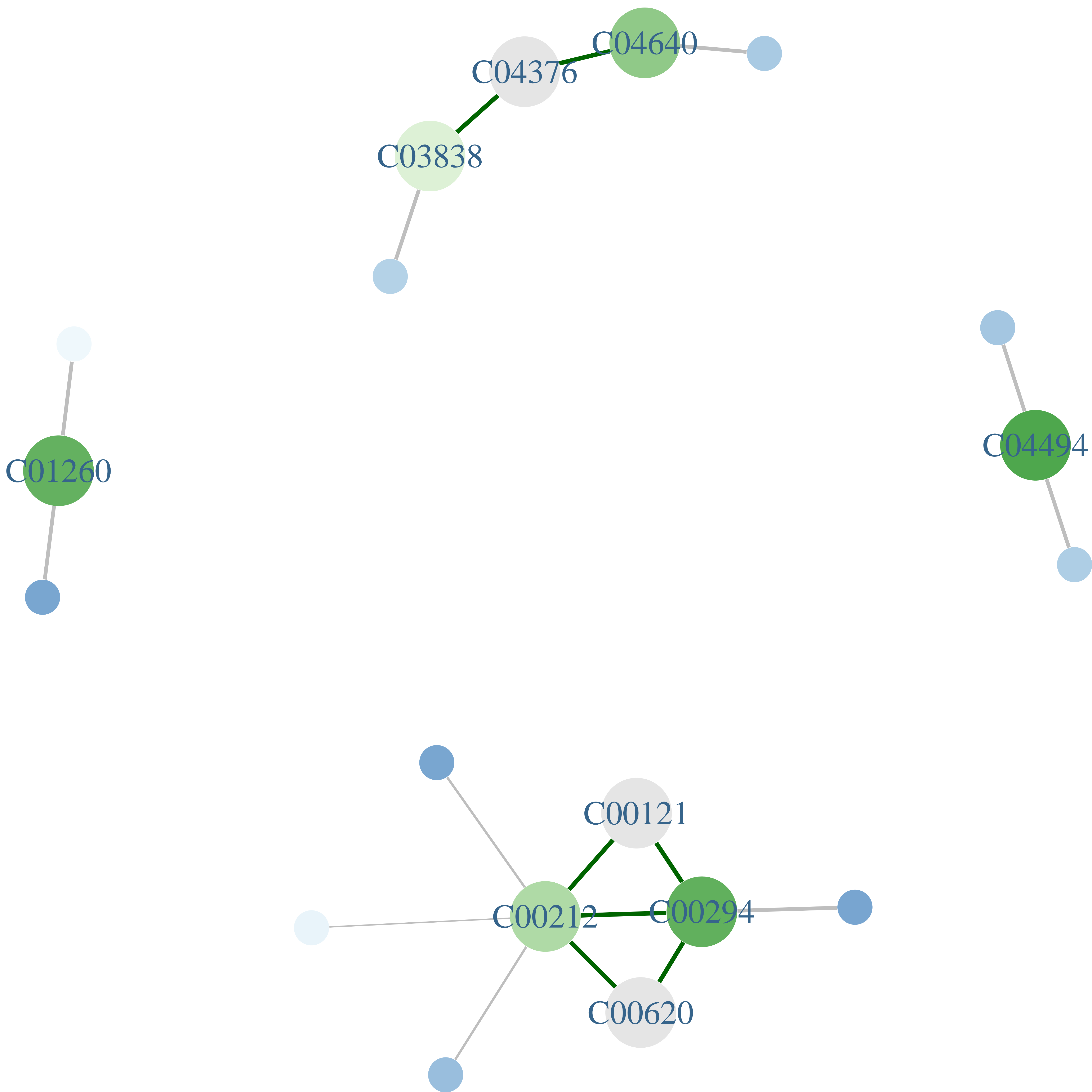
phenylalanine metabolism ; p-value: 0.205



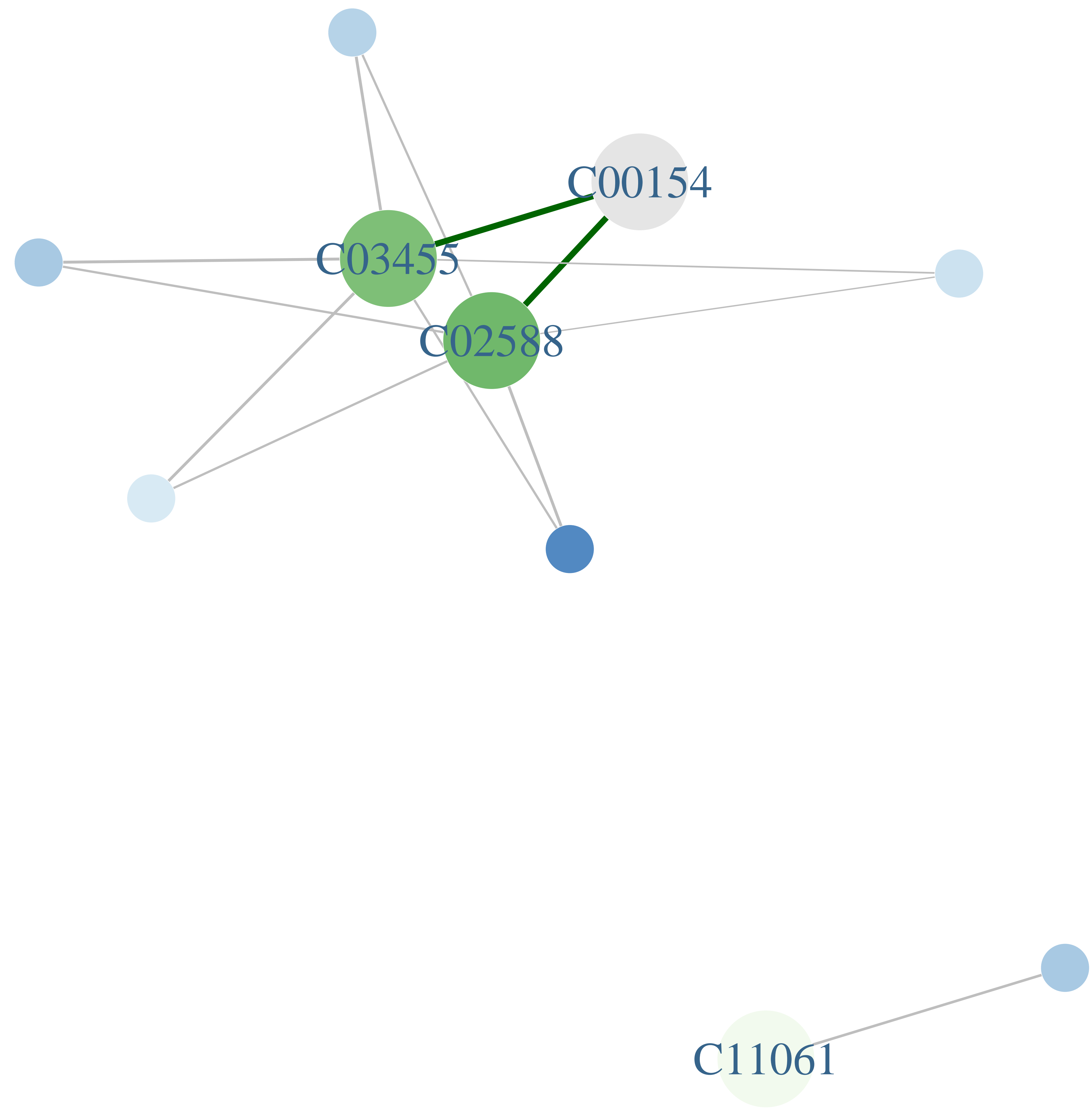
primary bile acid biosynthesis ; p-value: 0.053



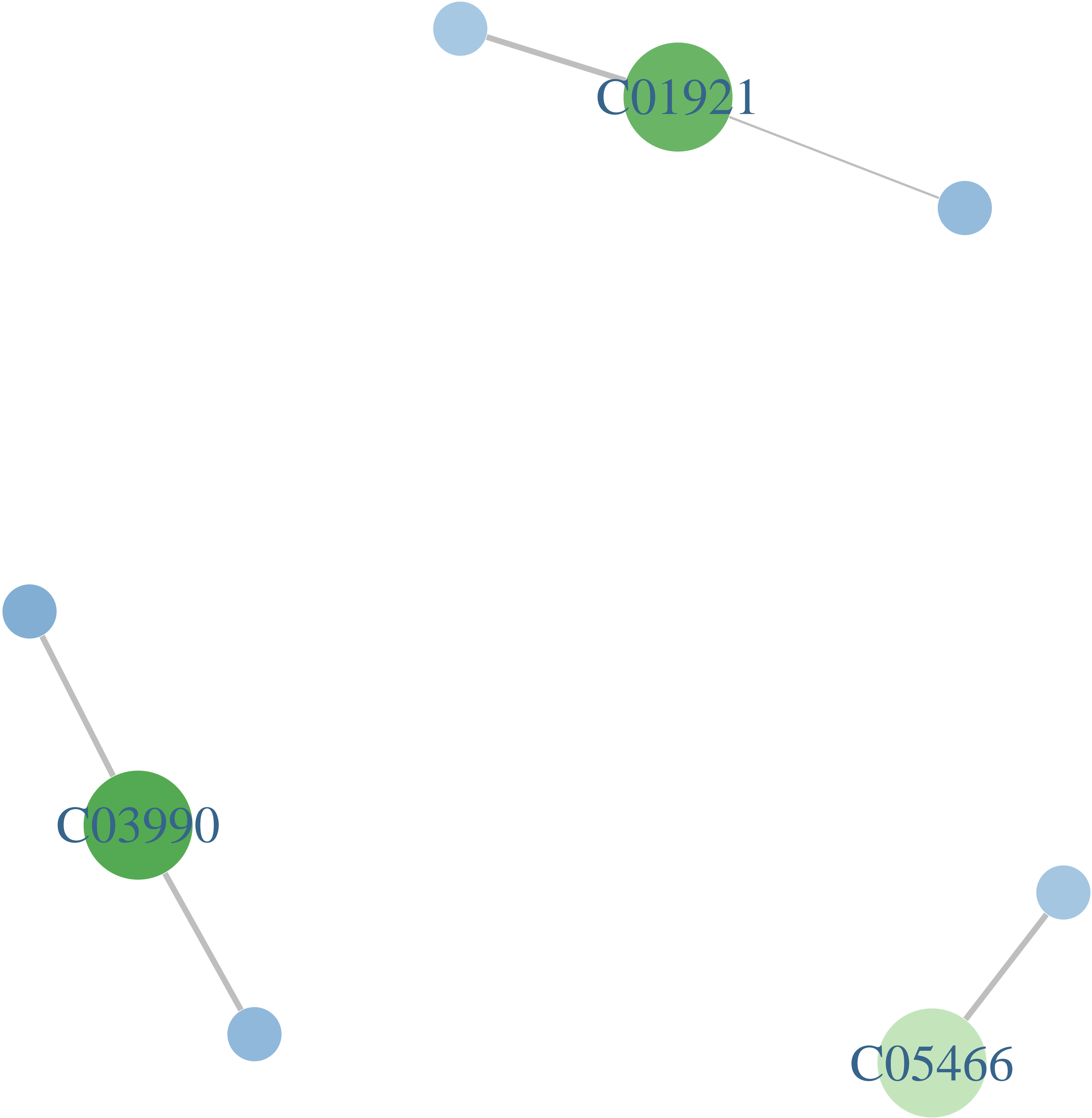
purine metabolism ; p-value: 0.046



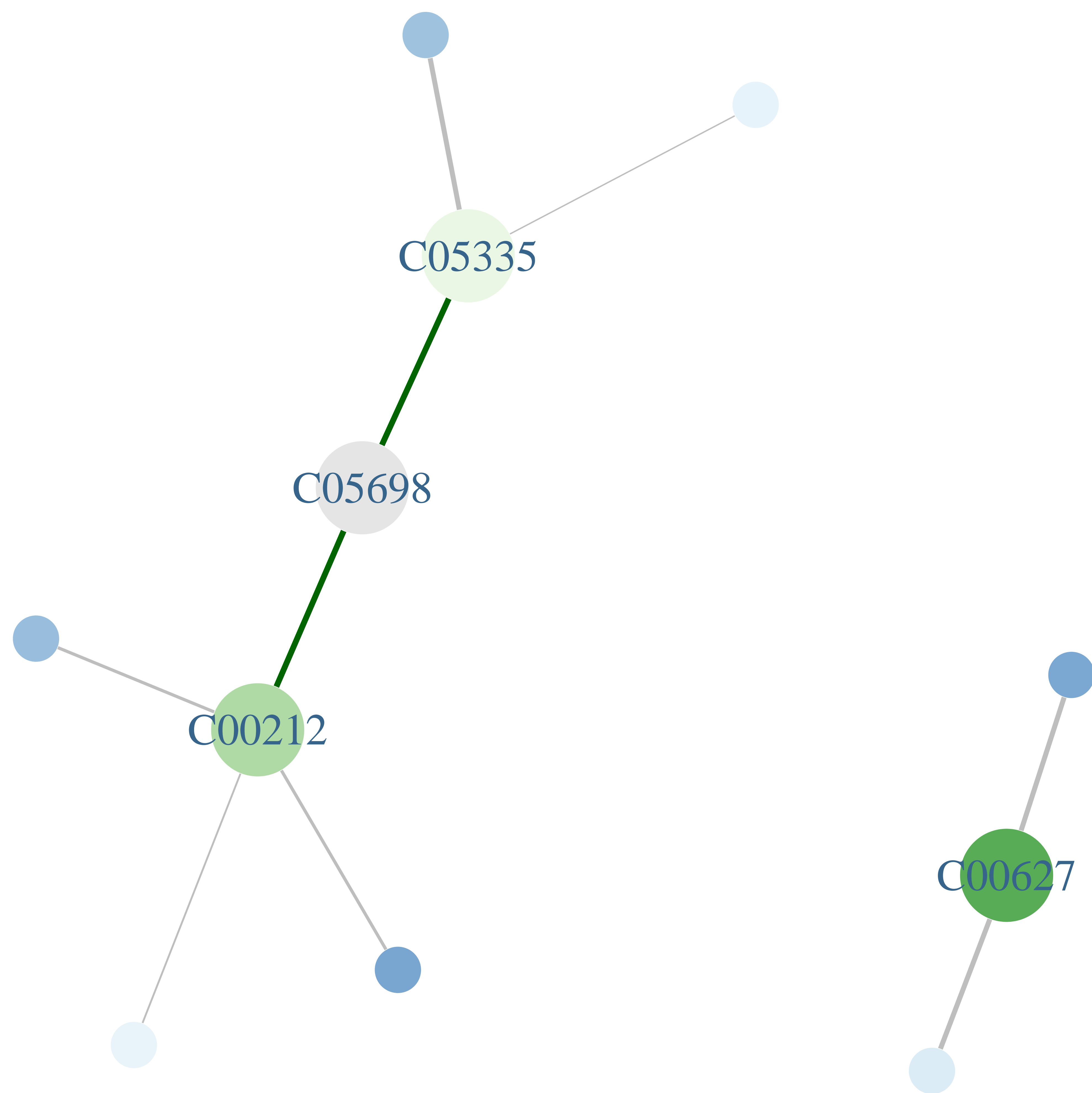
retinol metabolism ; p-value: 0.043



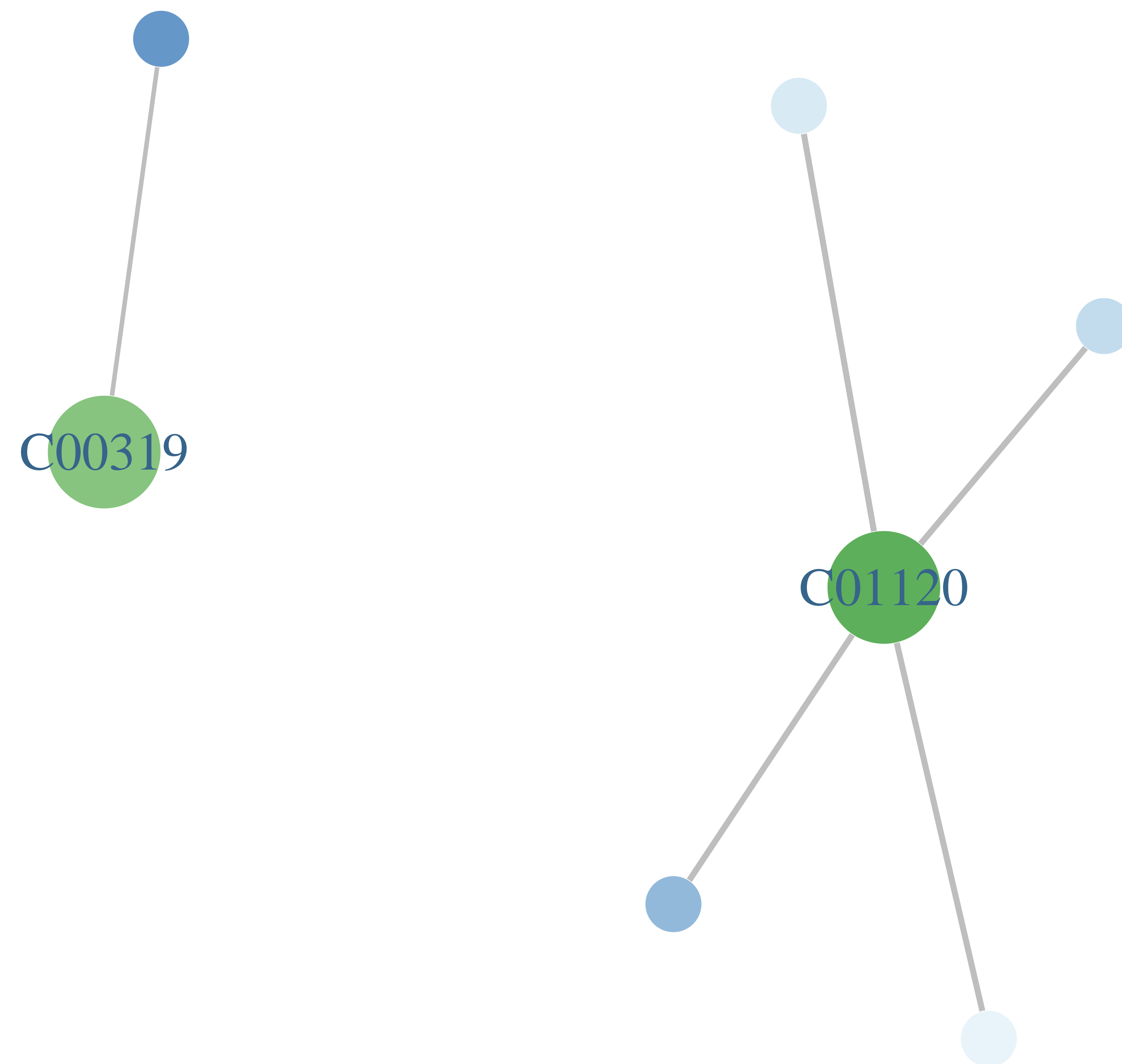
secondary bile acid biosynthesis ; p-value: 0.003



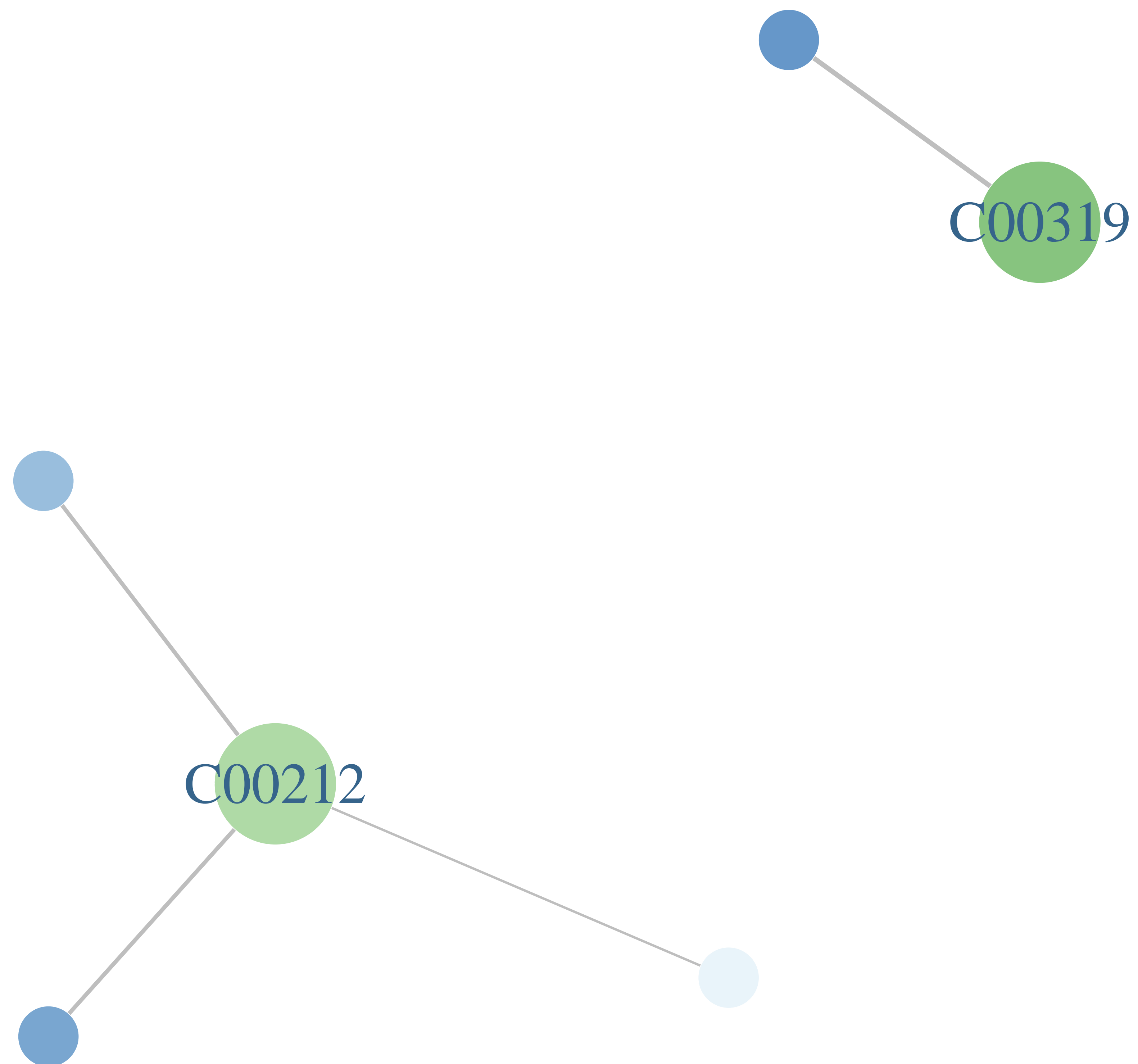
selenoamino acid metabolism ; p-value: 0.038



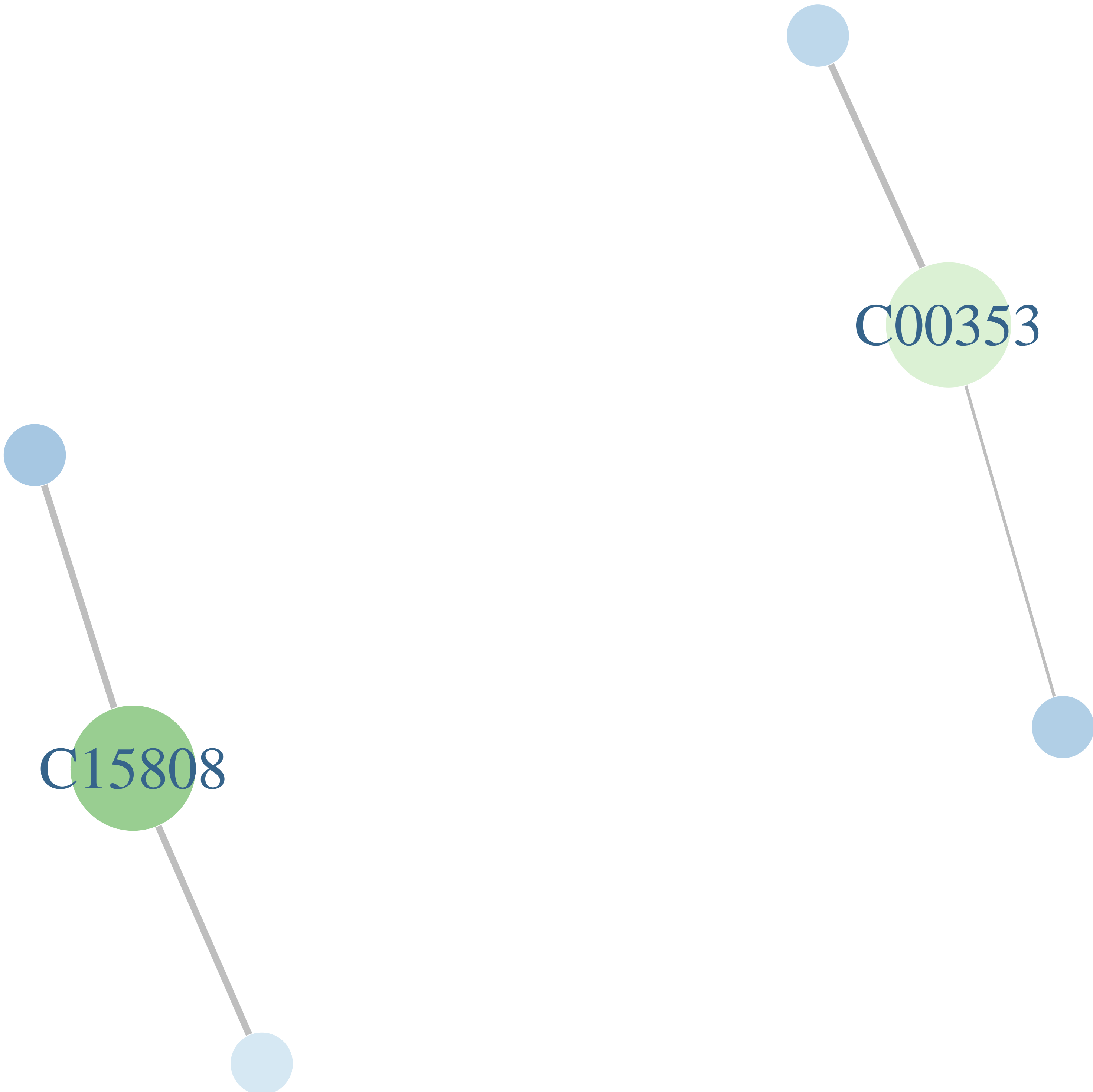
sphingolipid metabolism ; p-value: 0.235



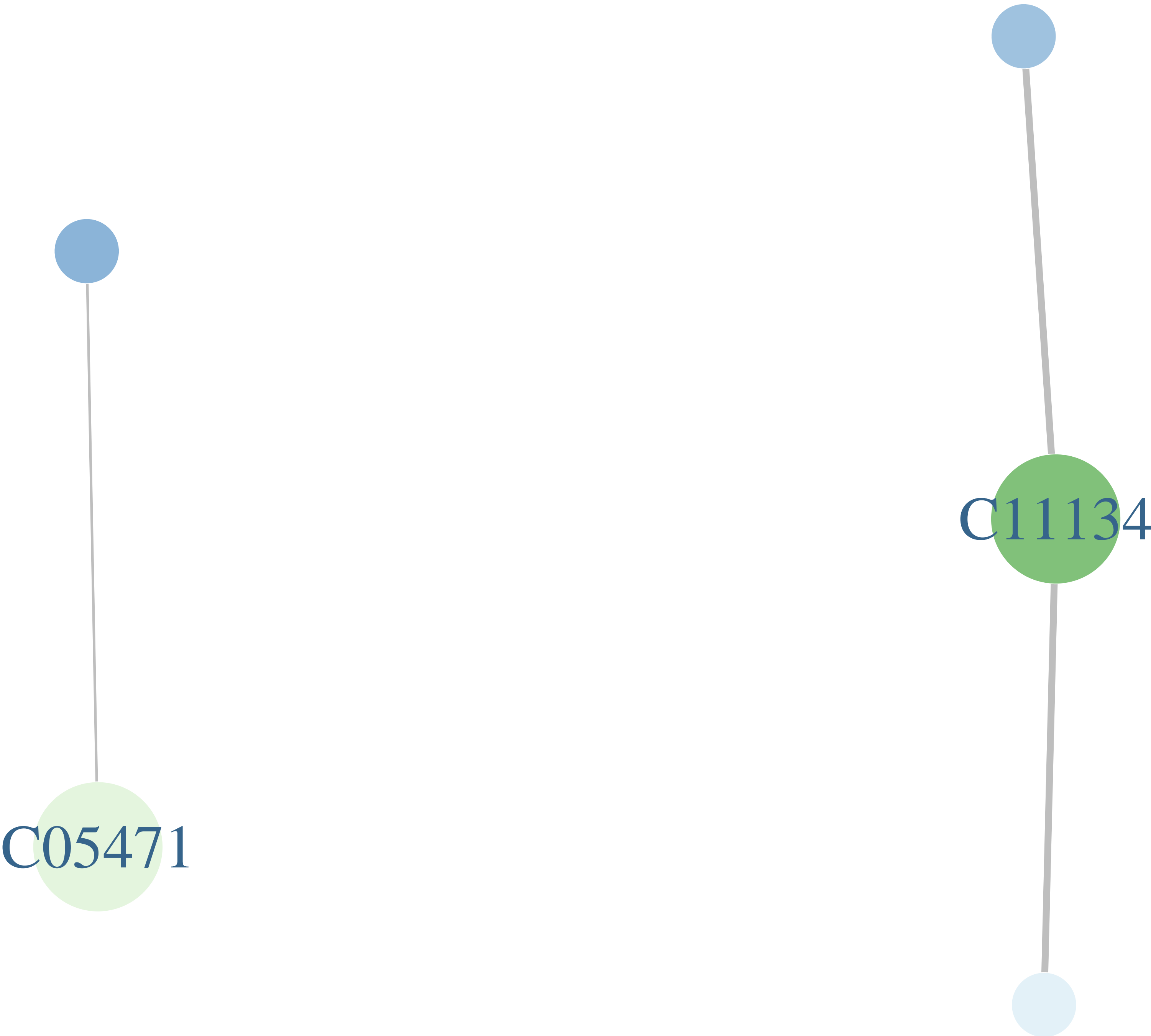
sphingolipid signaling pathway ; p-value: 0.081



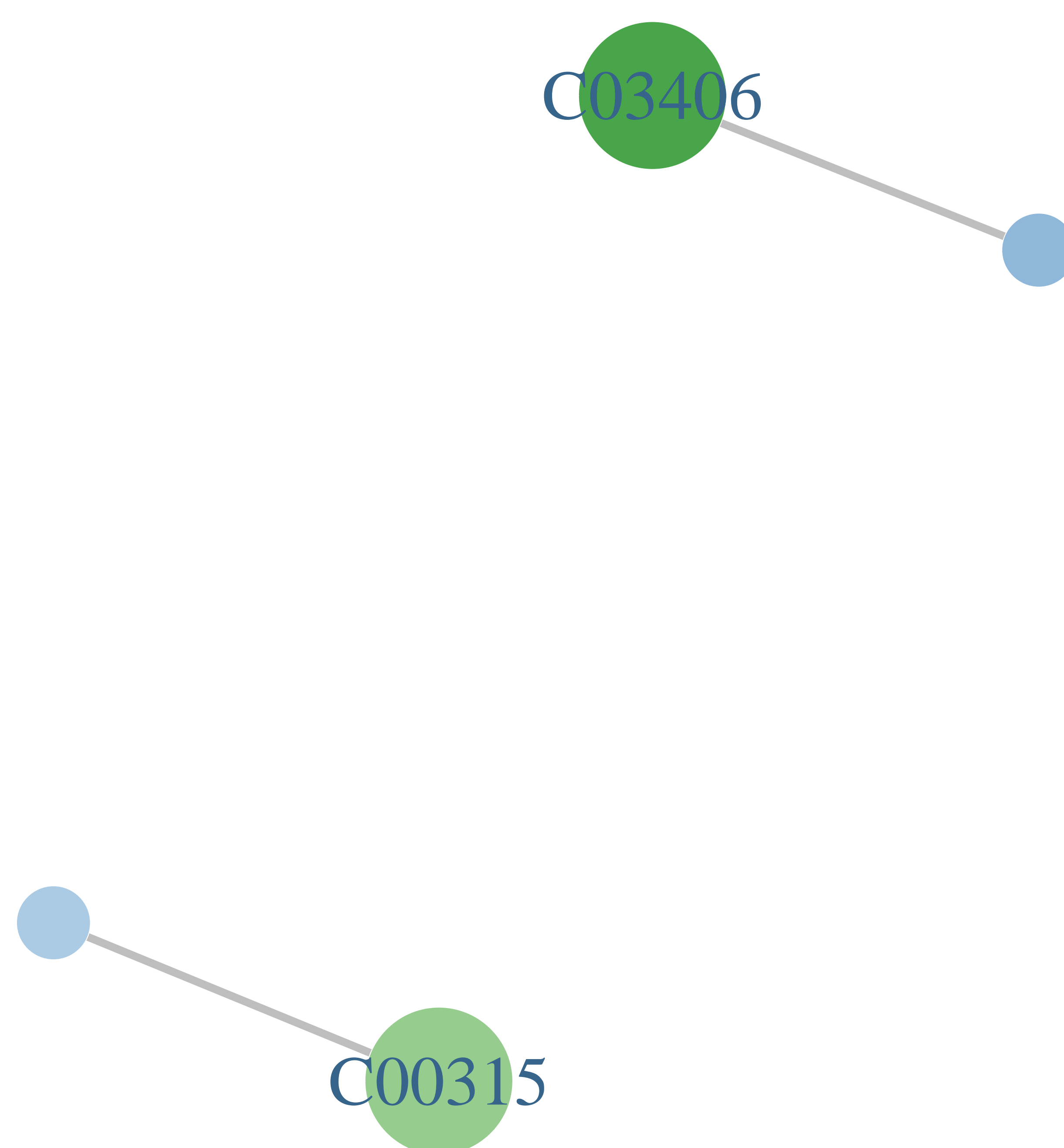
squalene and cholesterol biosynthesis ; p-value: 0.355



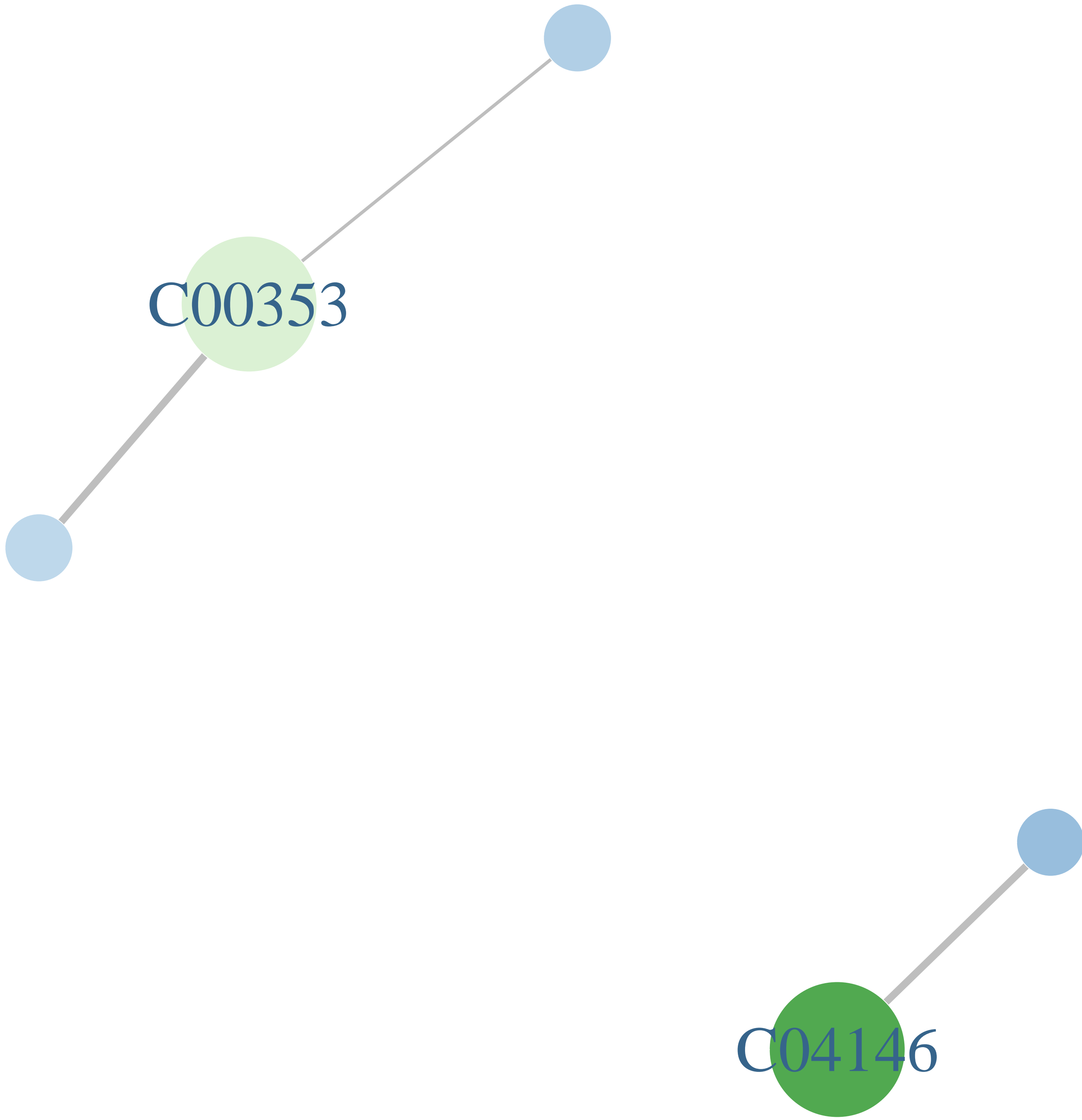
steroid hormone biosynthesis ; p-value: 0.795



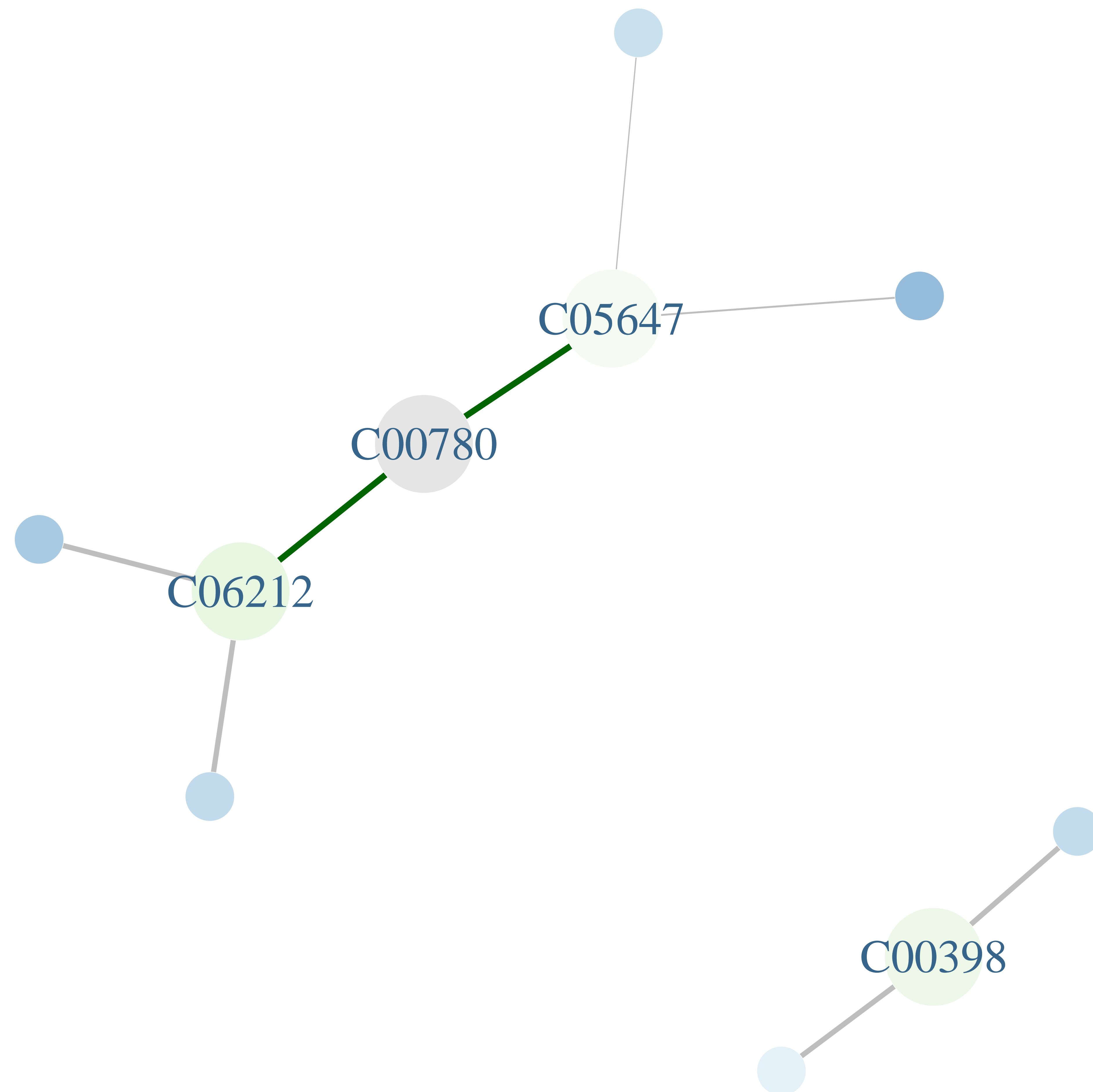
arginine and proline metabolism ; p-value: 0.469



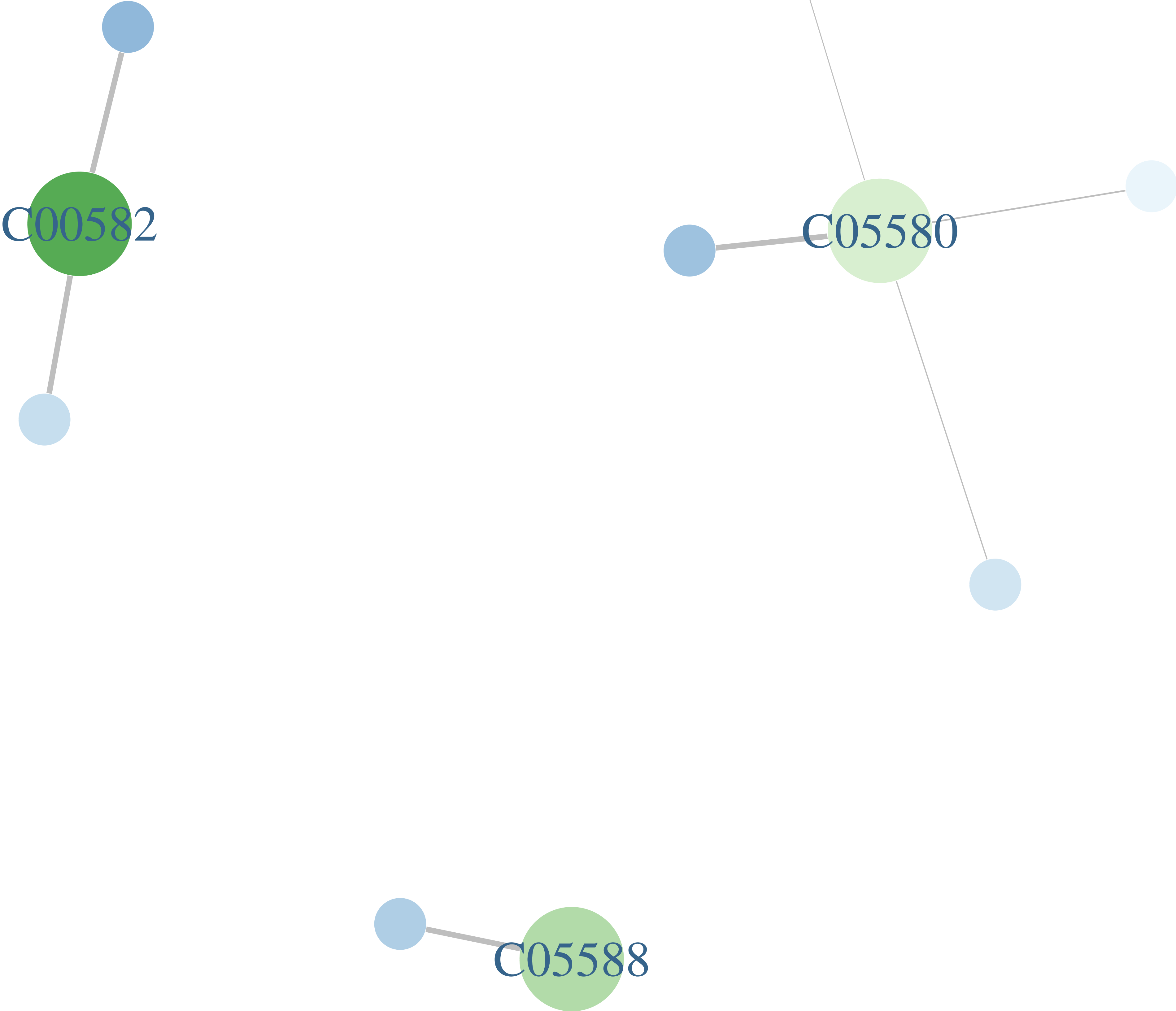
terpenoid backbone biosynthesis ; p-value: 0.133



tryptophan metabolism ; p-value: 0.324



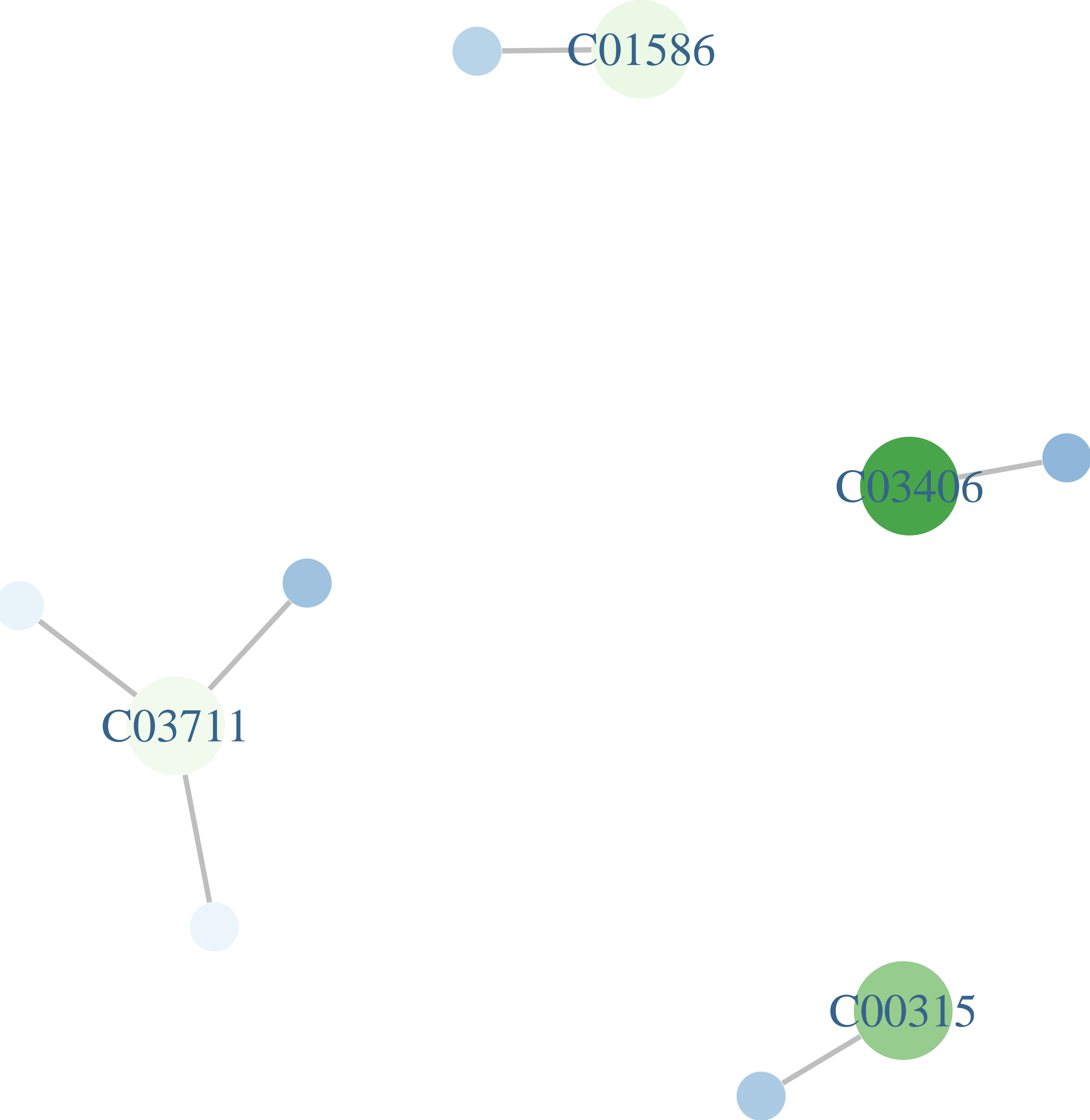
tyrosine metabolism ; p-value: 0.435



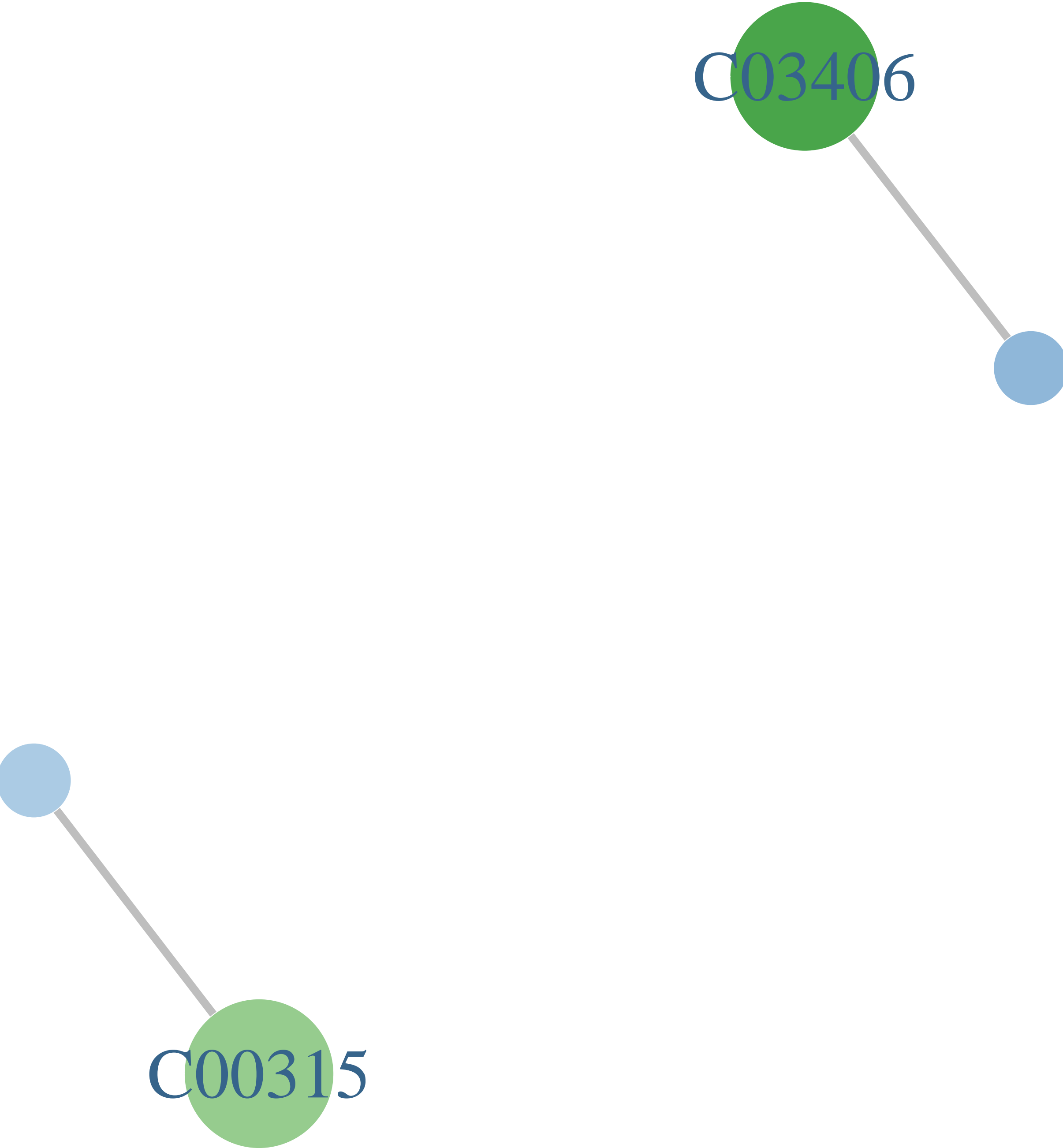
ubiquinone and other terpenoid–quinone biosynthesis ; p-value: 0.19



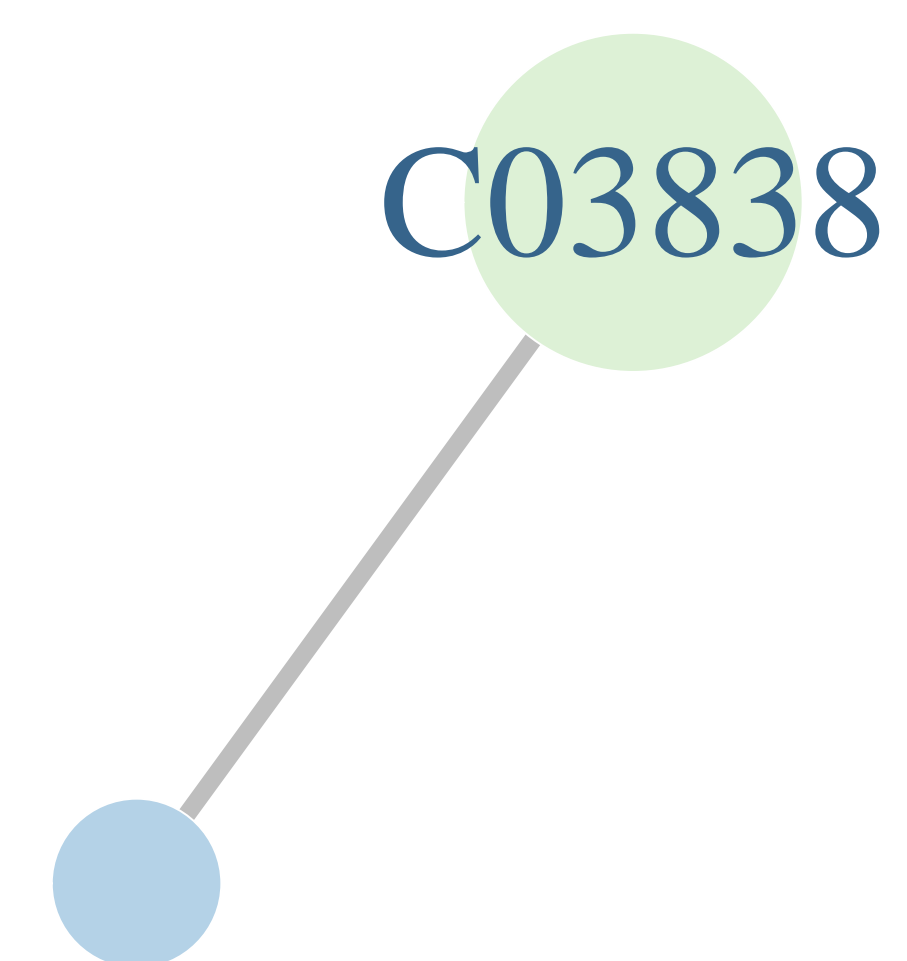
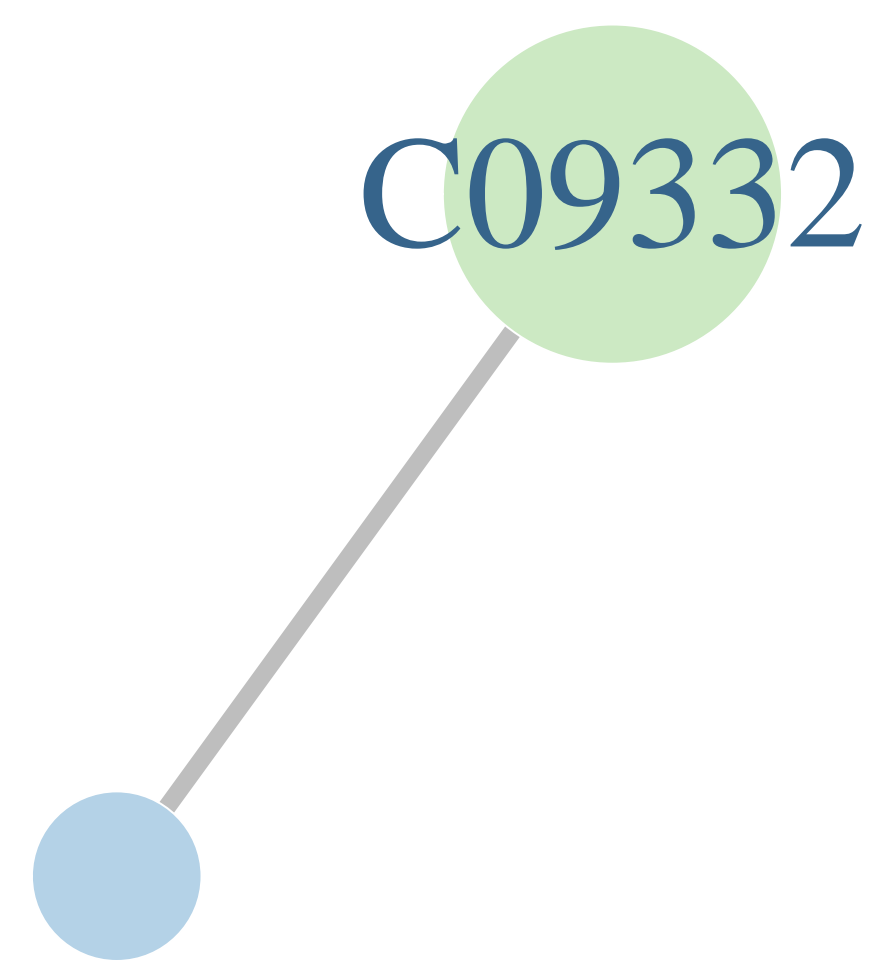
urea cycle/amino group metabolism ; p-value: 0.041



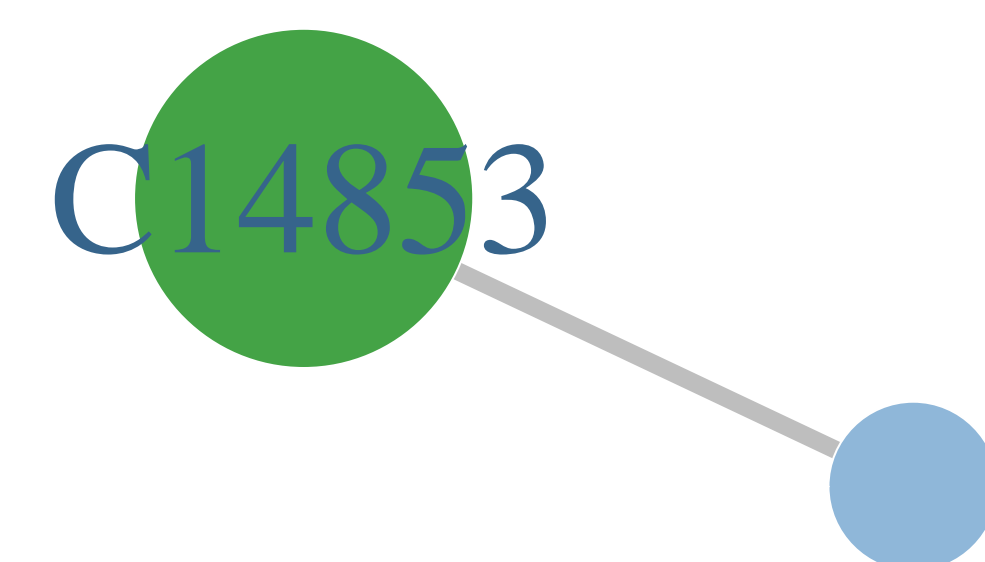
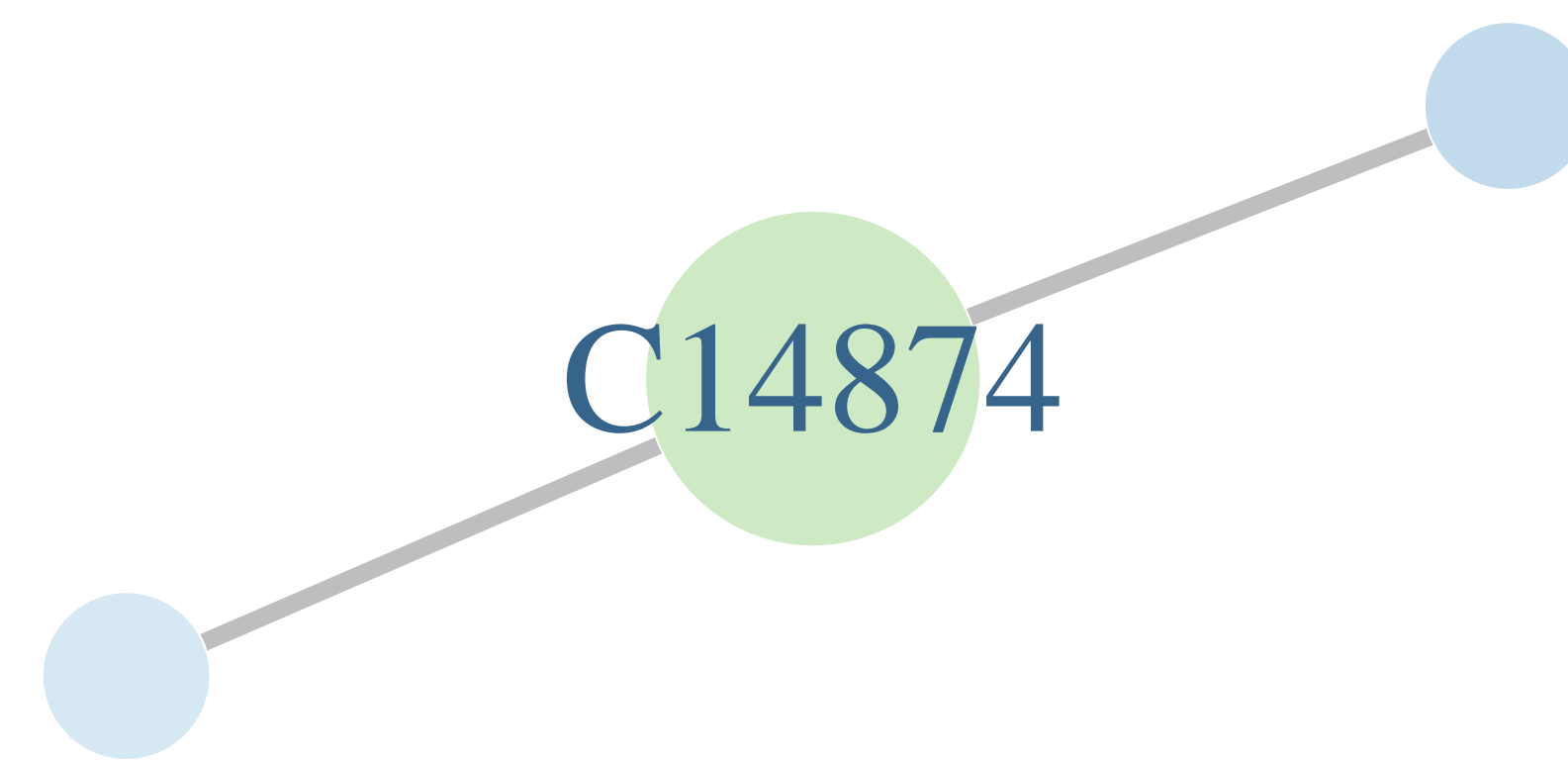
aspartate and asparagine metabolism ; p-value: 0.521



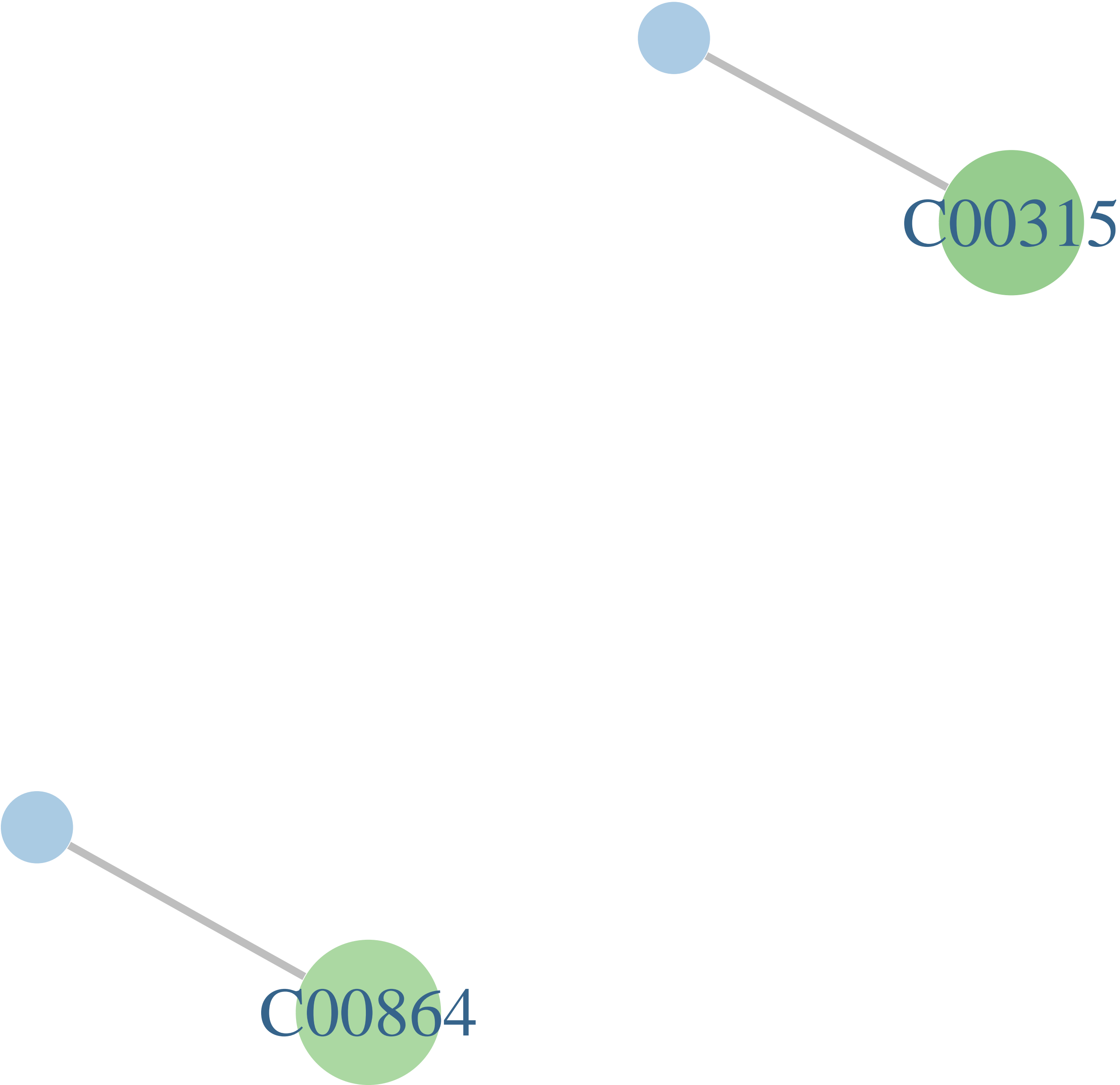
vitamin b9 (folate) metabolism ; p-value: 0.093



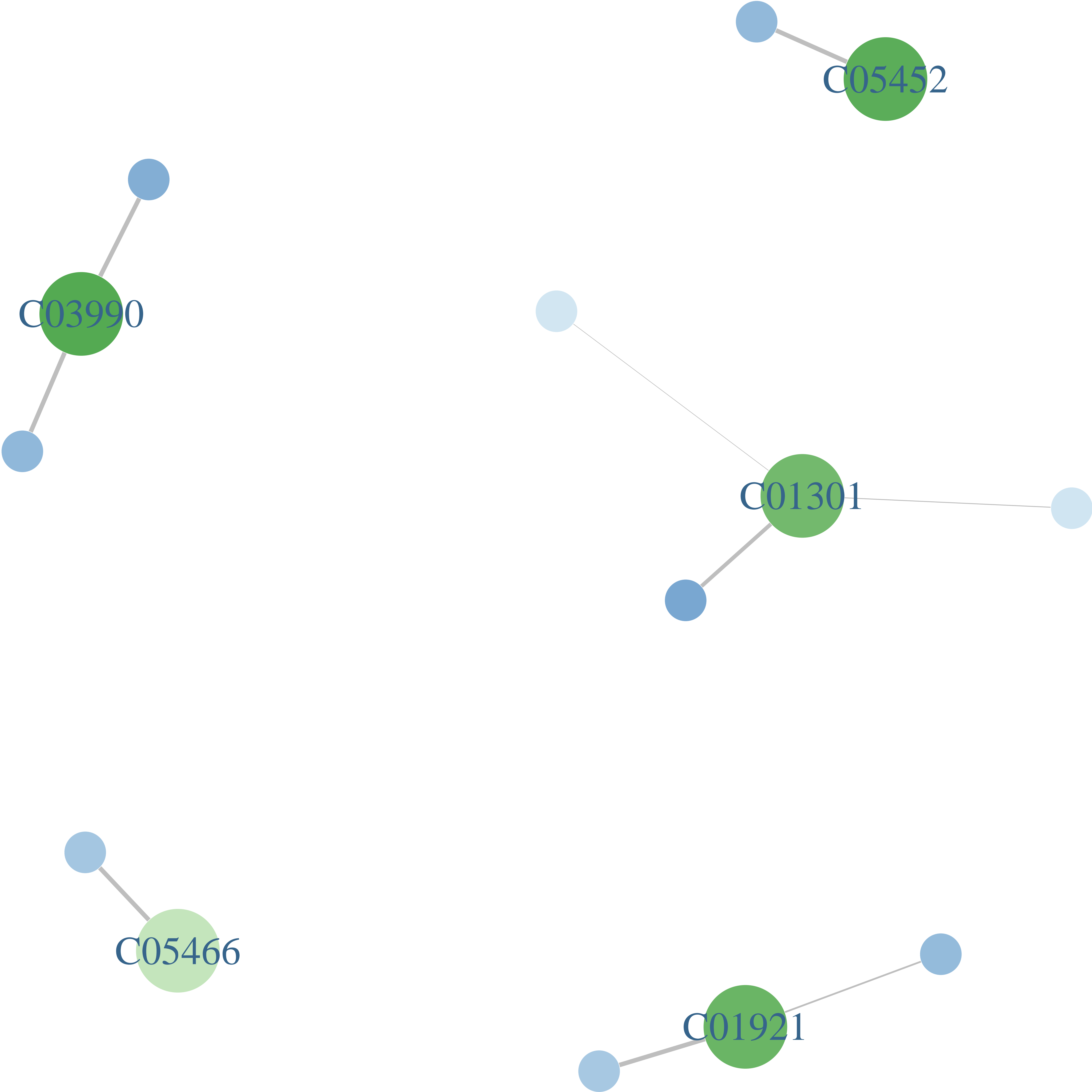
xenobiotics metabolism ; p-value: 0.258



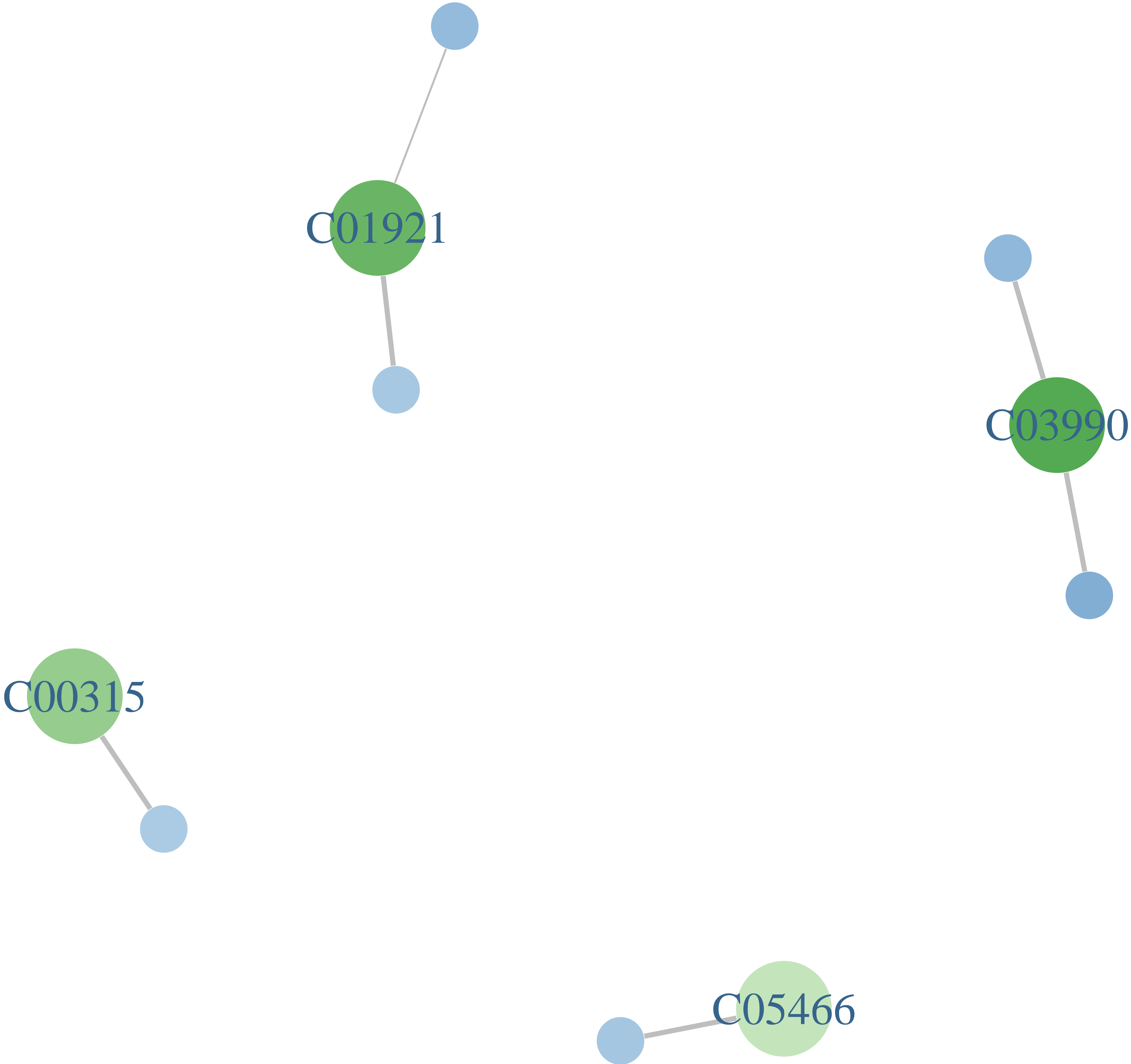
beta-alanine metabolism ; p-value: 0.265



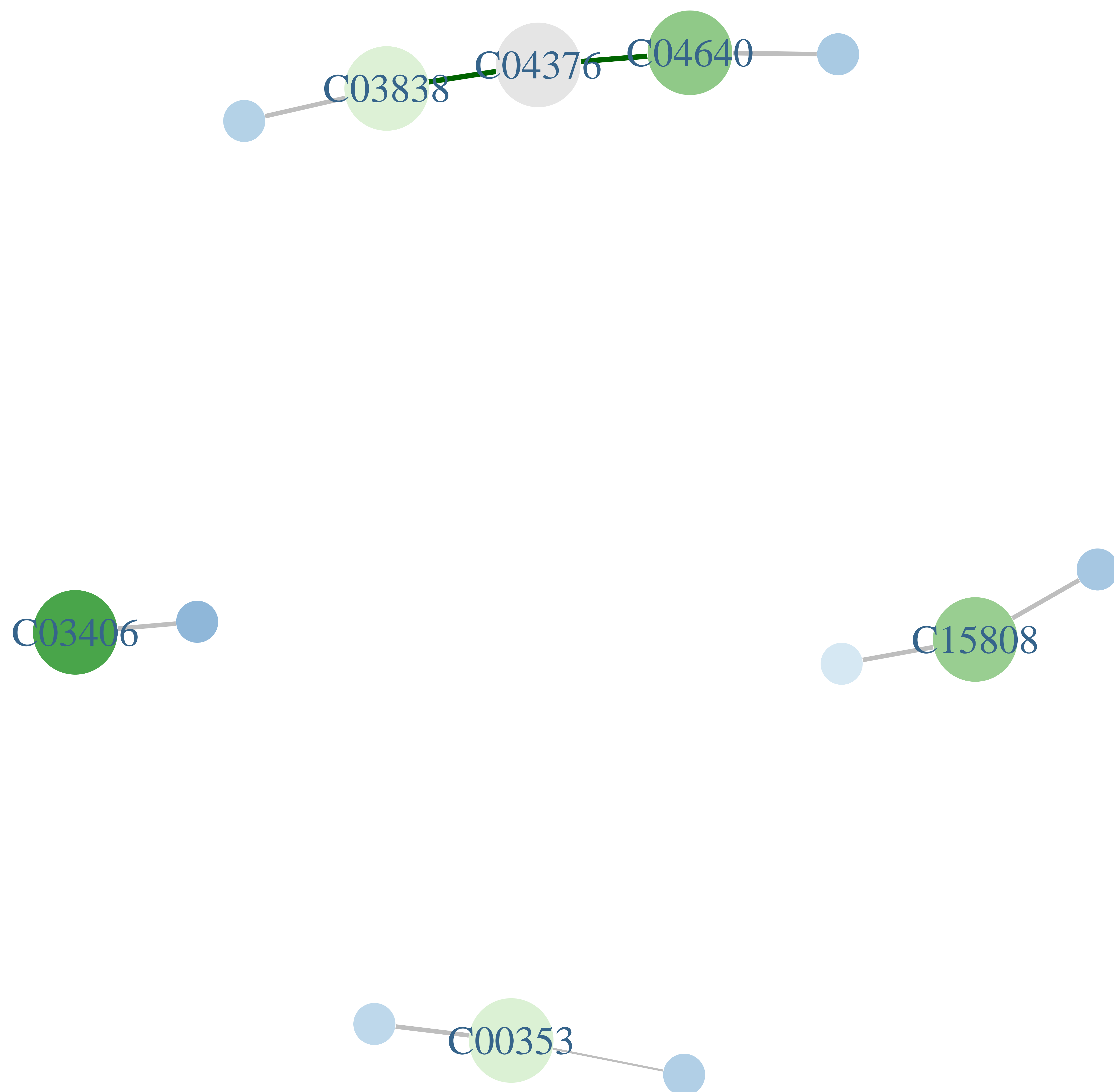
bile acid biosynthesis ; p-value: 0.035



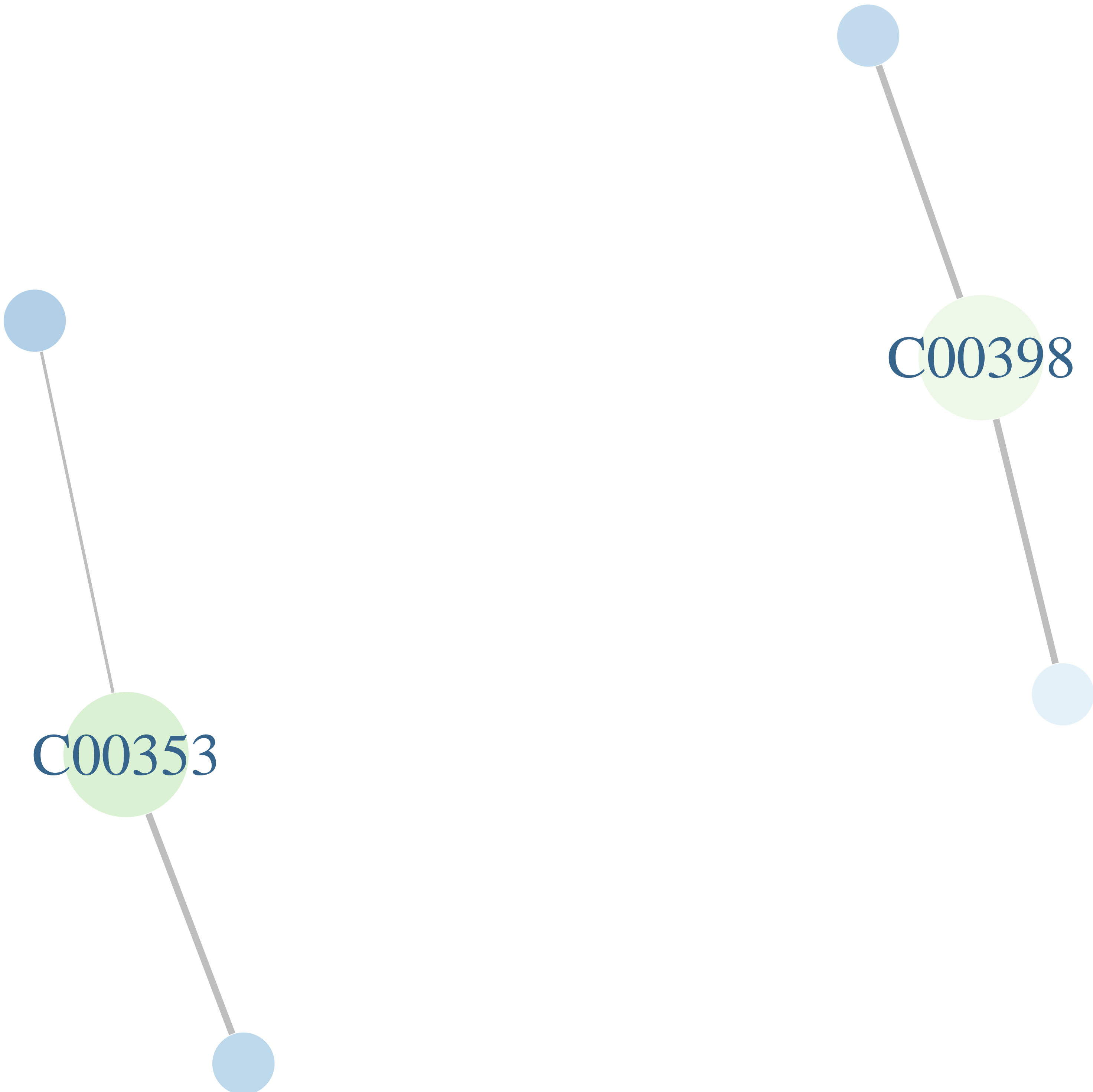
bile secretion ; p-value: 0.053



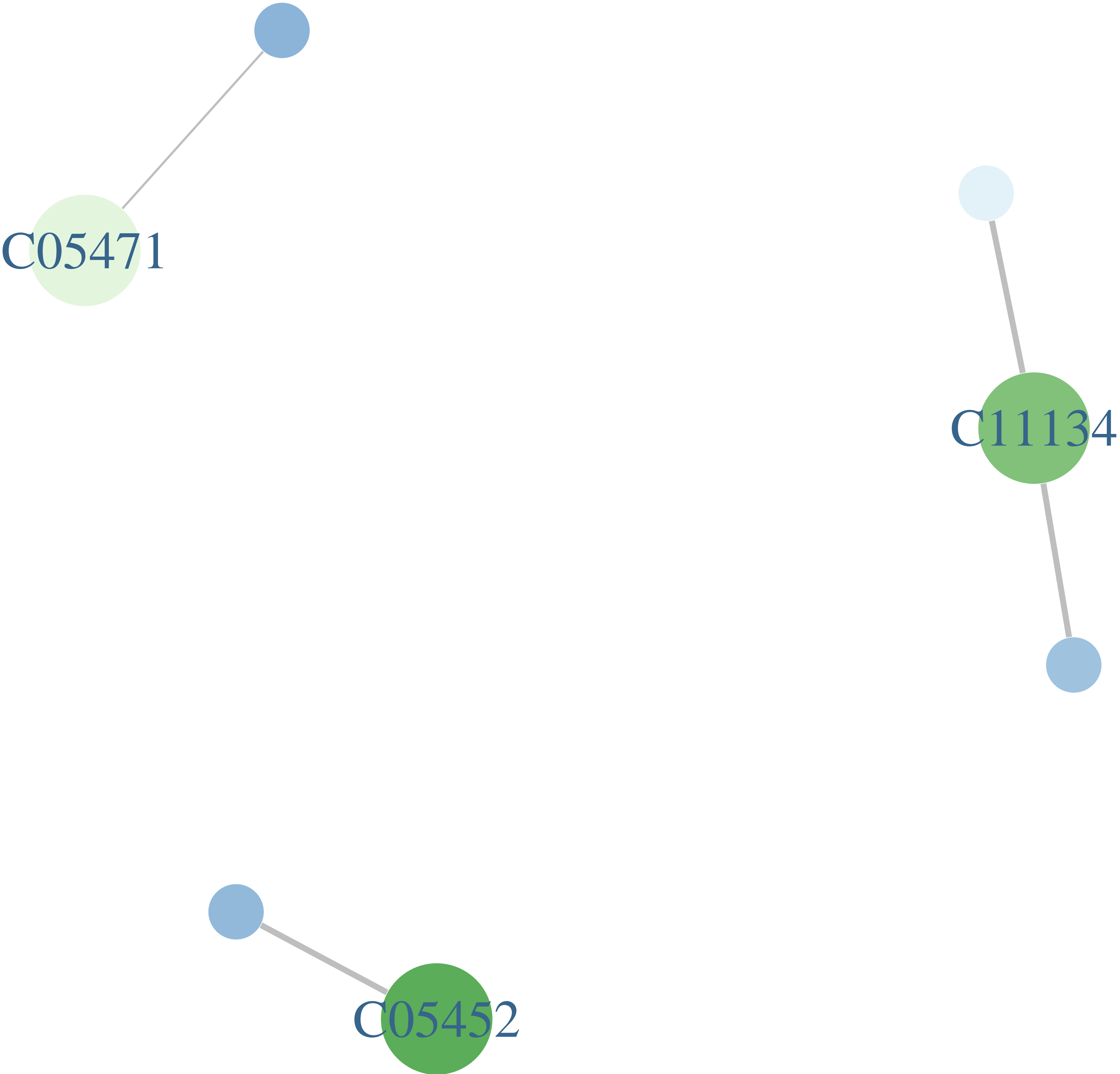
biosynthesis of antibiotics ; p-value: 0.667



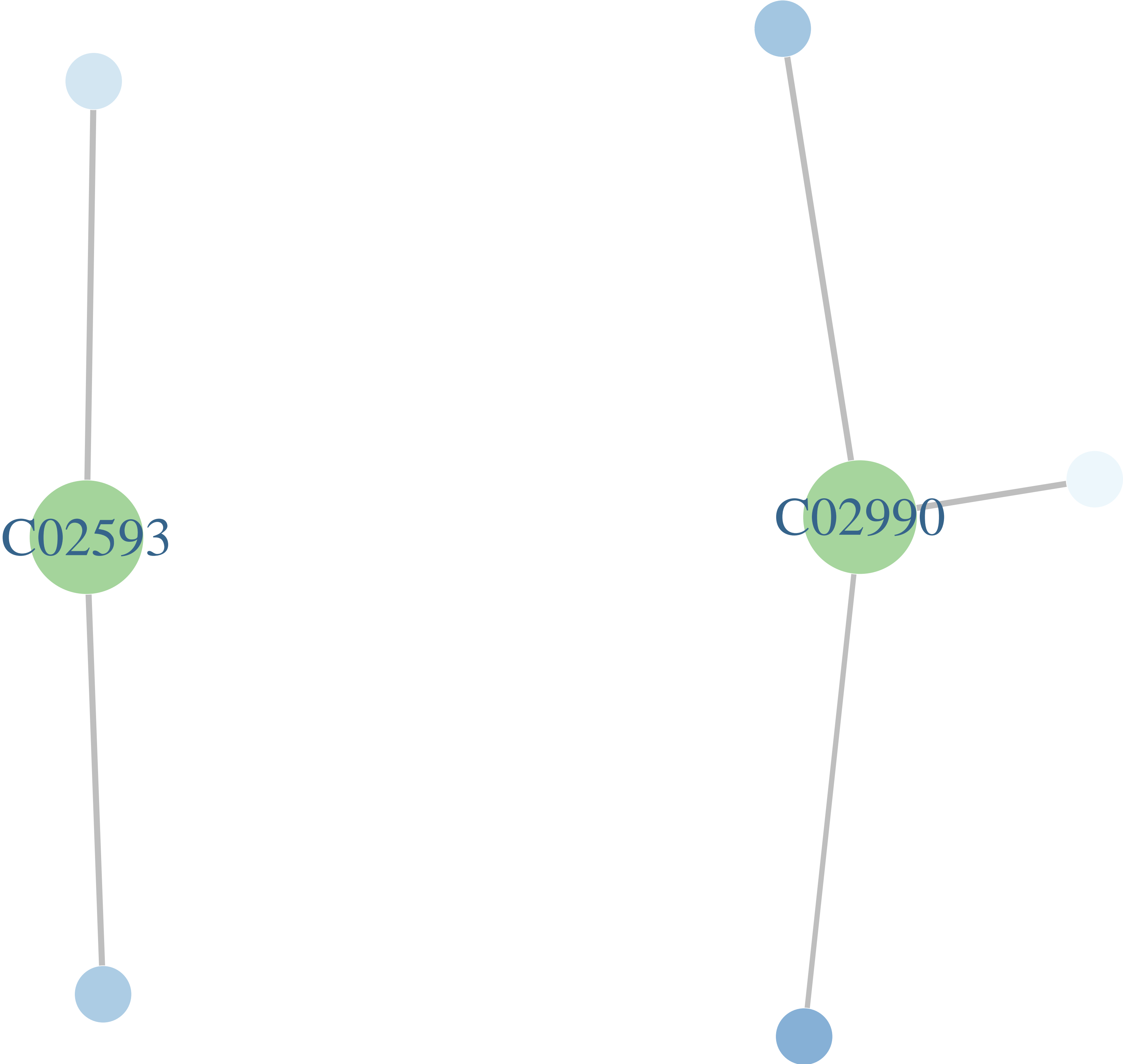
biosynthesis of plant secondary metabolites ; p-value: 0.781



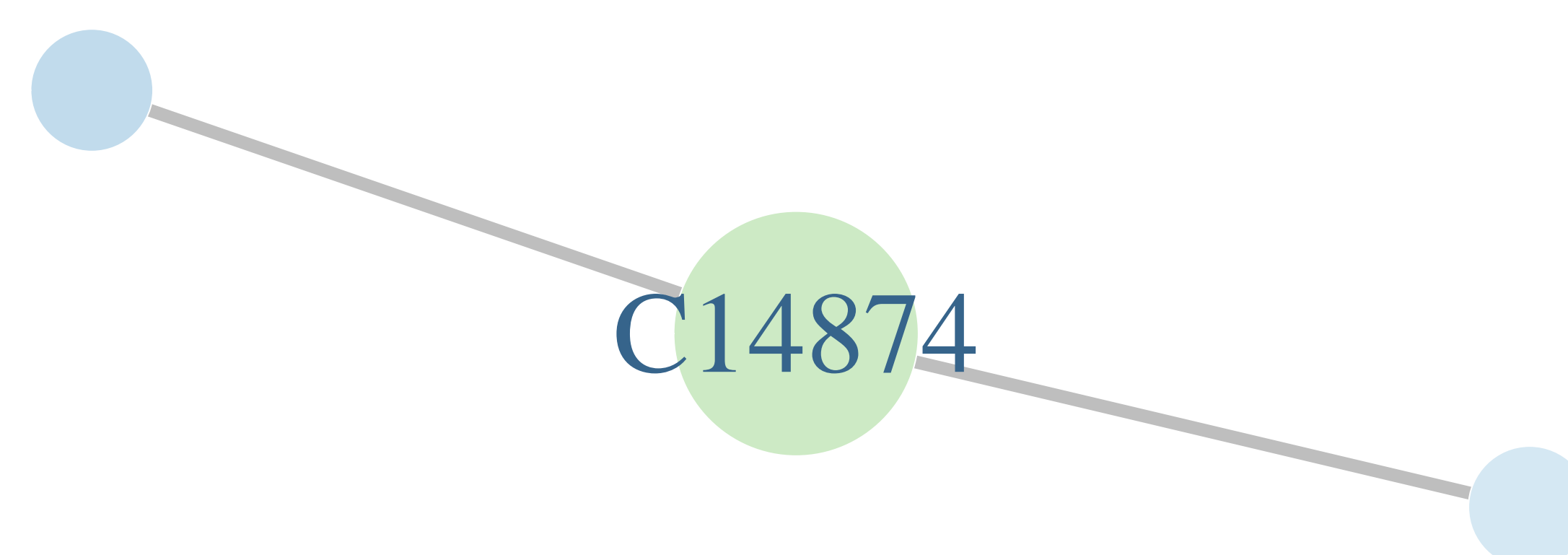
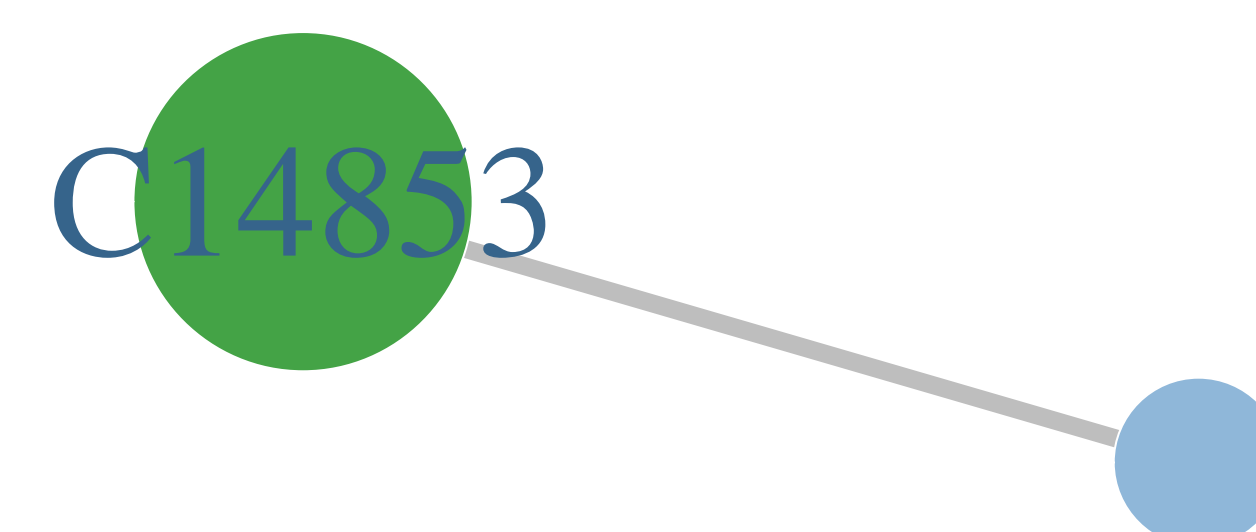
c21-steroid hormone biosynthesis and metabolism ; p-value: 0.446



carnitine shuttle ; p-value: 0.106

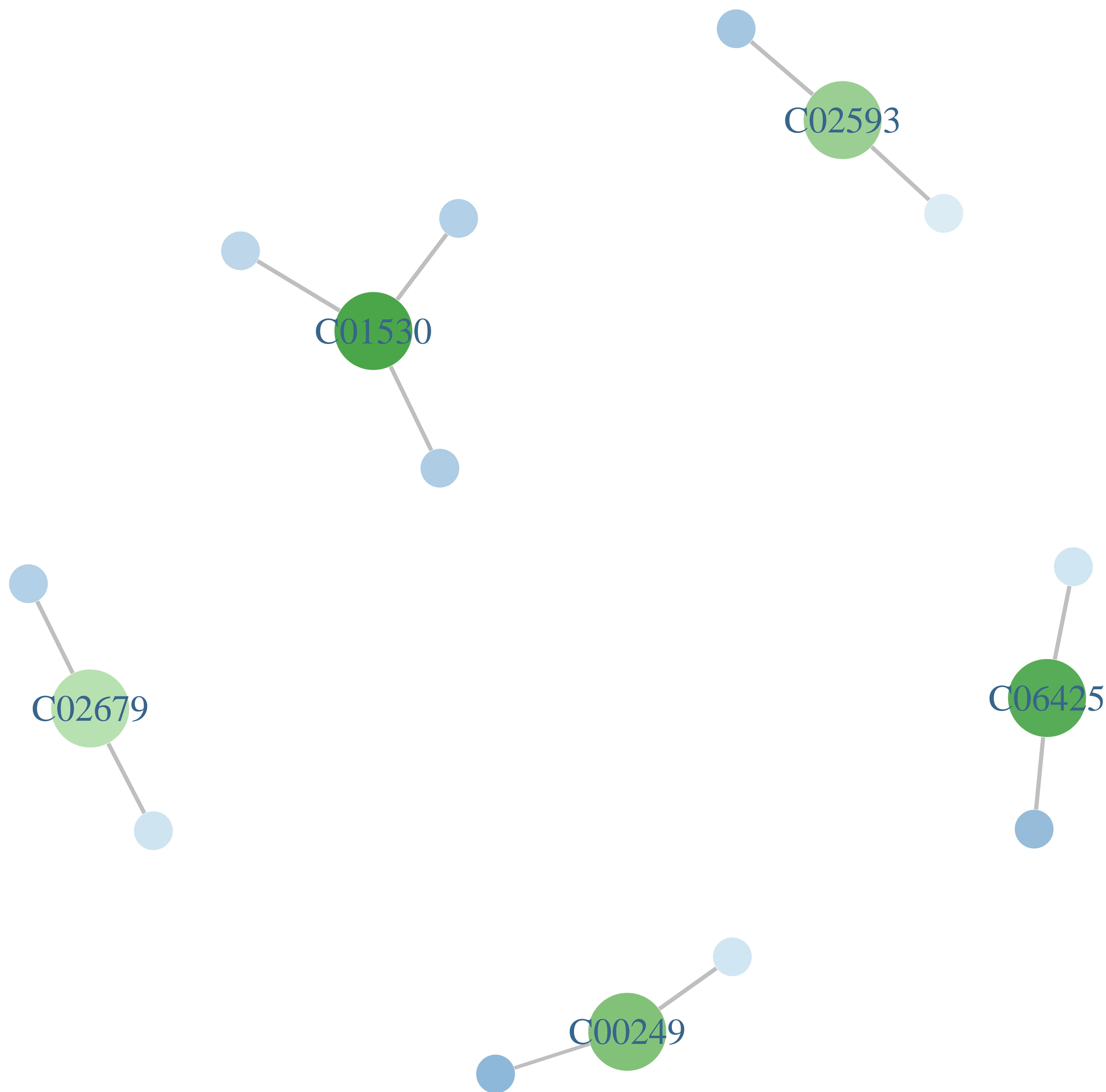


chemical carcinogenesis ; p-value: 0.34

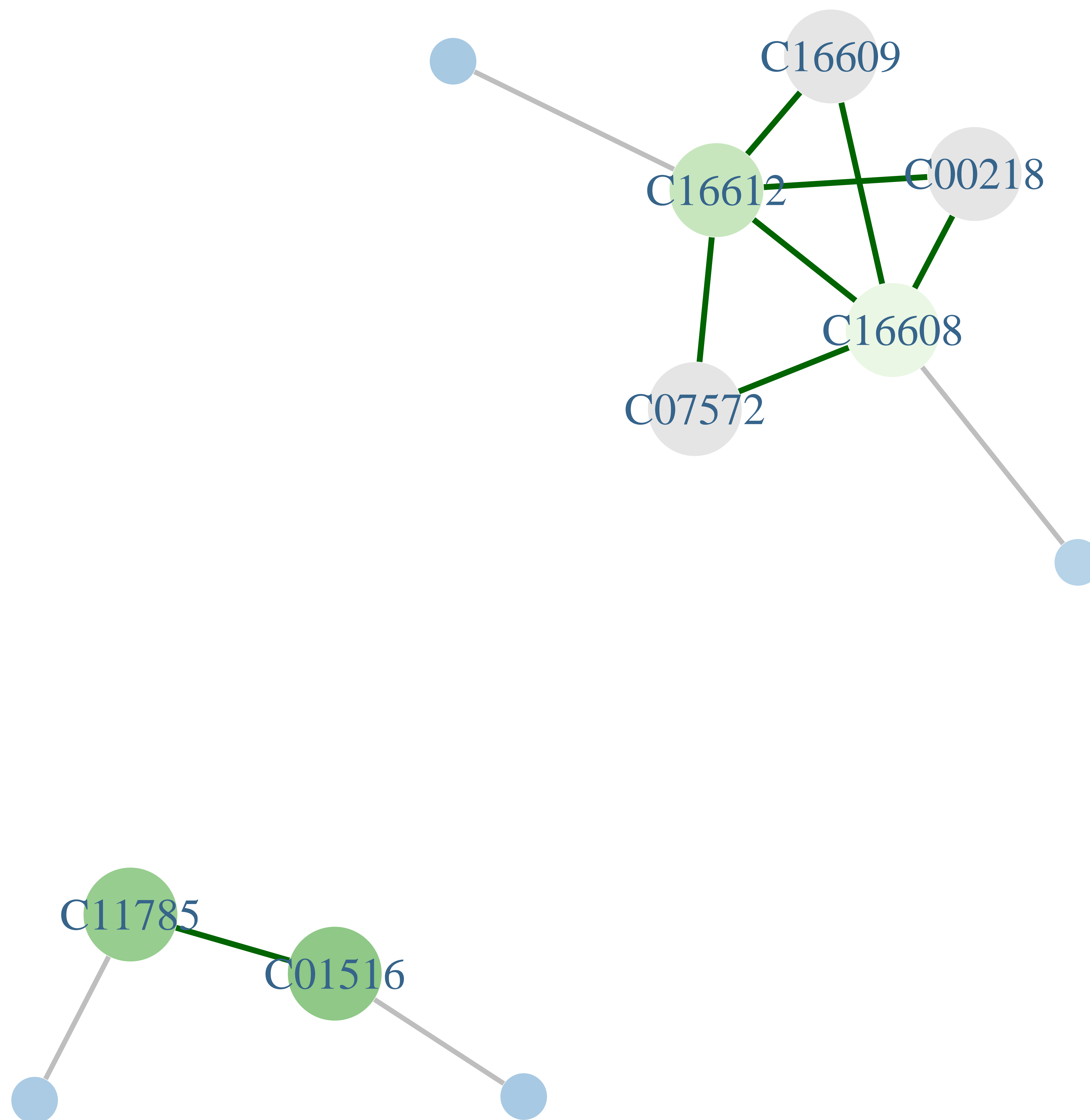


Mouse Brain Metabolomics Data
Hippocampus Week 16 v.s. Week 59
Pathway Plots

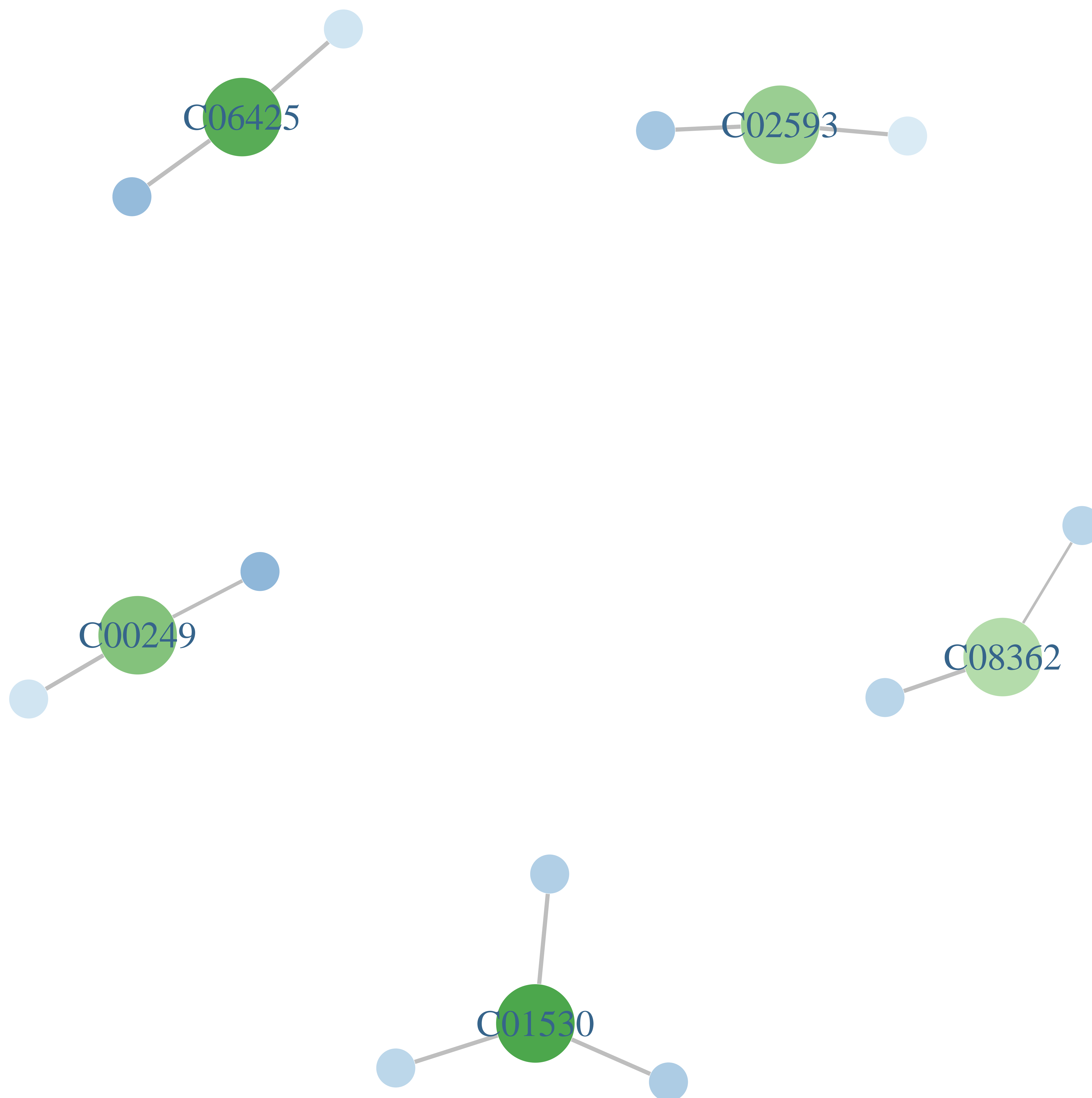
de novo fatty acid biosynthesis ; p-value: 0.003



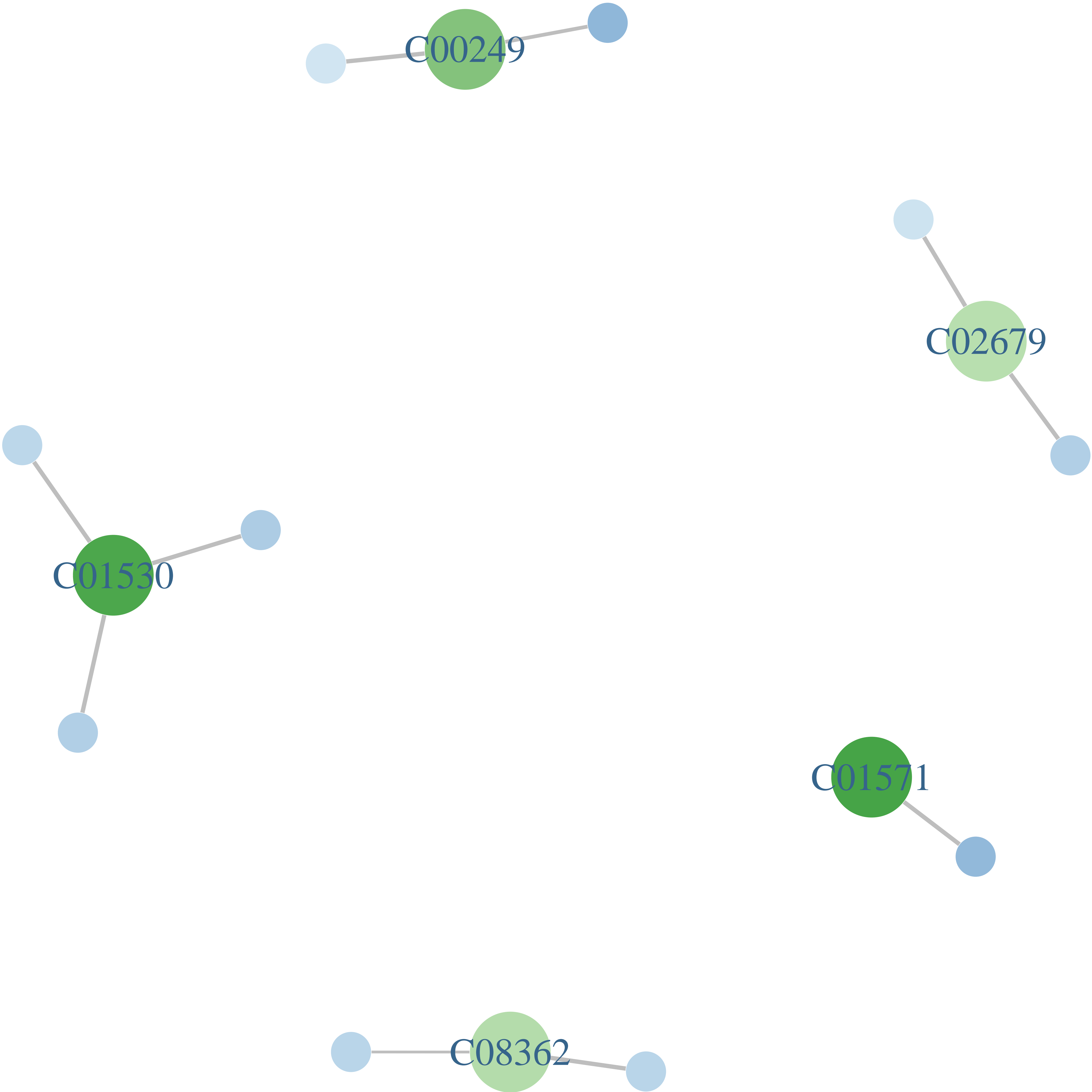
drug metabolism – cytochrome p450 ; p-value: 0.023



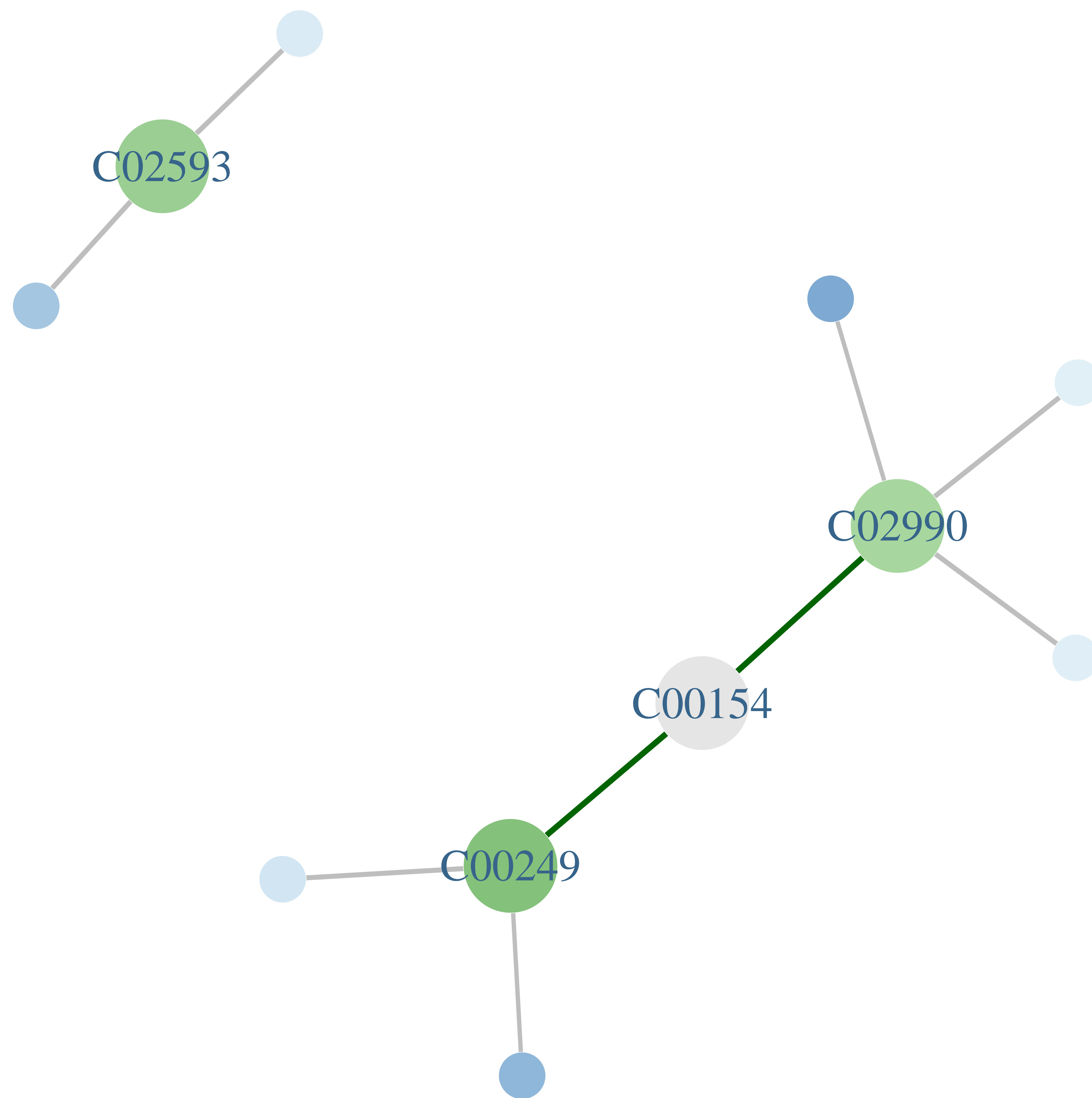
fatty acid activation ; p-value: 0.003



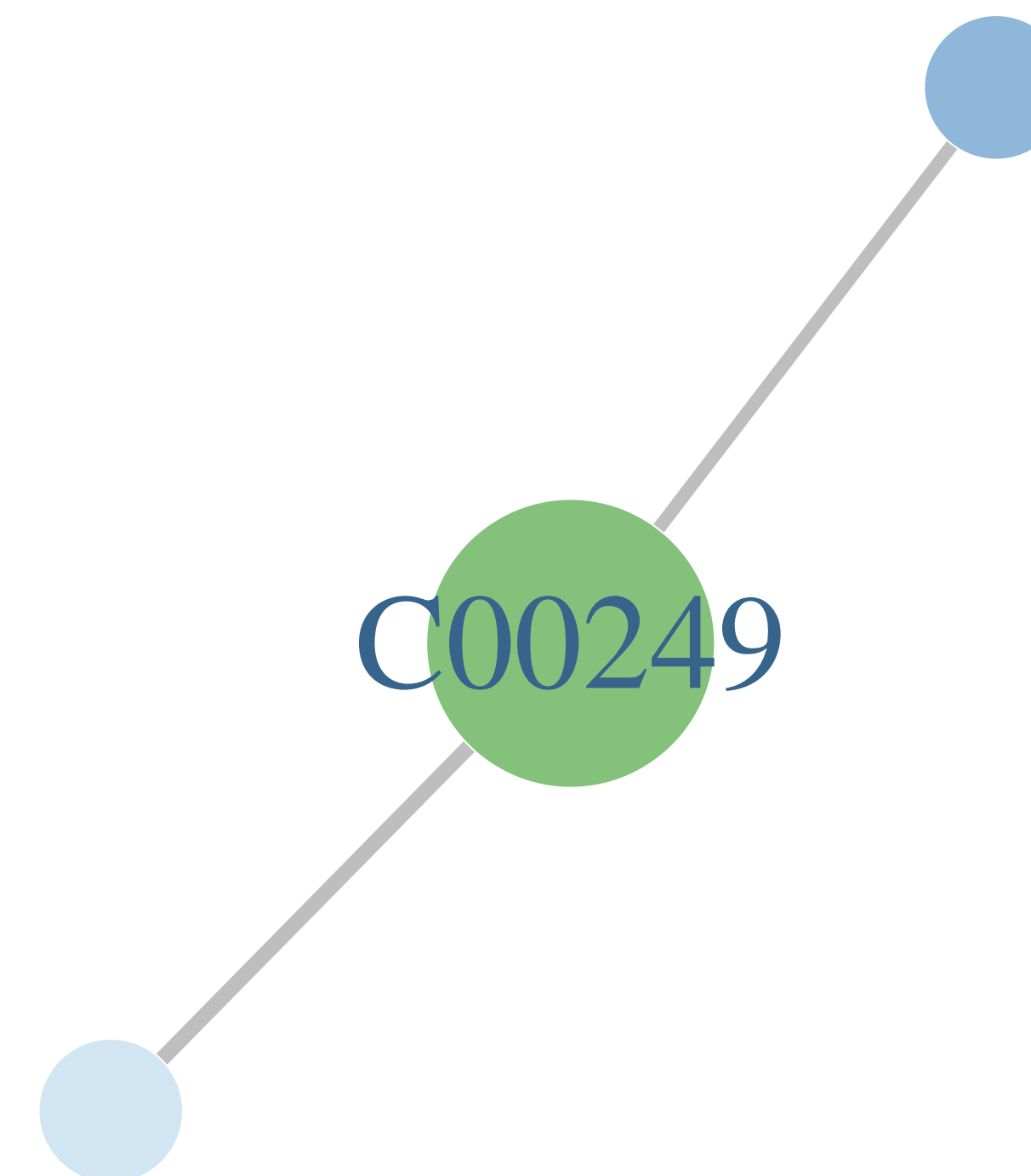
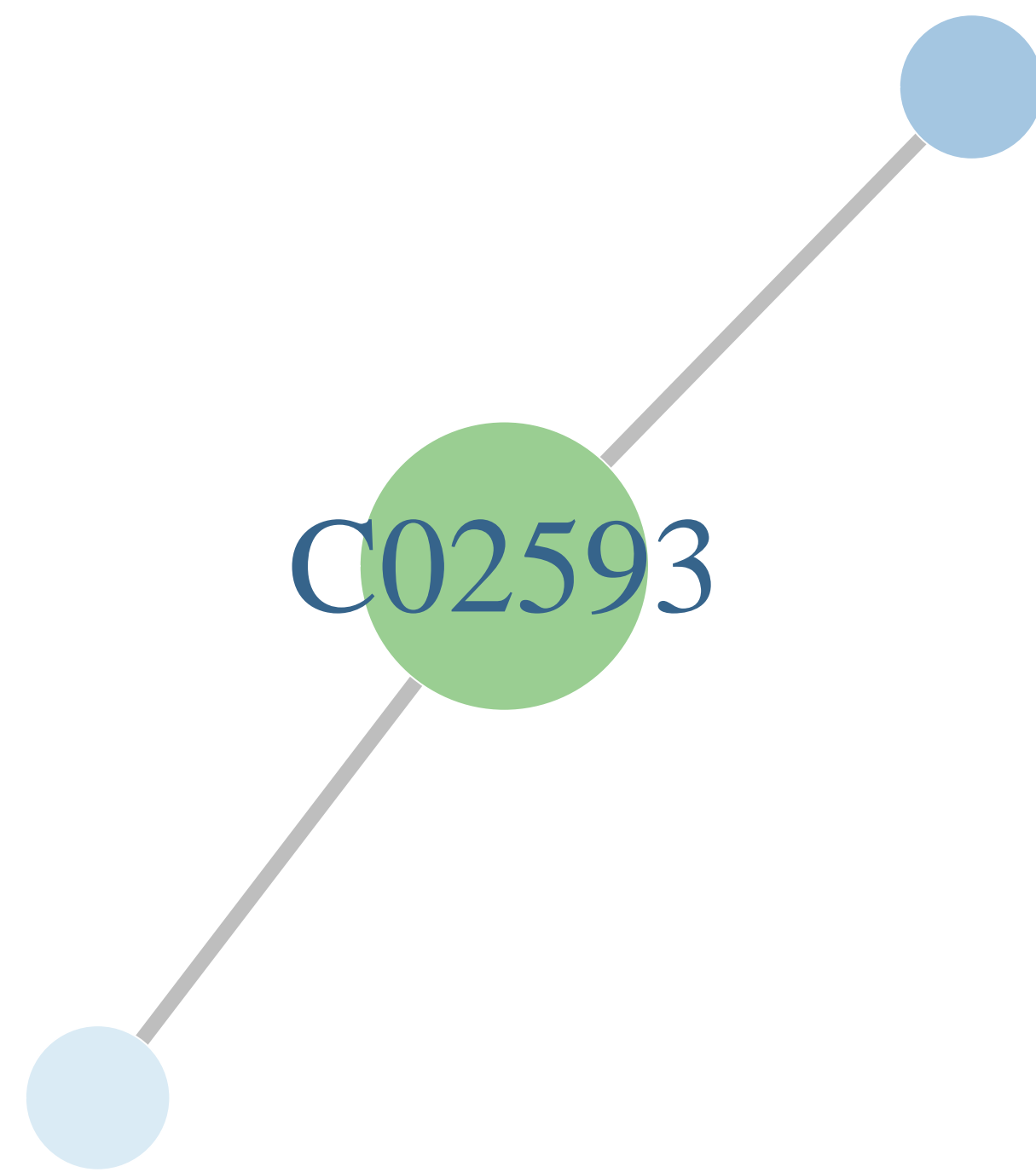
fatty acid biosynthesis ; p-value: 0



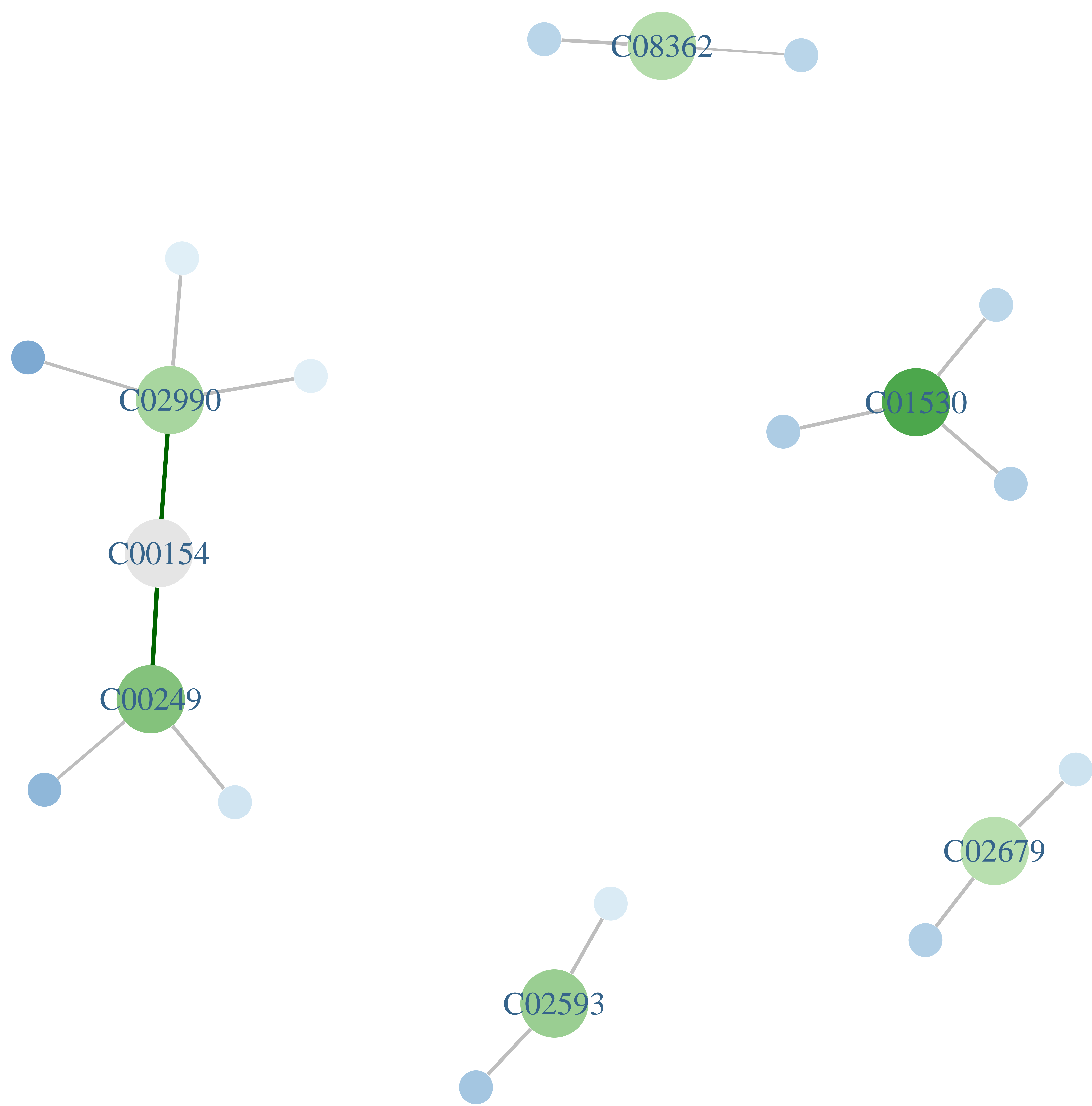
fatty acid degradation ; p-value: 0.166



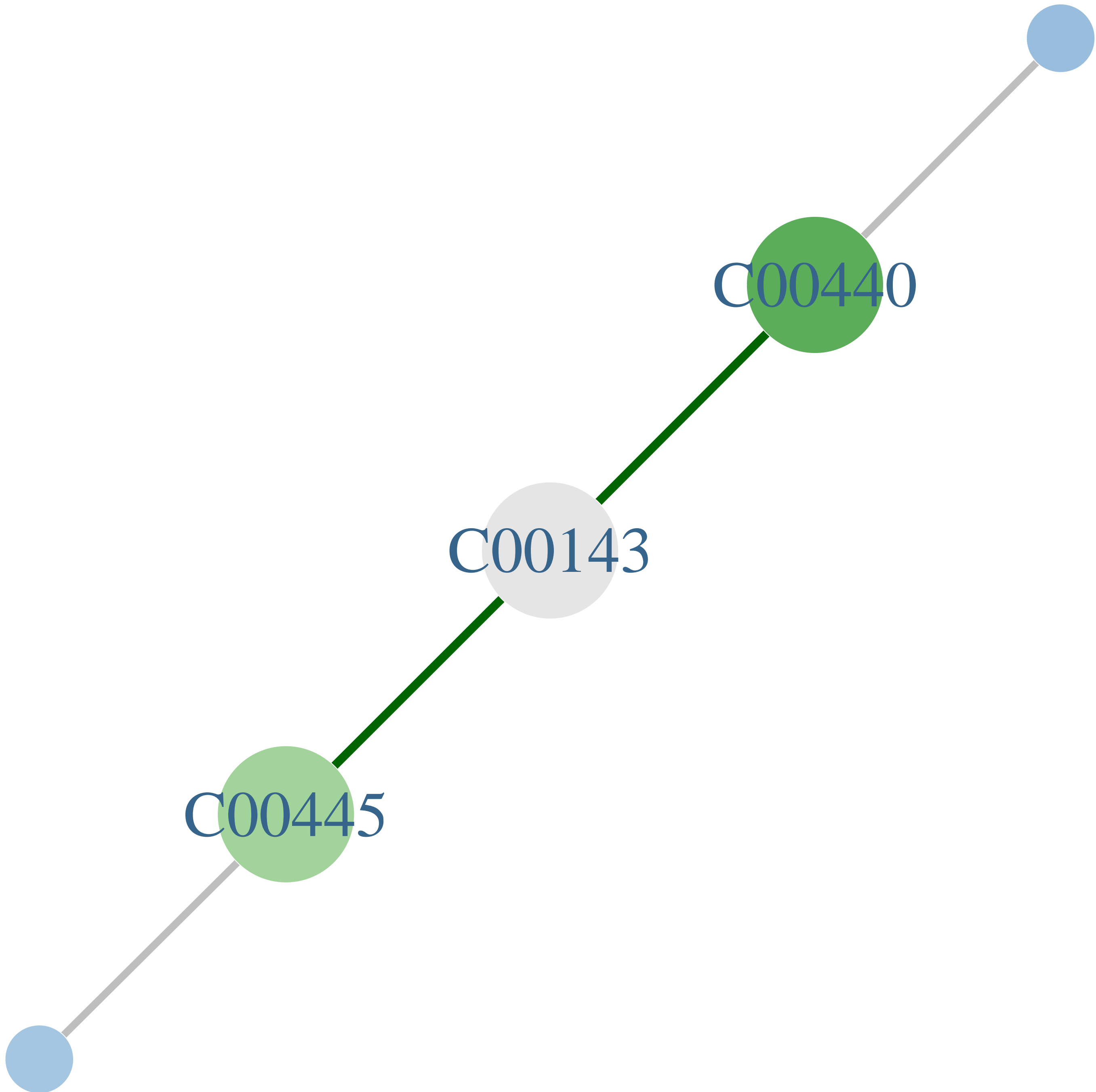
fatty acid elongation in mitochondria ; p-value: 0.308



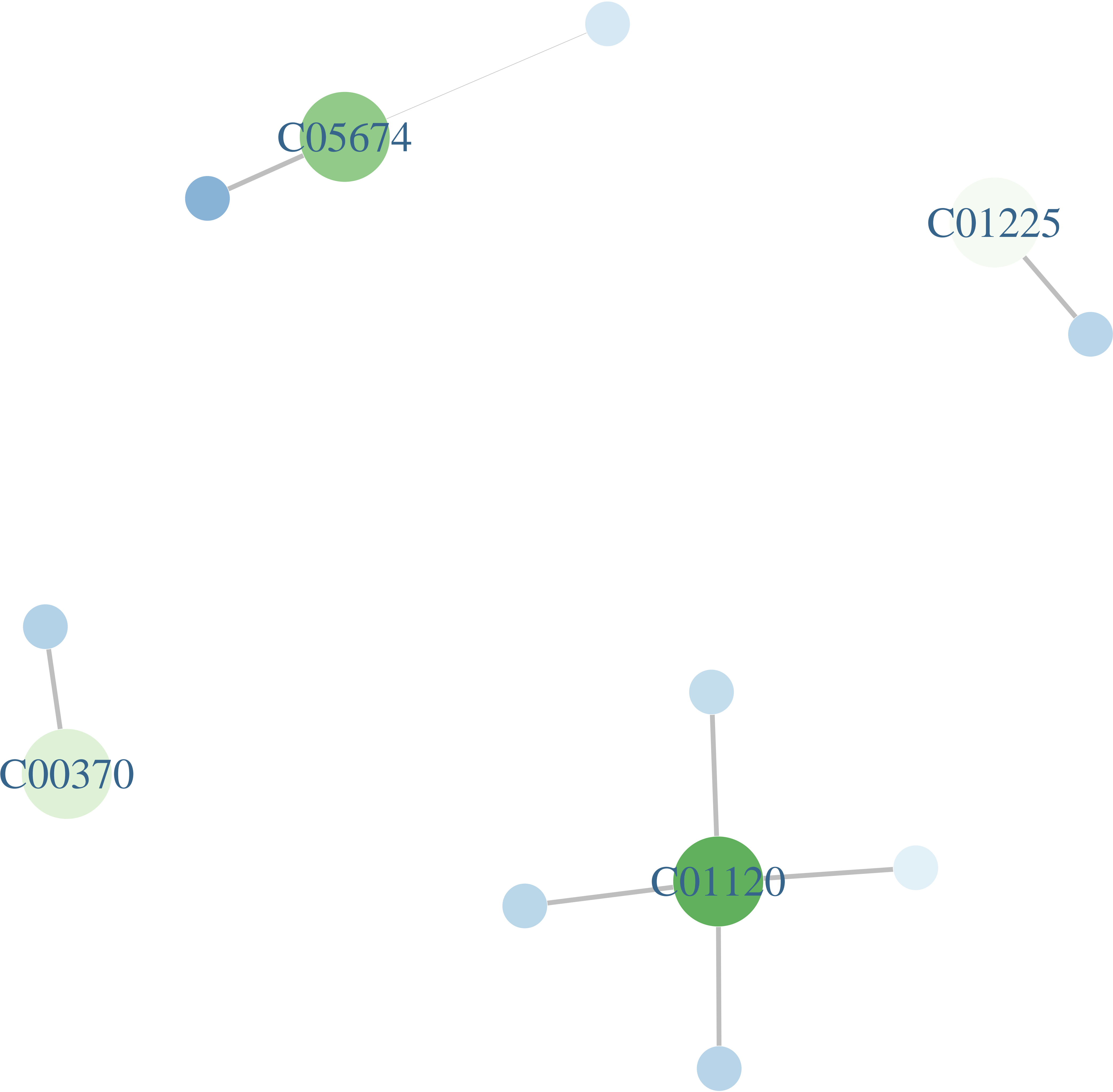
fatty acid metabolism ; p-value: 0.03



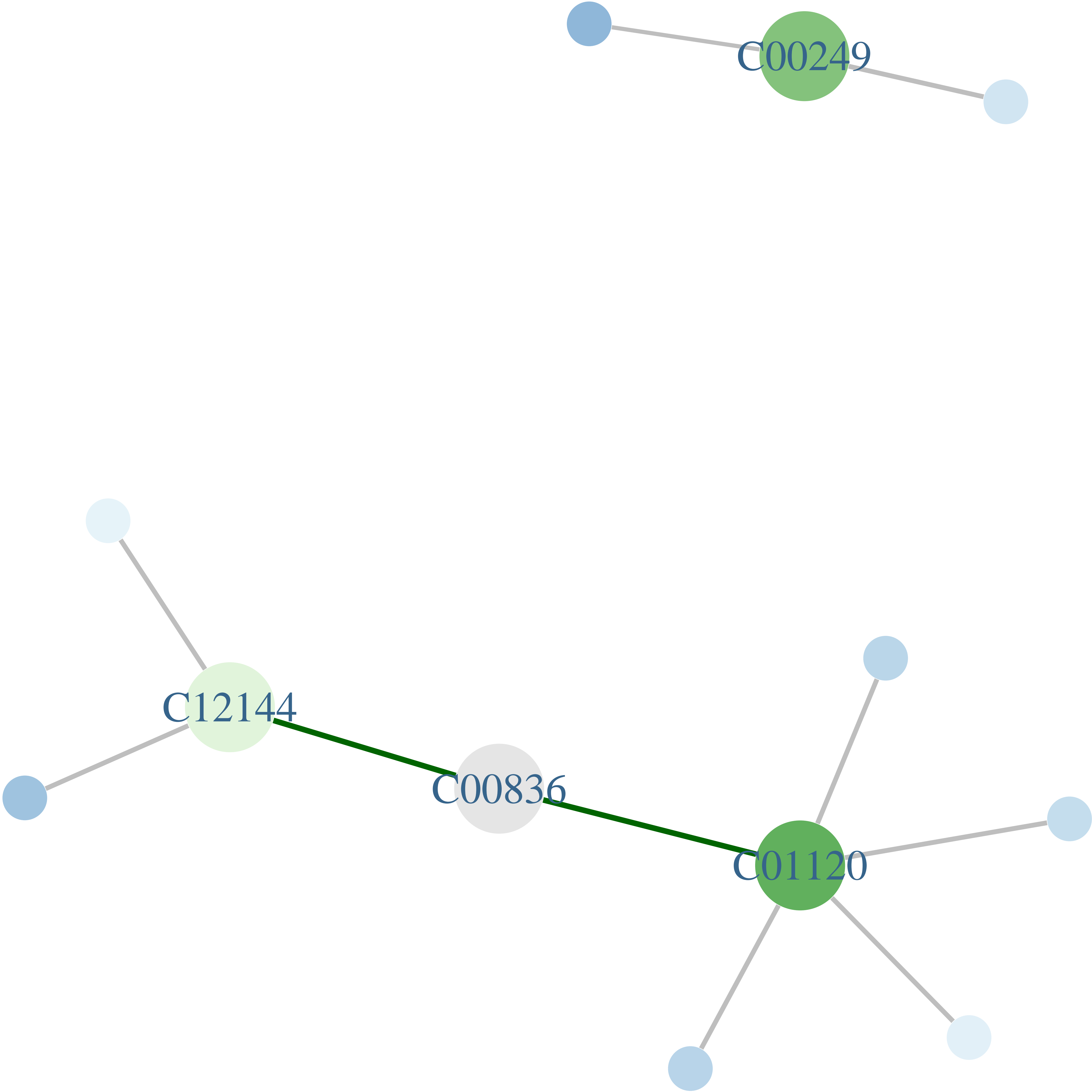
folate metabolism ; p-value: 0.078



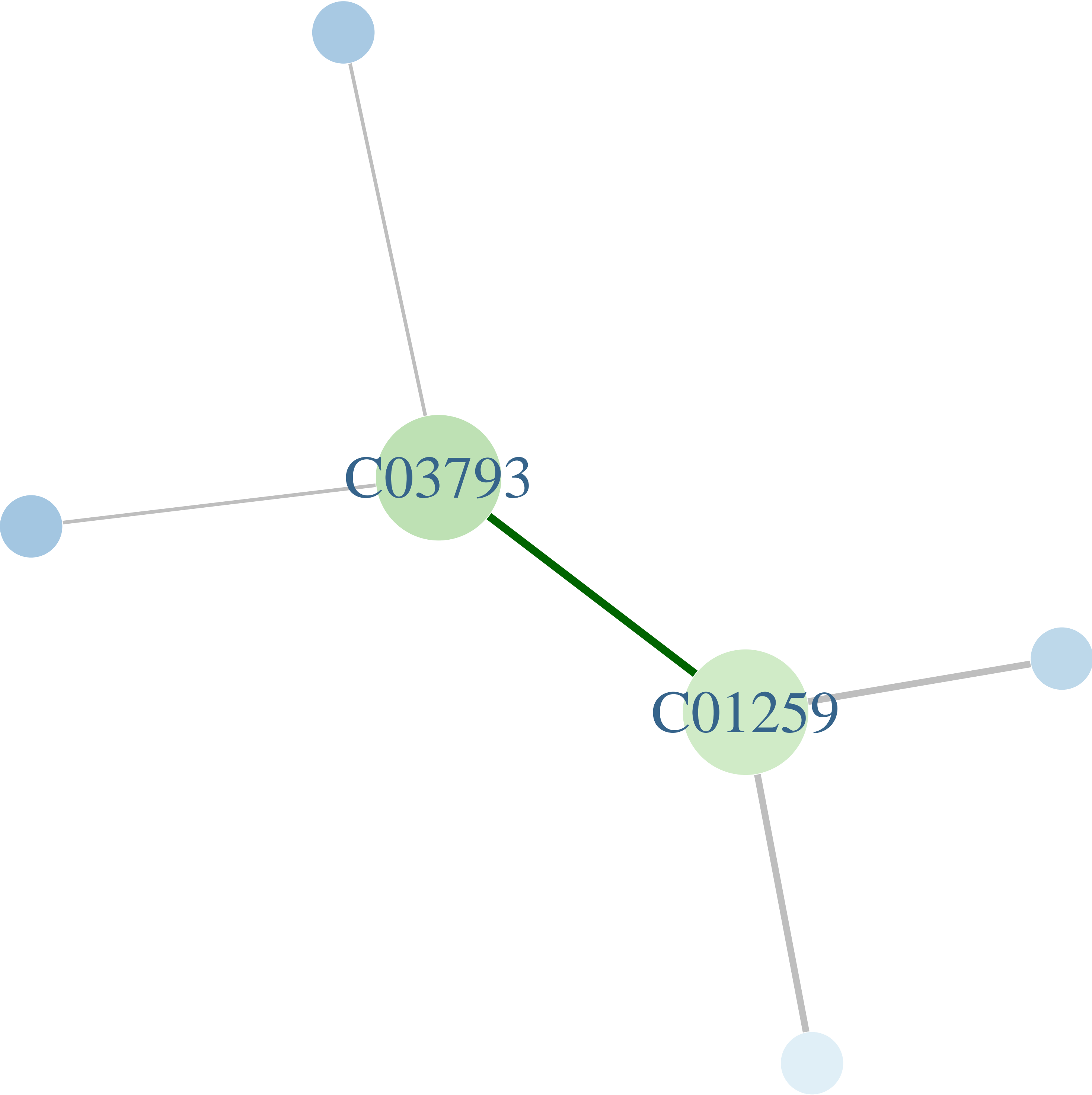
glycerophospholipid metabolism ; p-value: 0.181



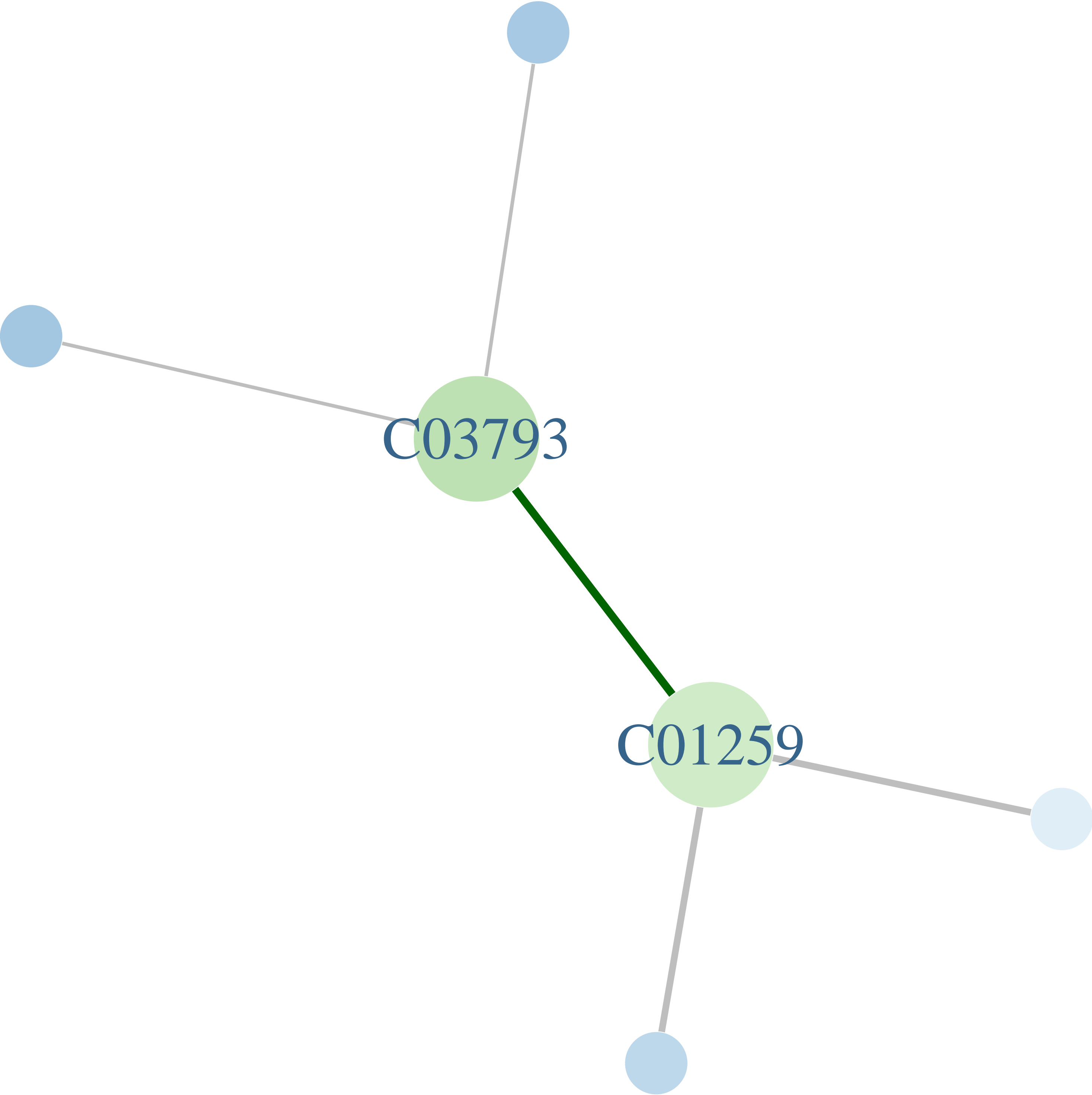
glycosphingolipid metabolism ; p-value: 0.065



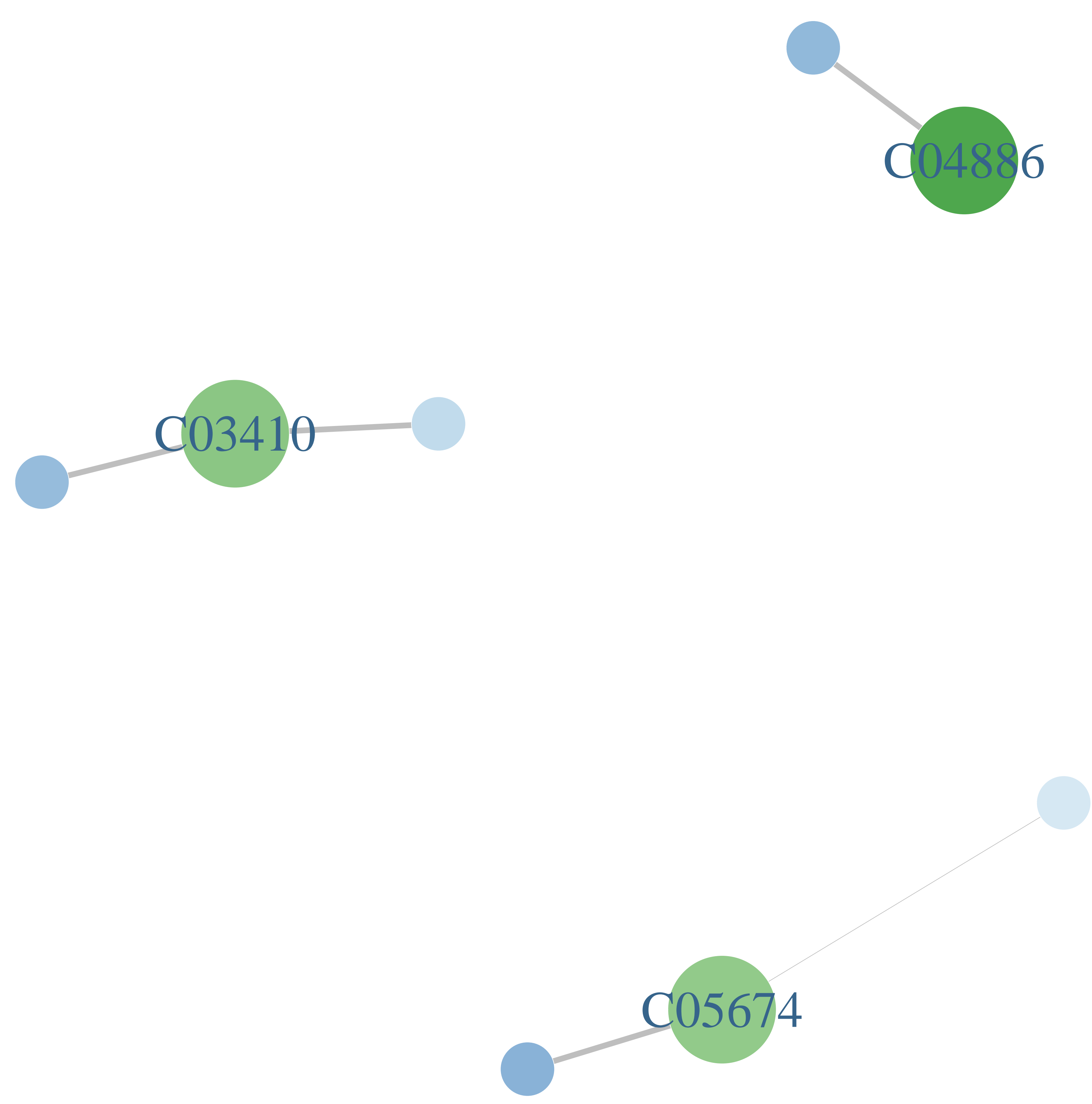
lysine degradation ; p-value: 0.211



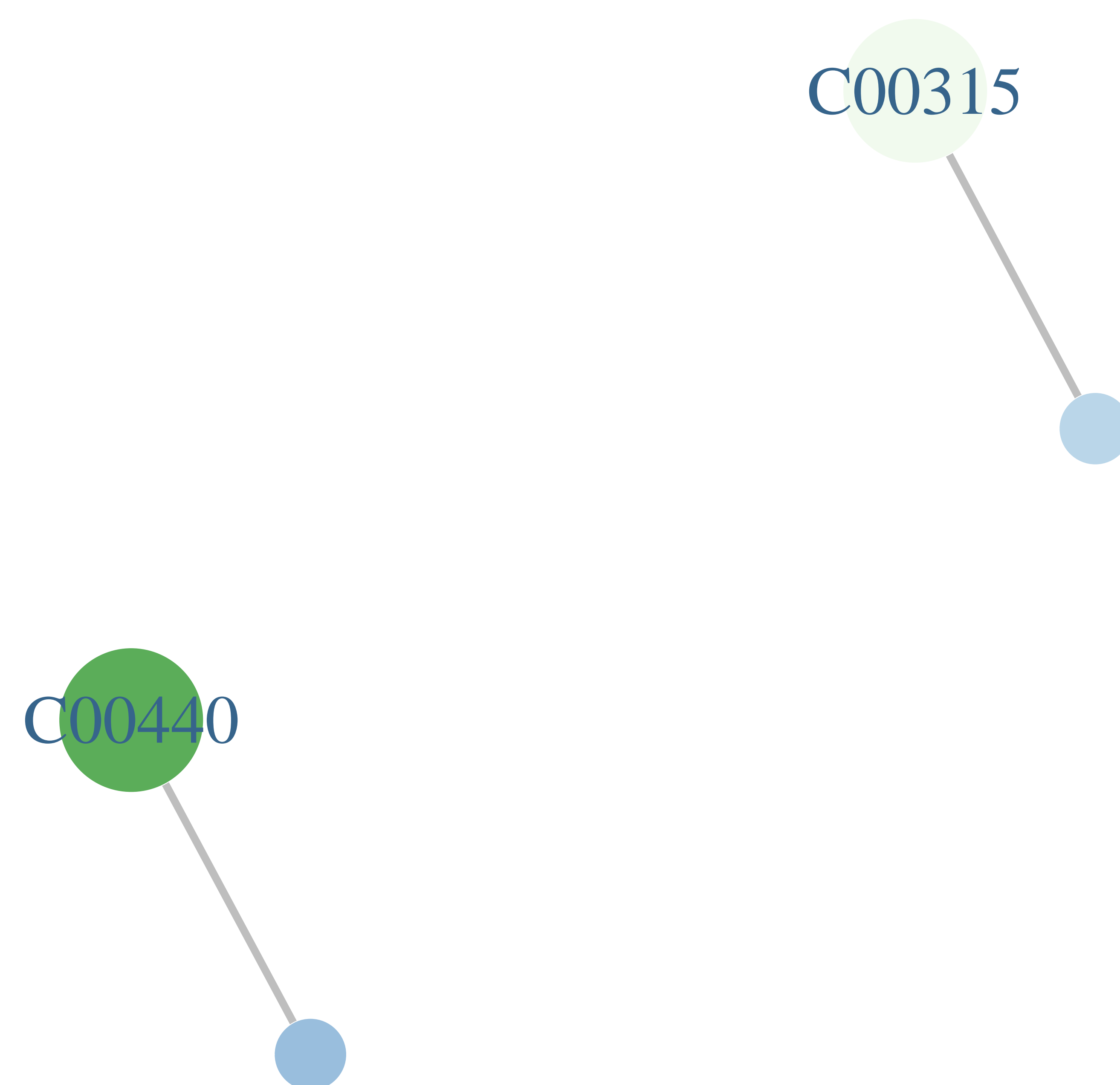
lysine metabolism ; p-value: 0.119



amino sugar metabolism ; p-value: 0.089



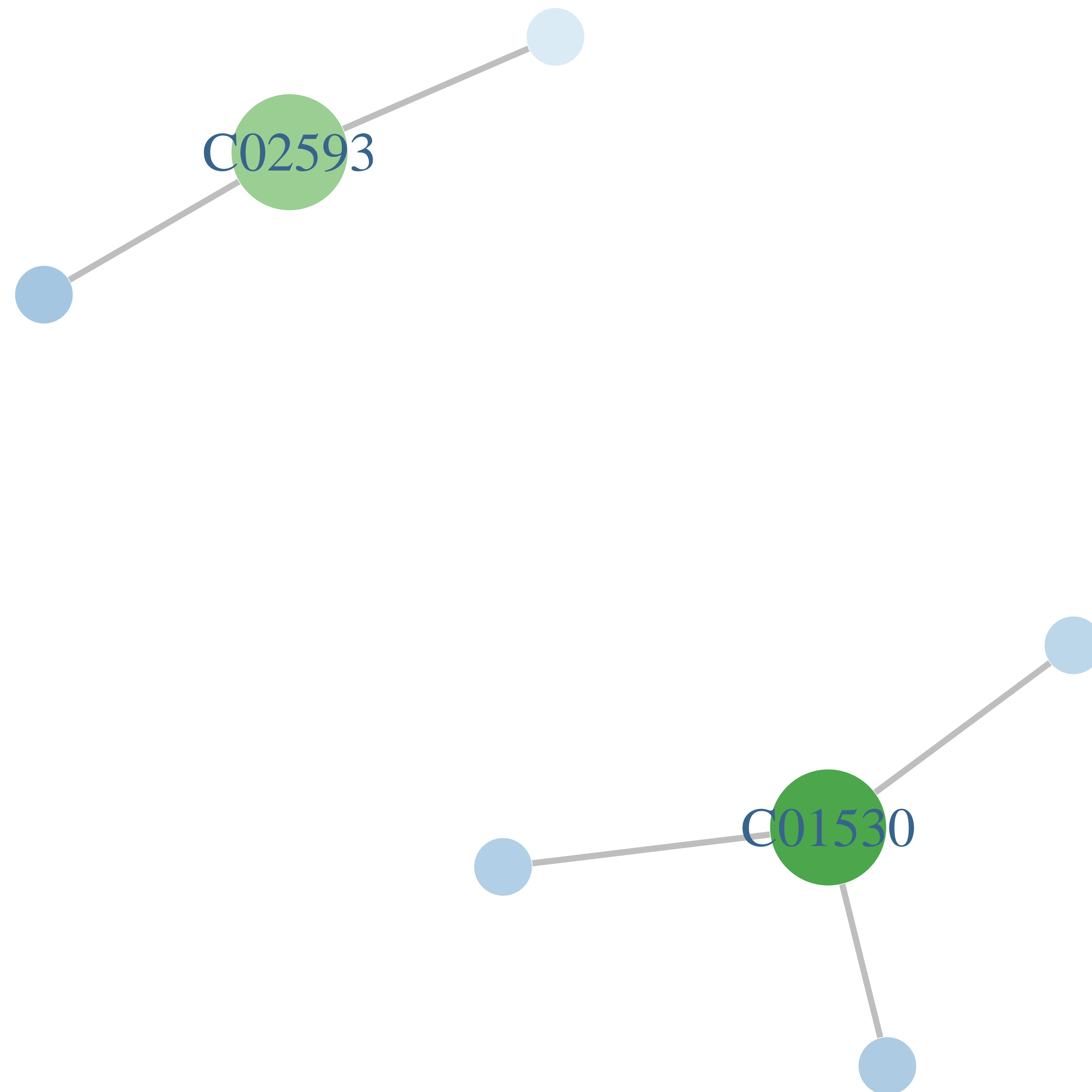
methionine and cysteine metabolism ; p-value: 0.505



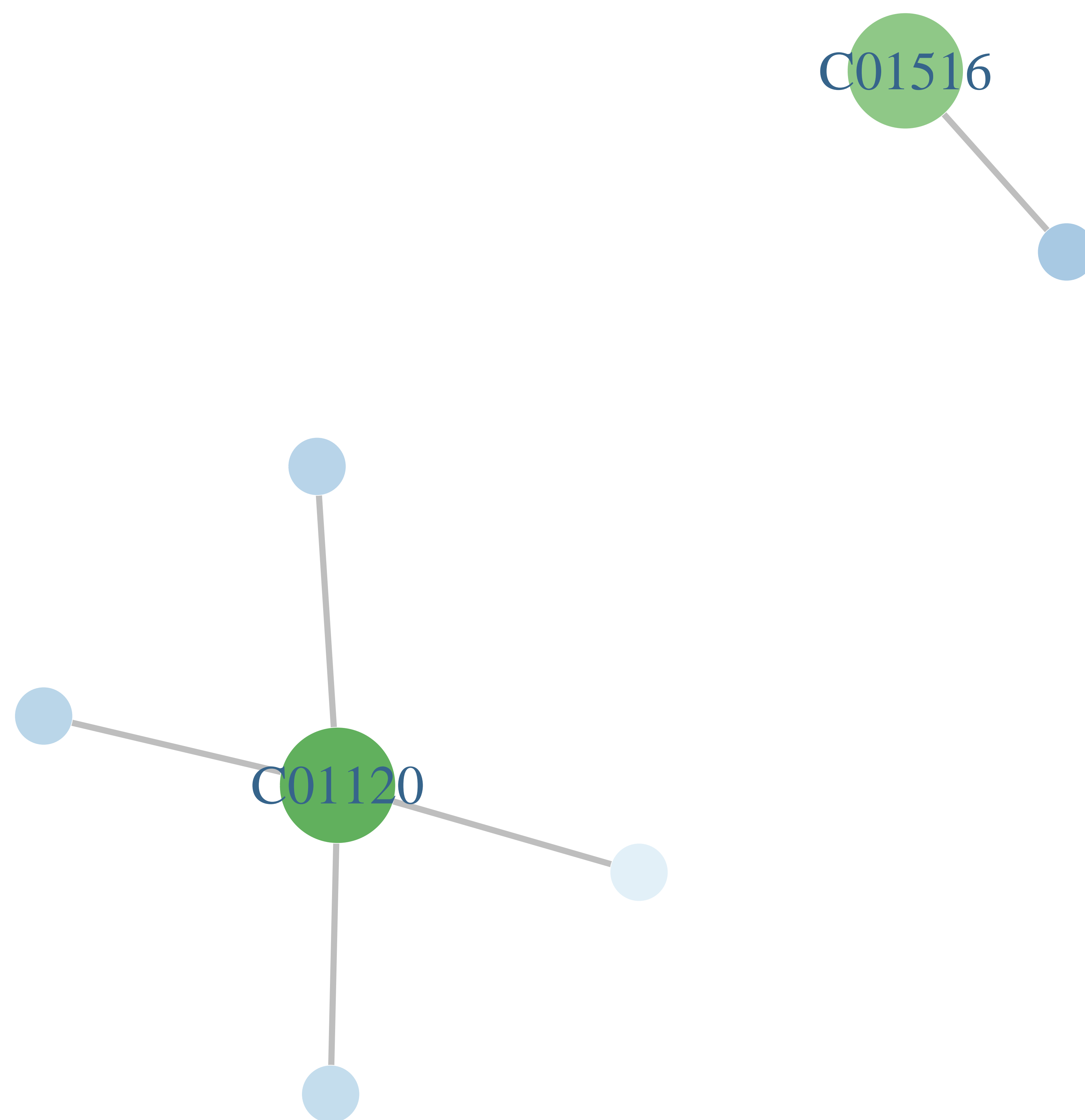
methionine metabolism ; p-value: 0.195



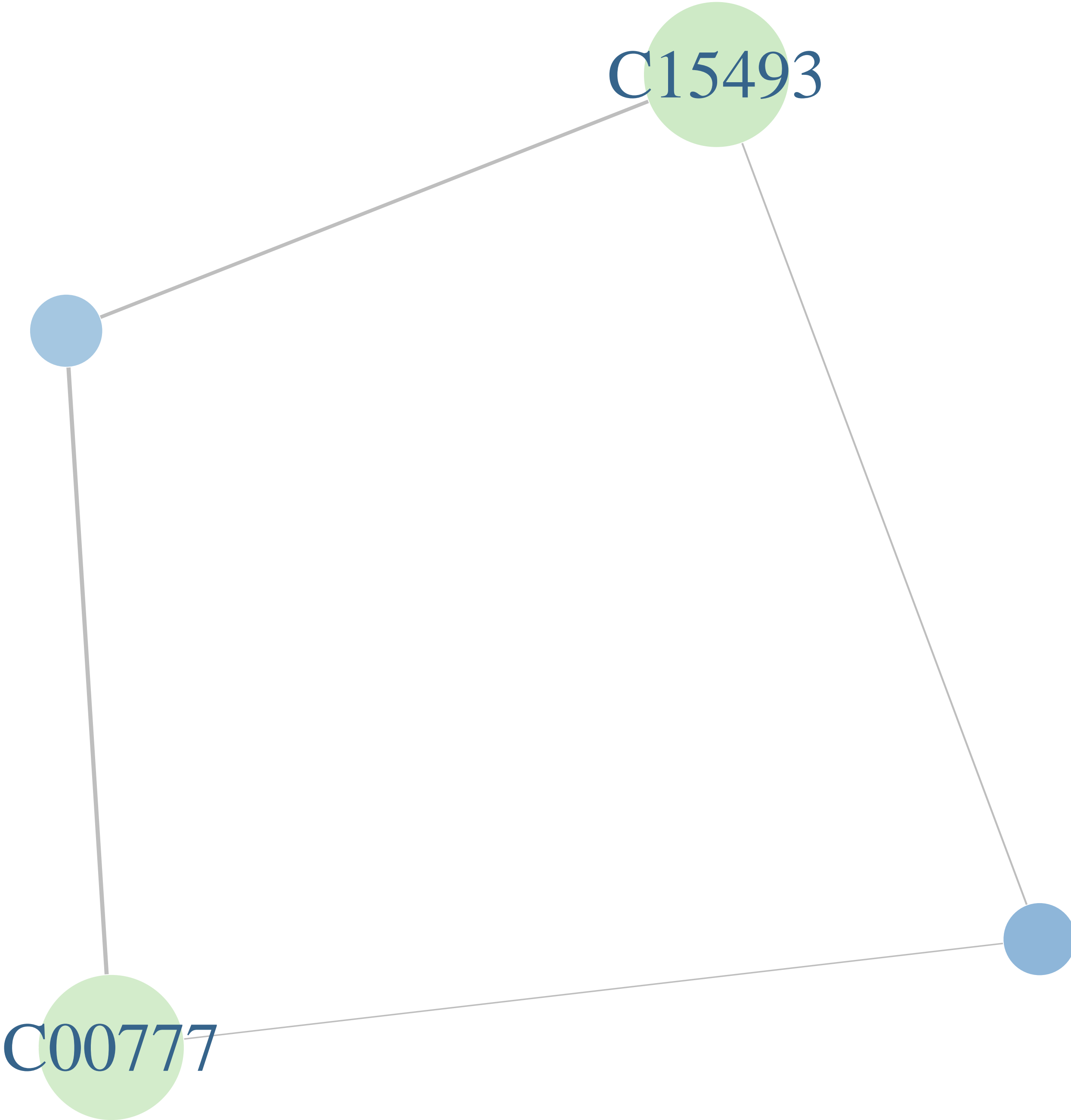
mitochondrial beta-oxidation of long chain saturated fatty acids ; p-value: 0.133



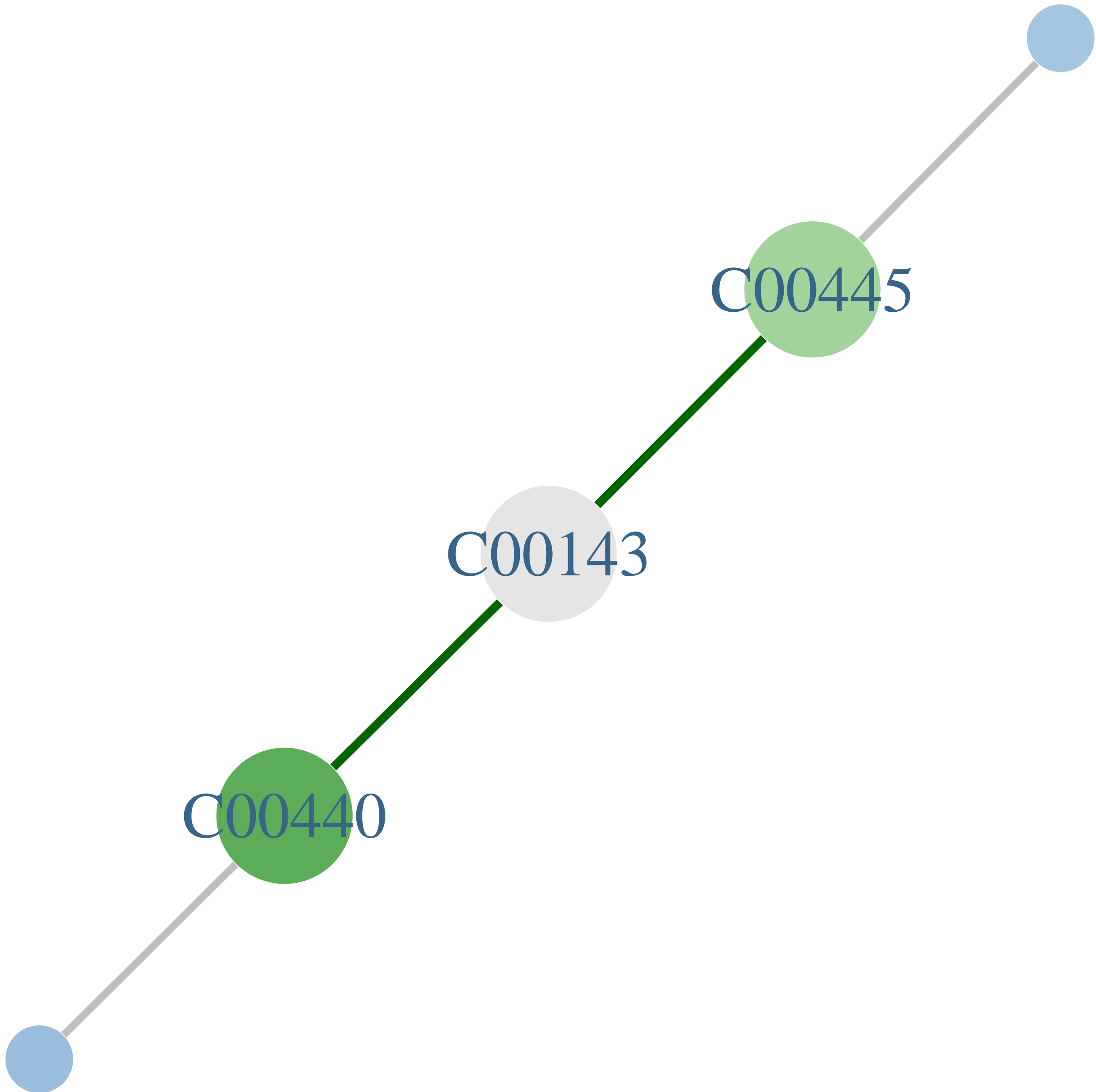
neuroactive ligand–receptor interaction ; p–value: 0.387



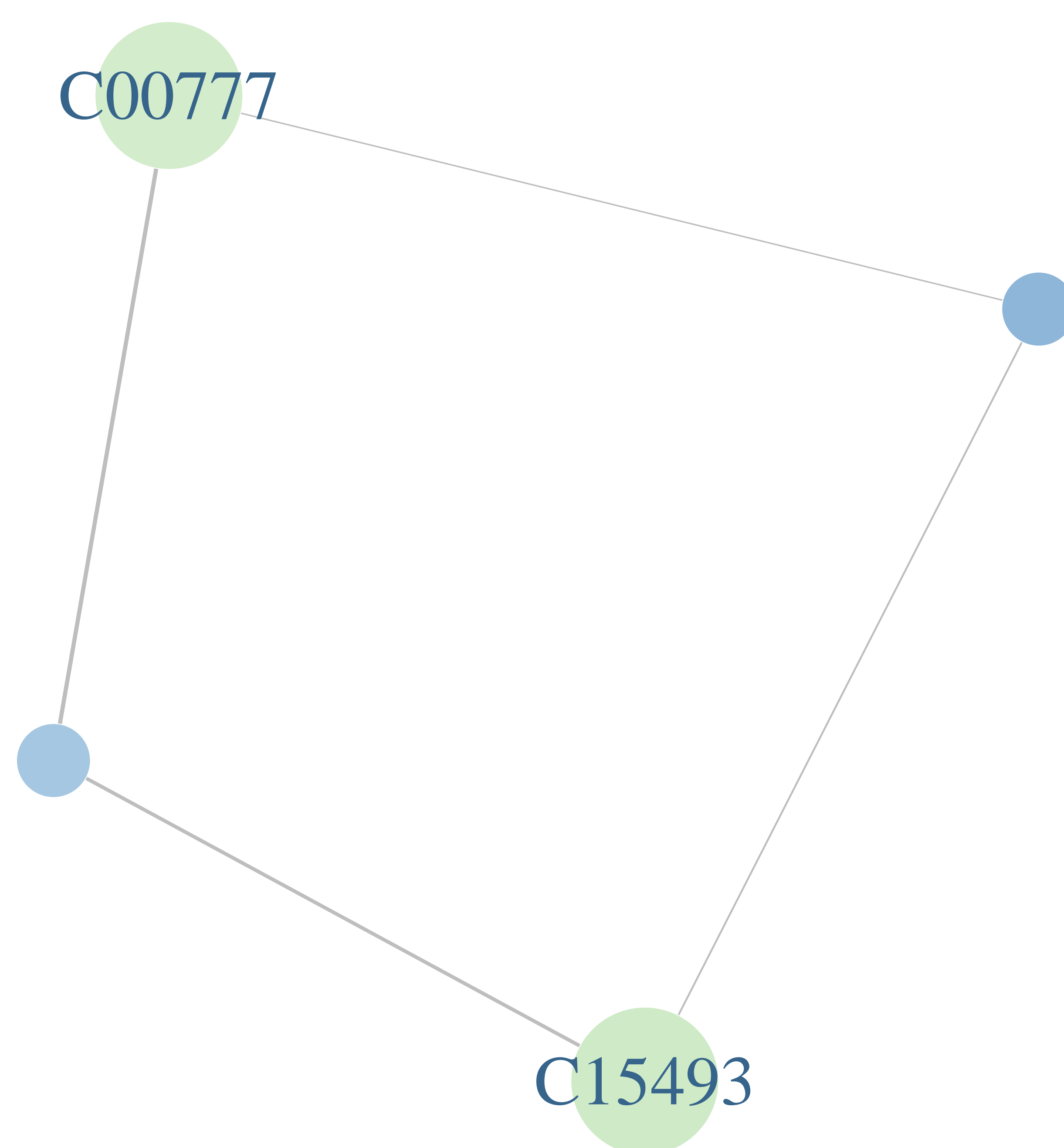
non-small cell lung cancer ; p-value: 0.017



one carbon pool by folate ; p-value: 0.043



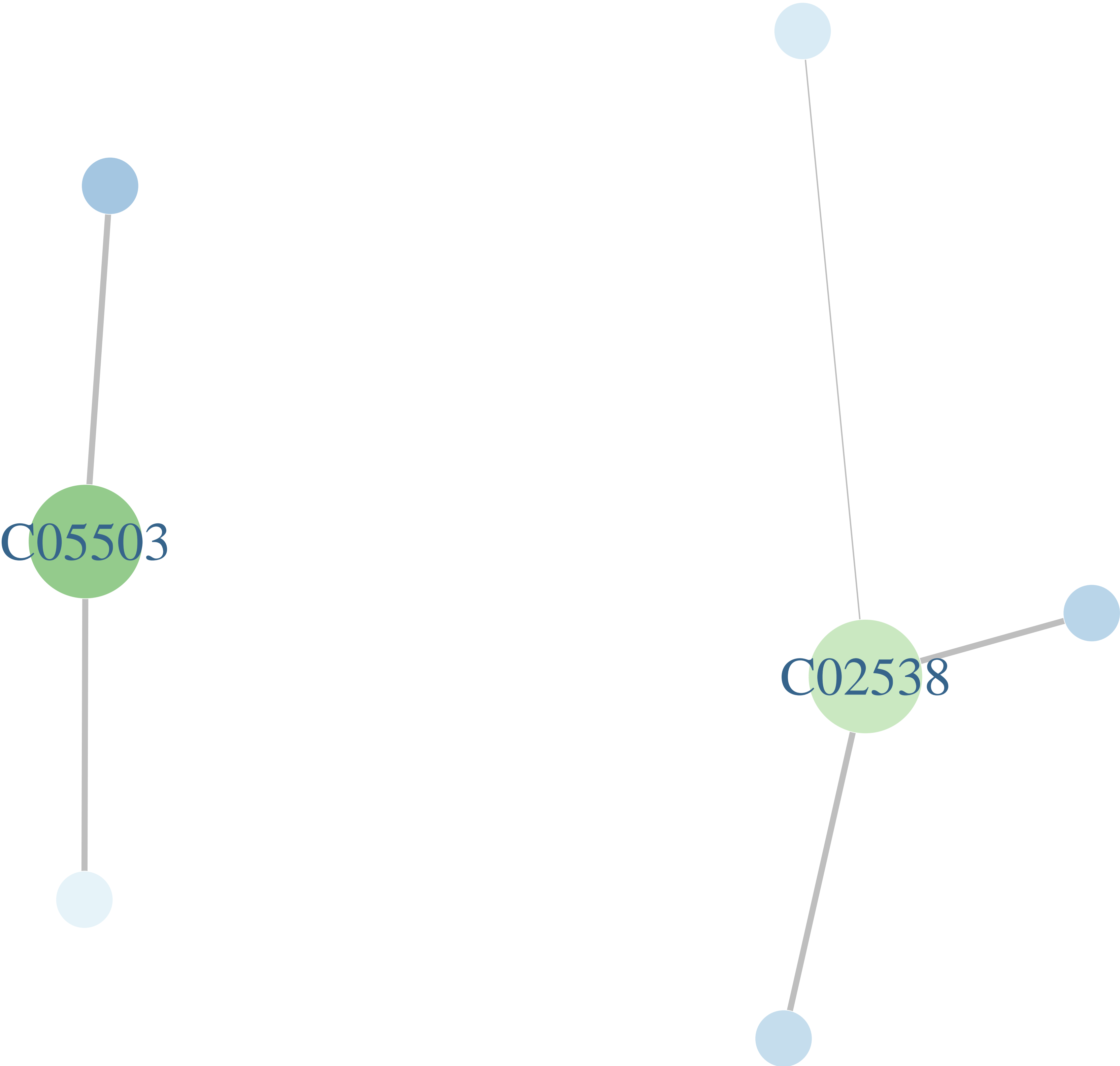
pathways in cancer ; p-value: 0.179



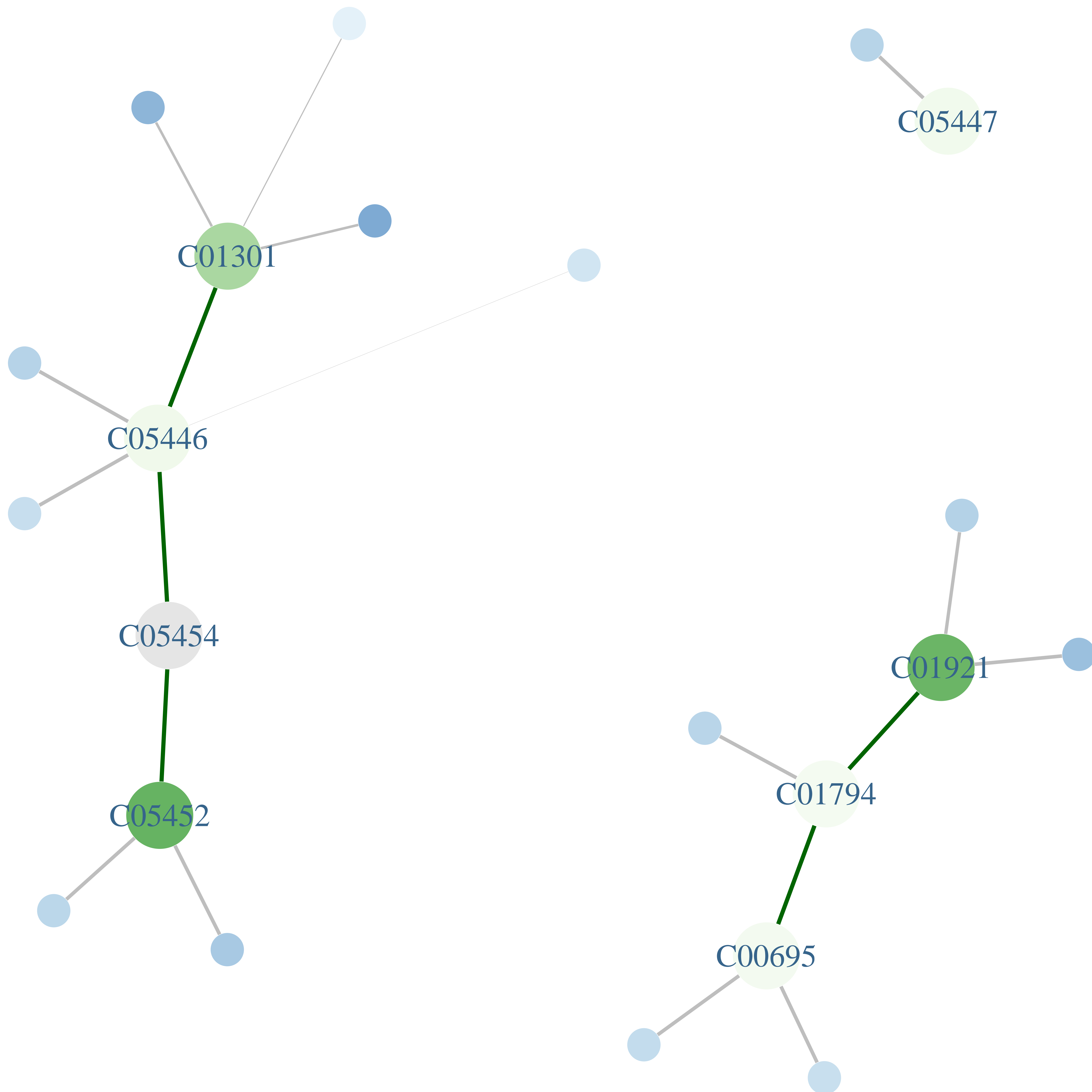
phosphatidylinositol phosphate metabolism ; p-value: 0.402



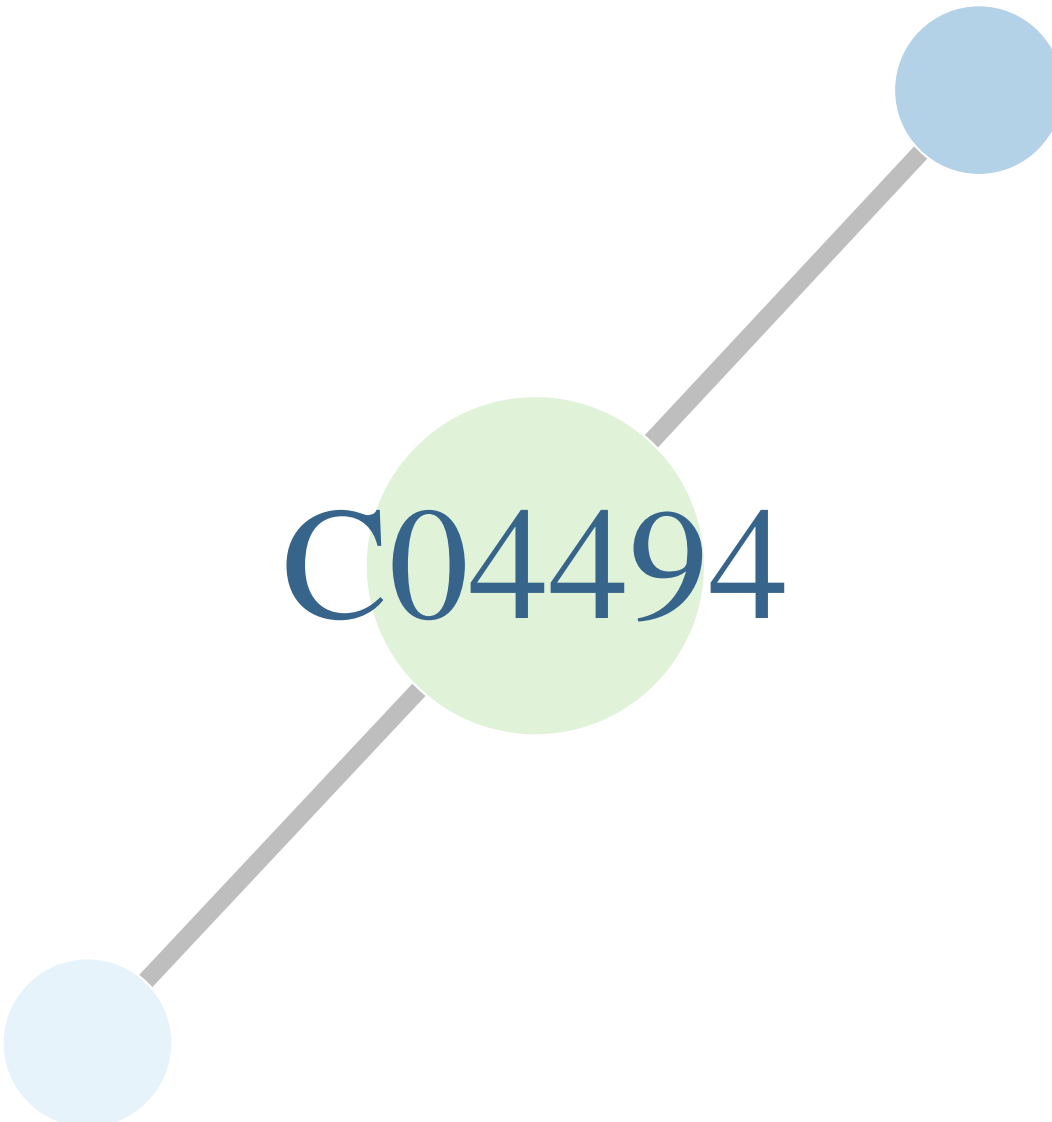
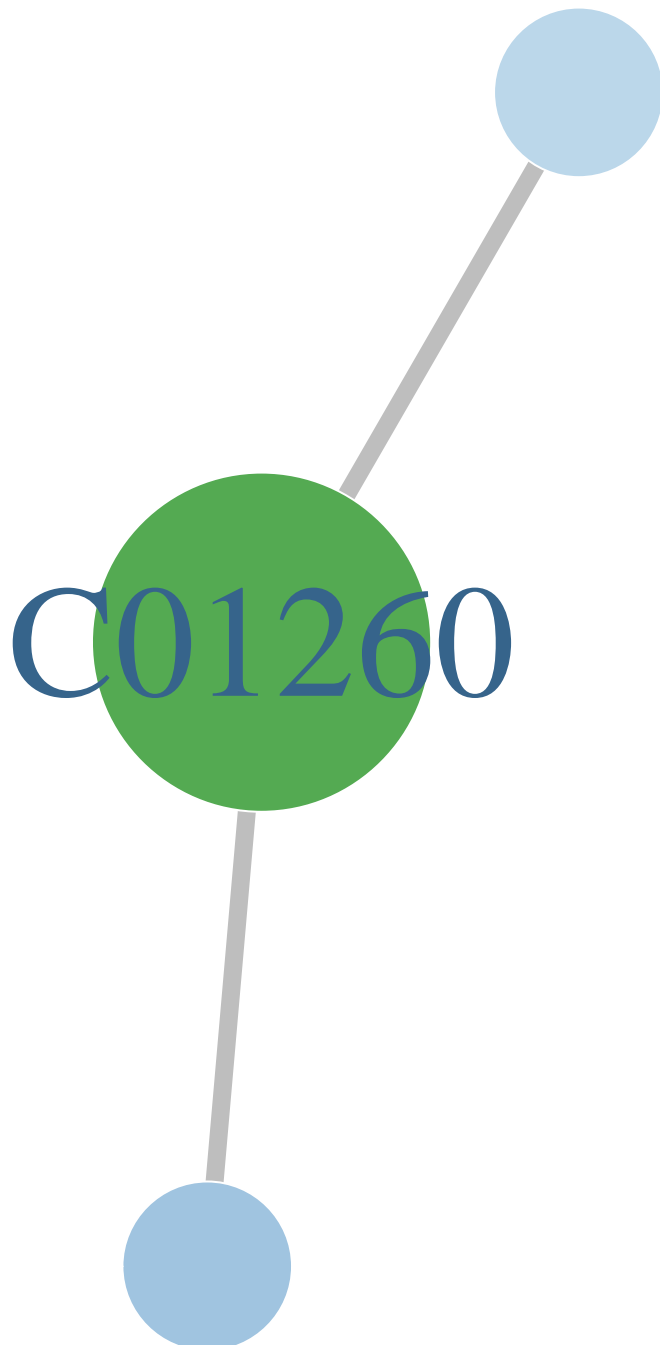
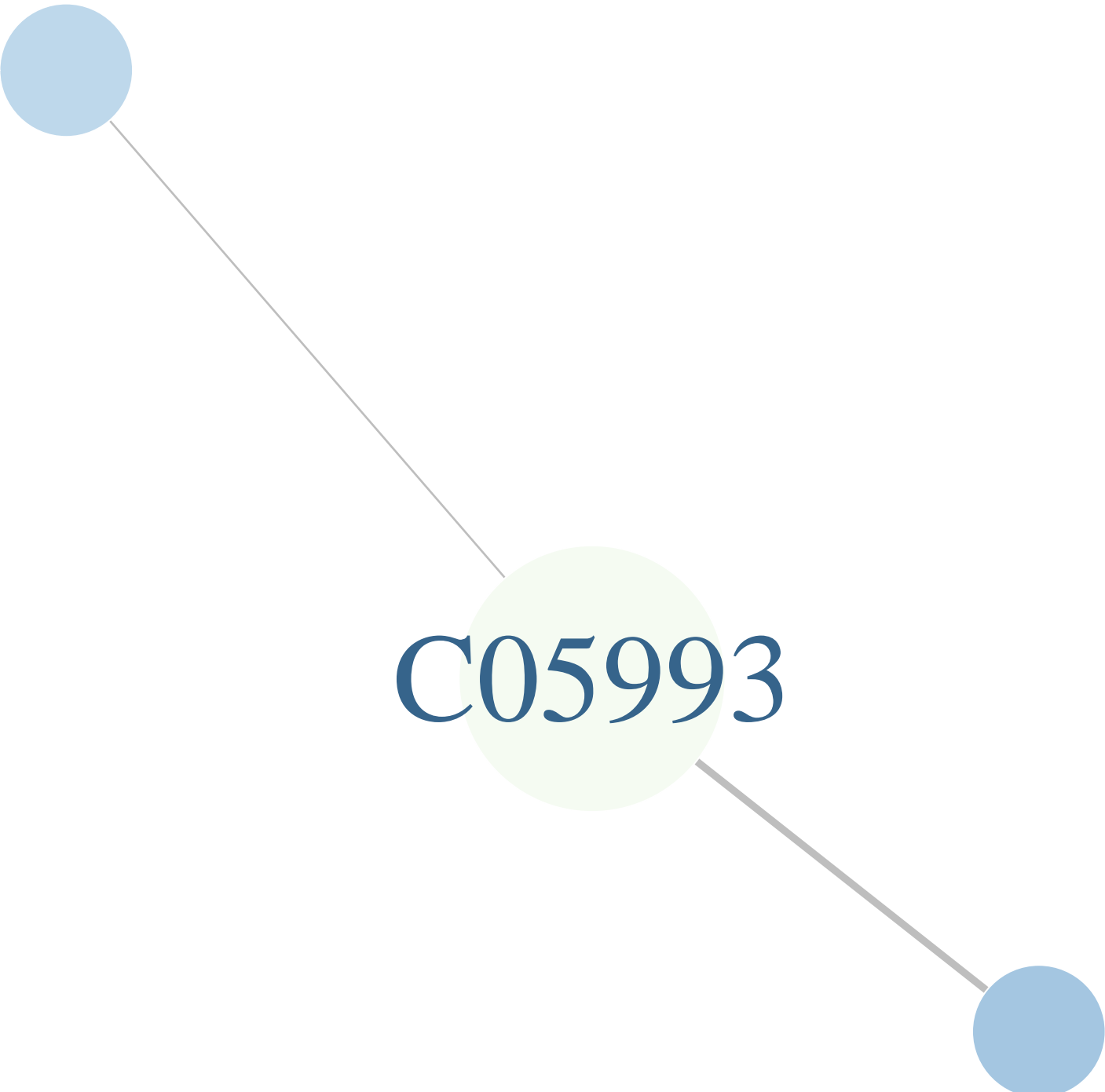
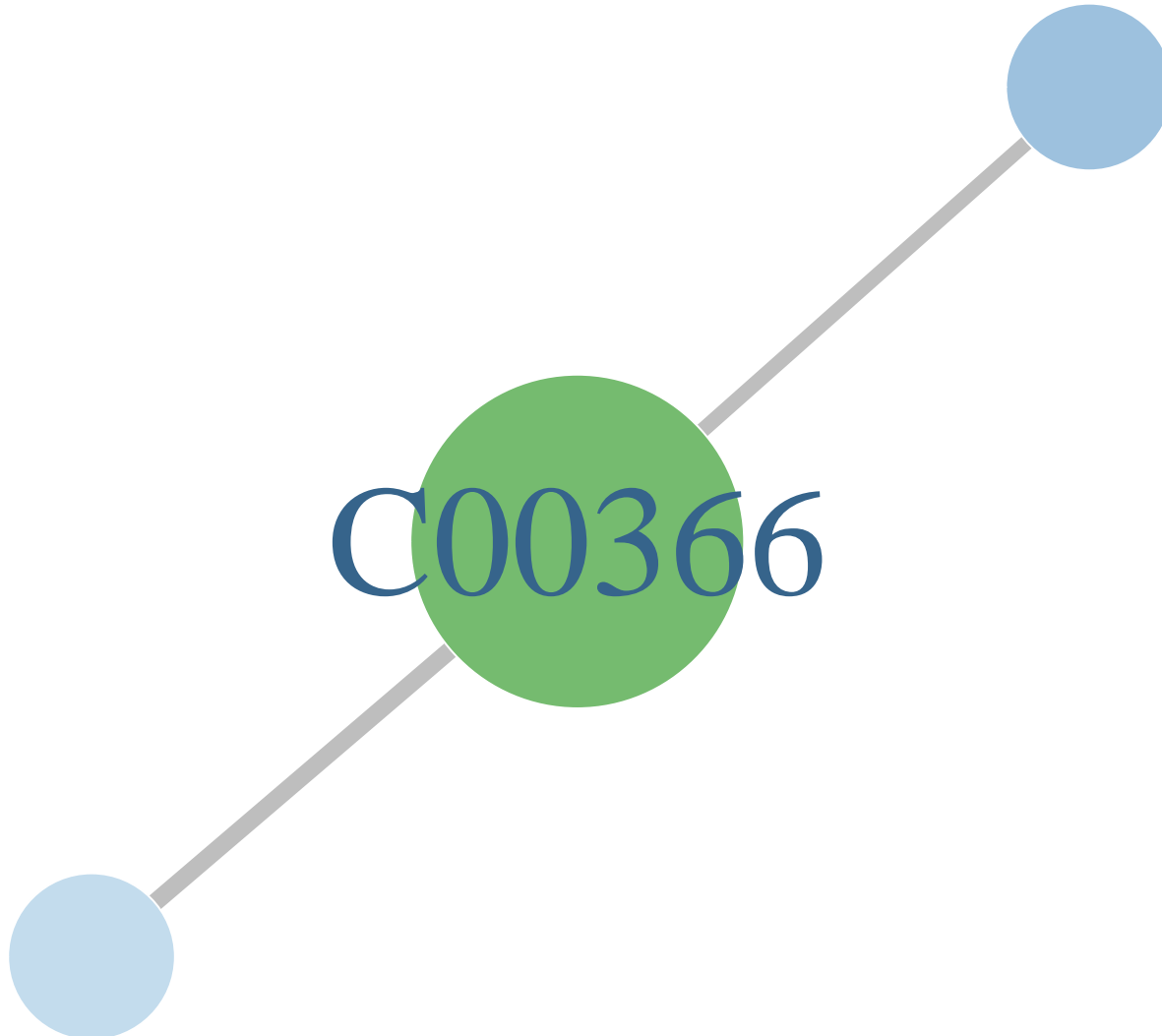
androgen and estrogen metabolism ; p-value: 0.505



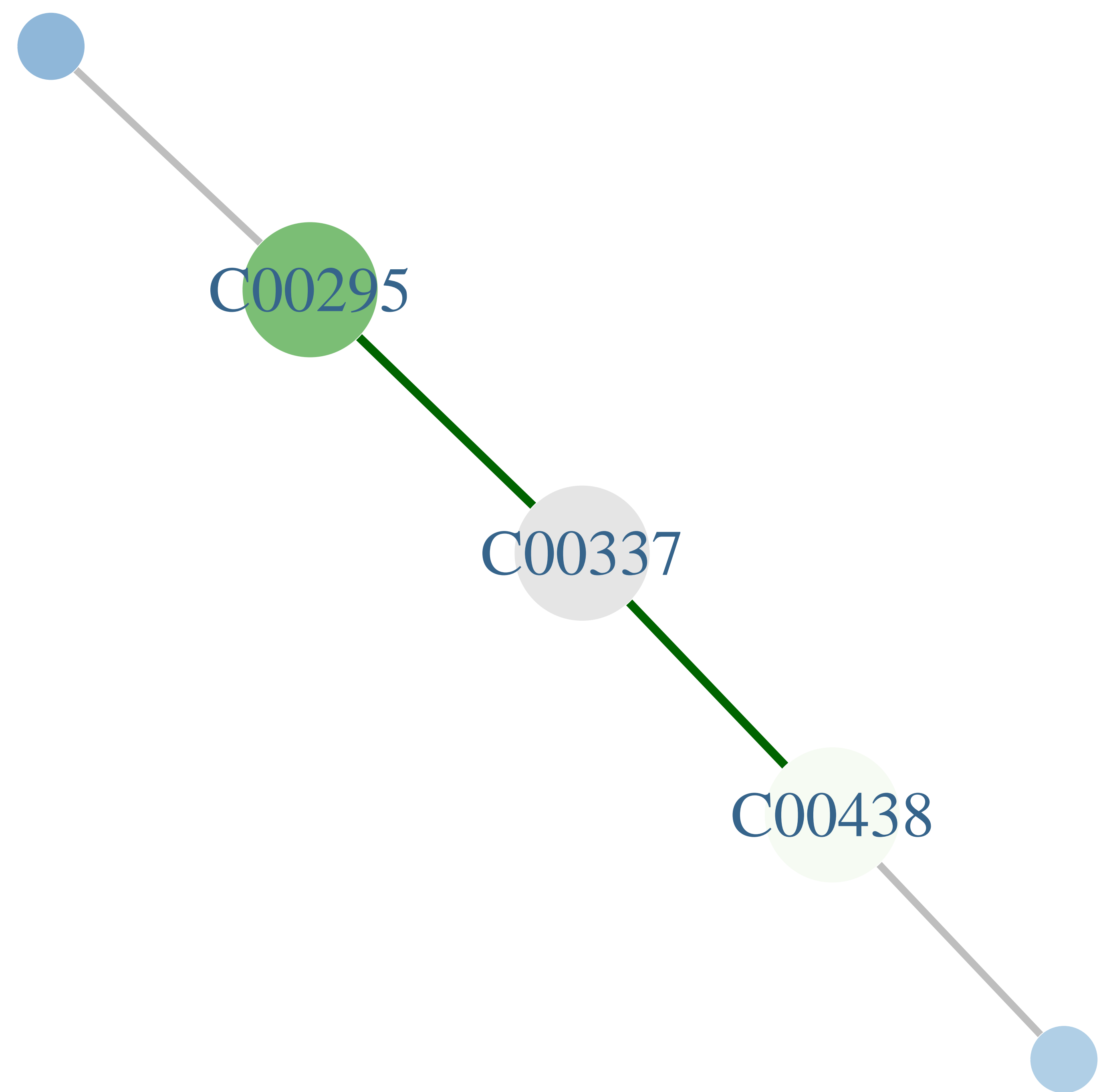
primary bile acid biosynthesis ; p-value: 0.001



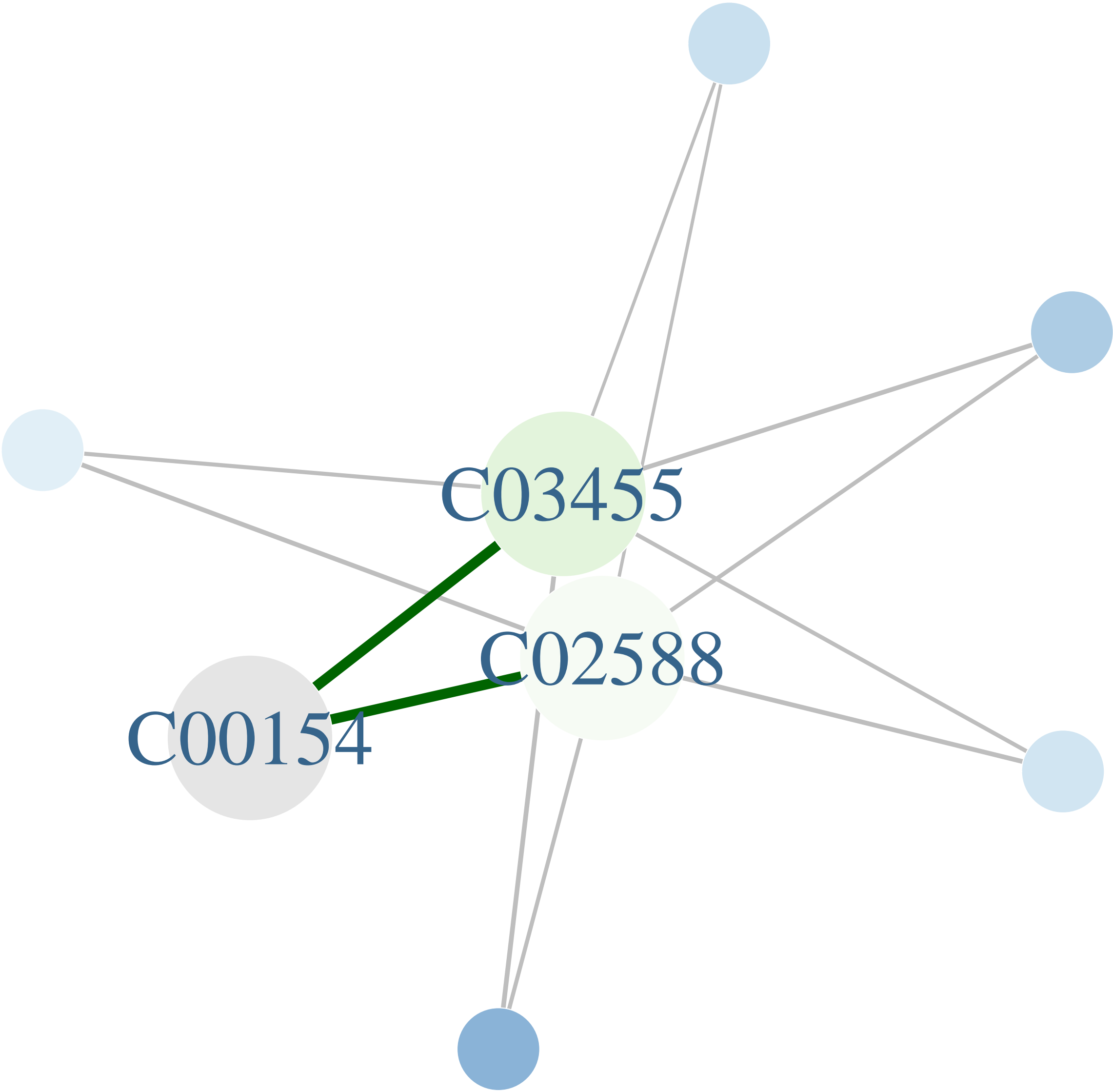
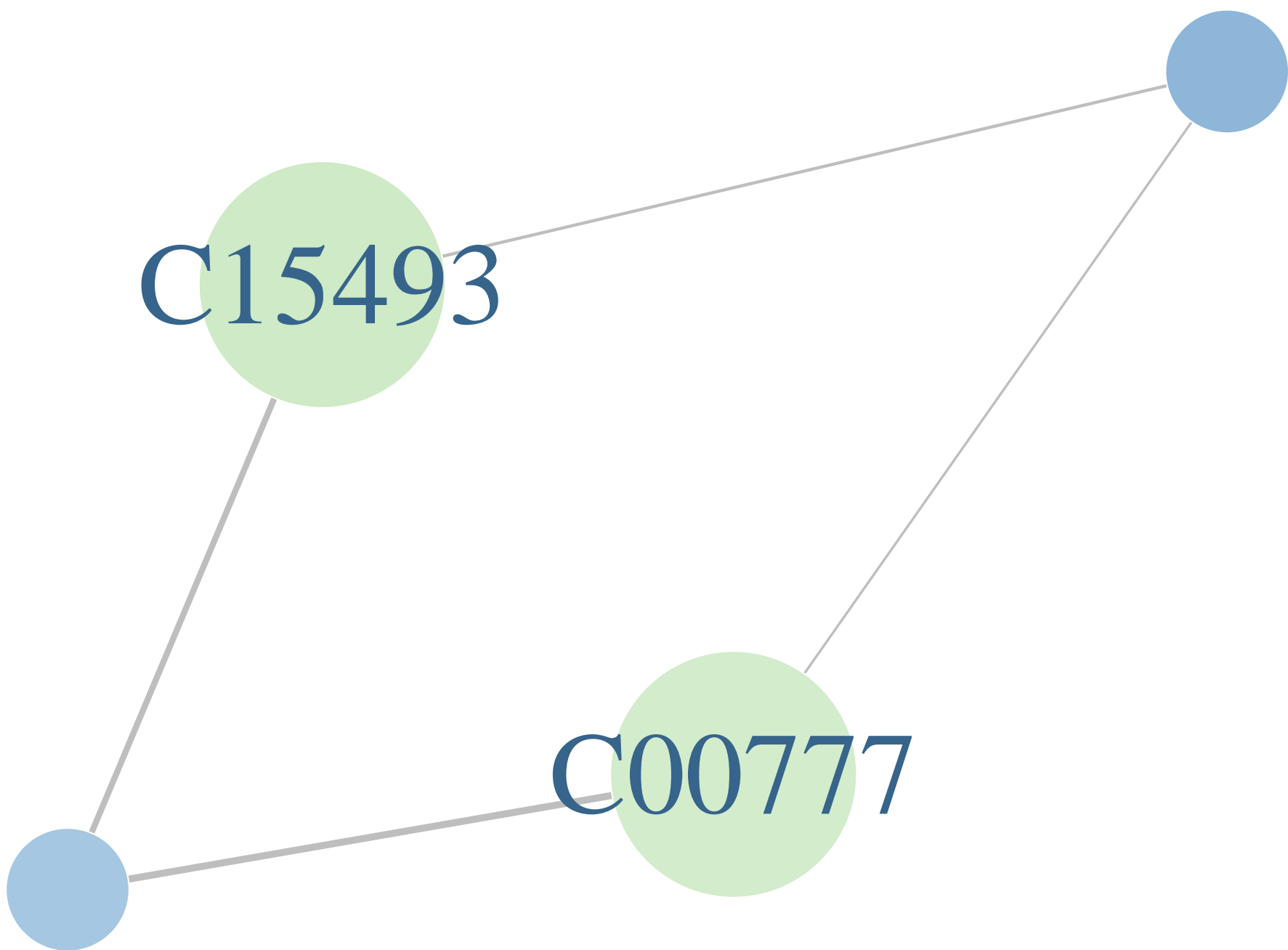
purine metabolism ; p-value: 0.313



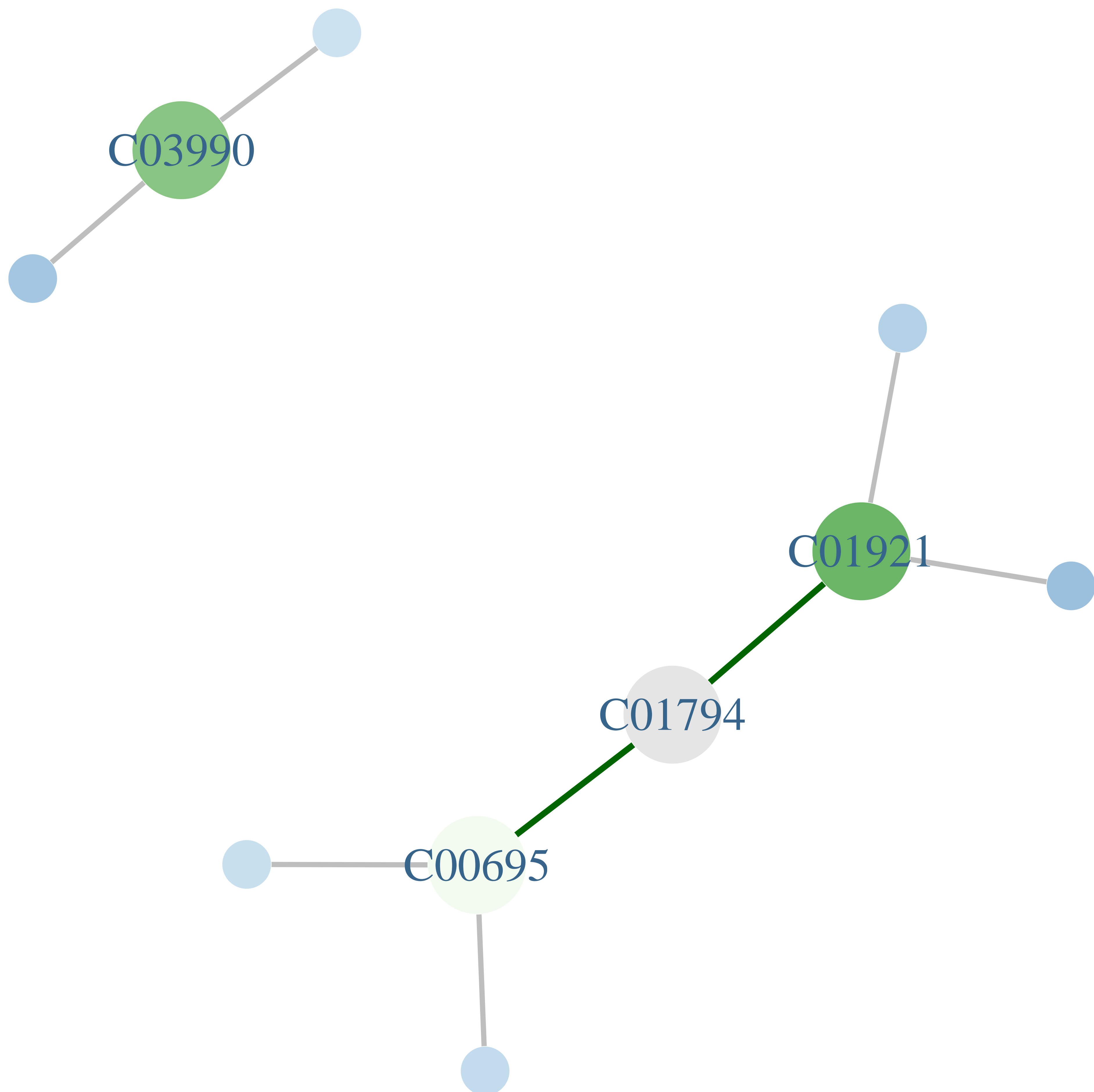
pyrimidine metabolism ; p-value: 0.652



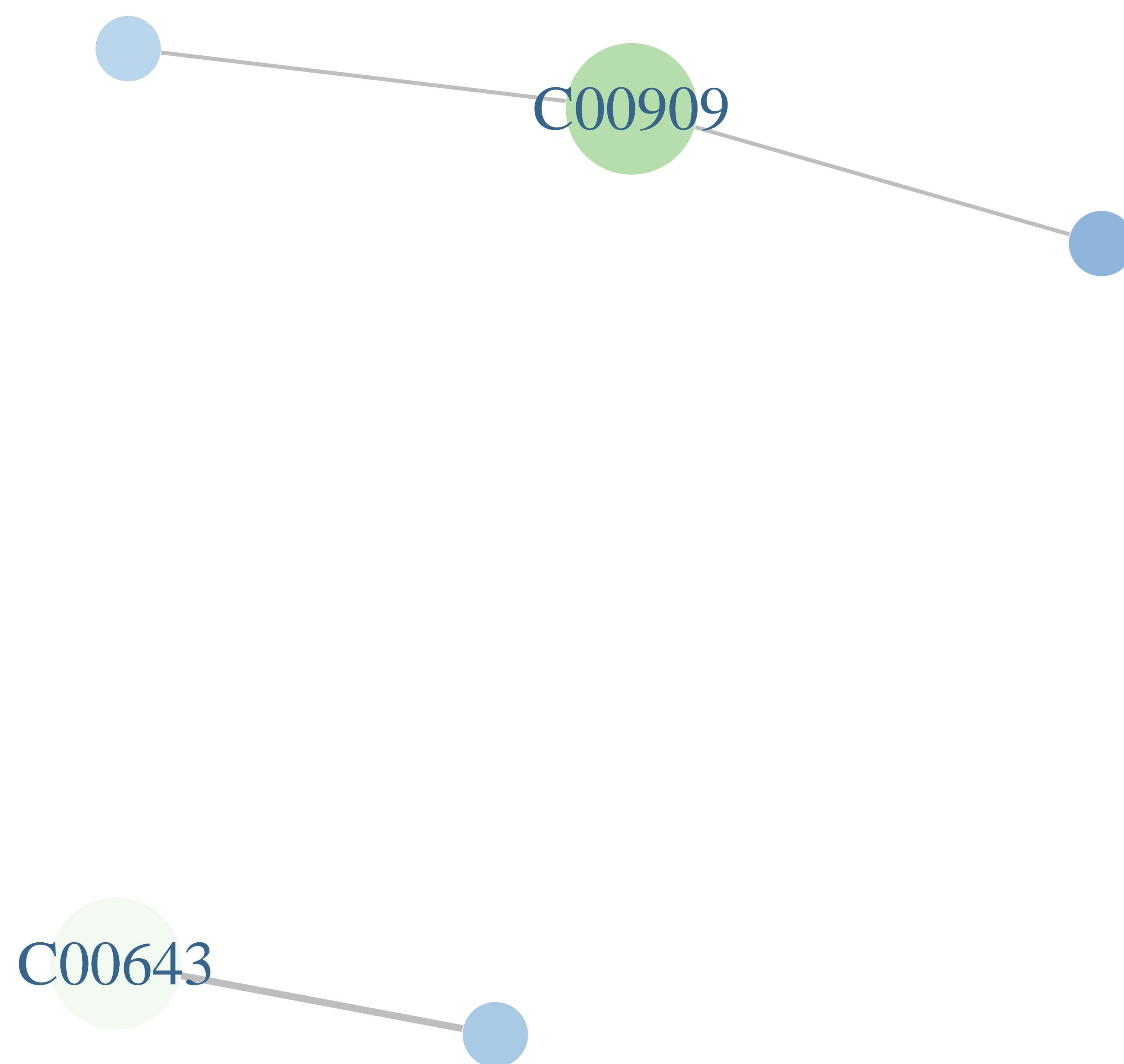
retinol metabolism ; p-value: 0.009



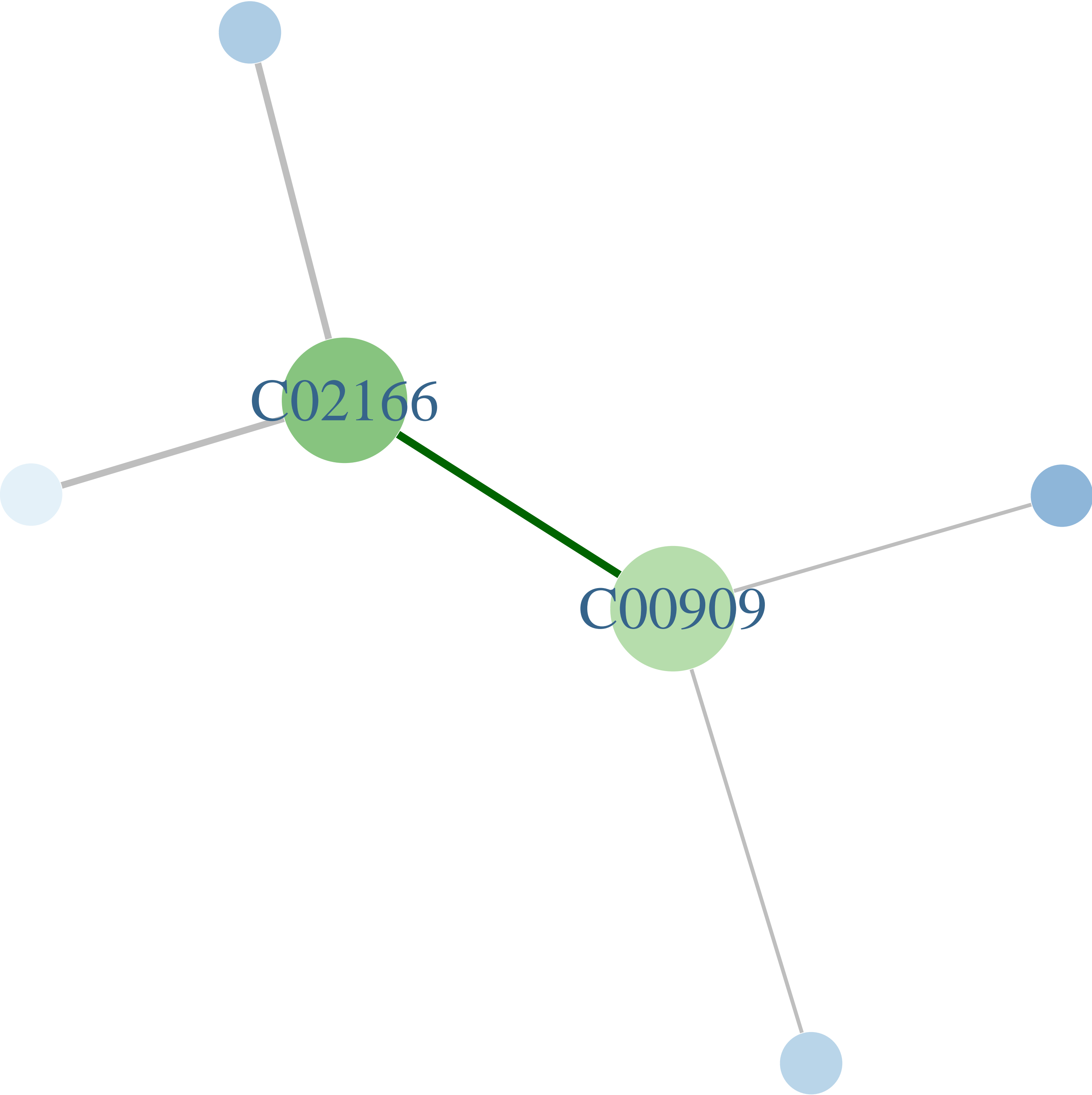
secondary bile acid biosynthesis ; p-value: 0.004



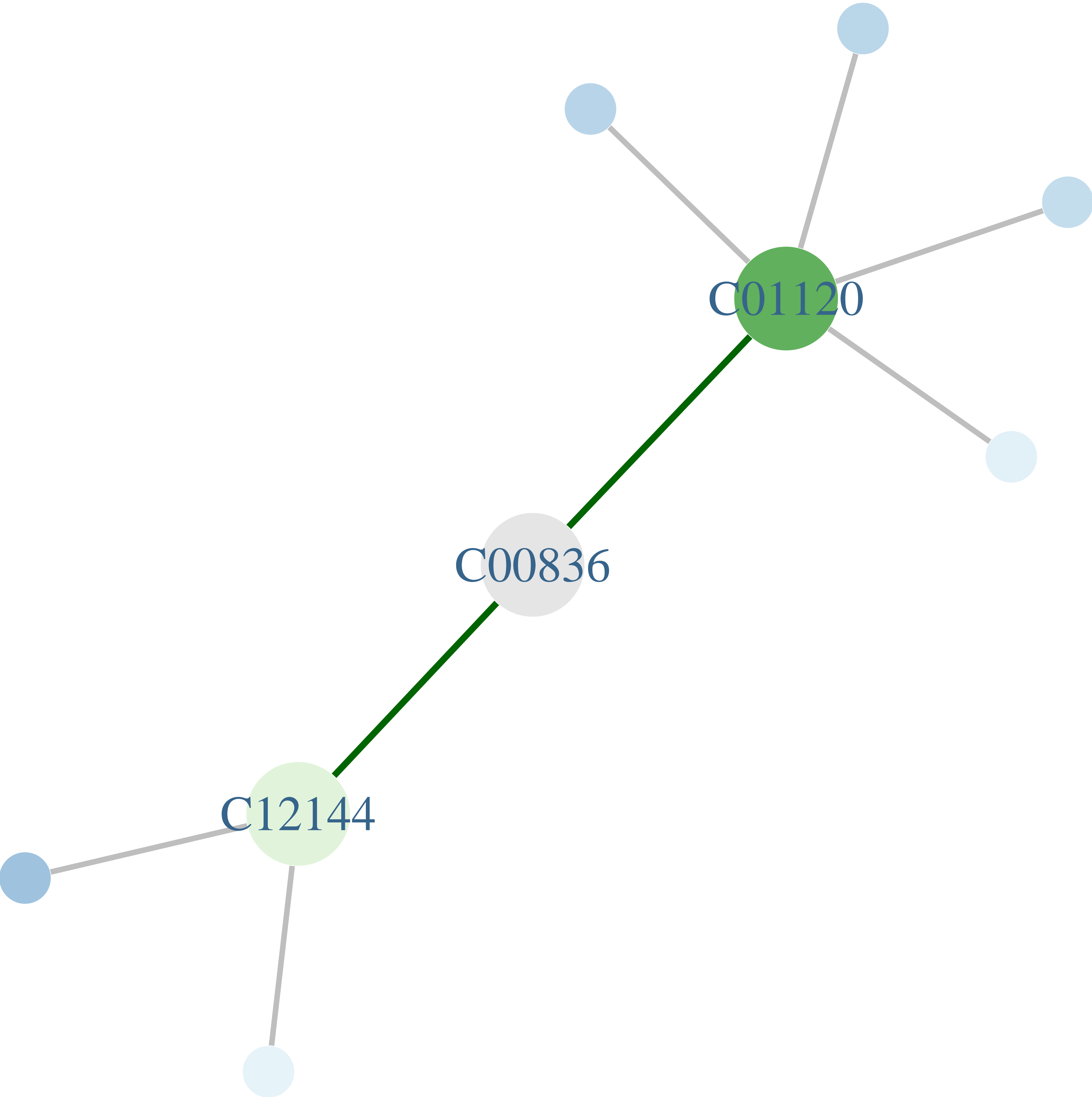
serotonergic synapse ; p-value: 0.227



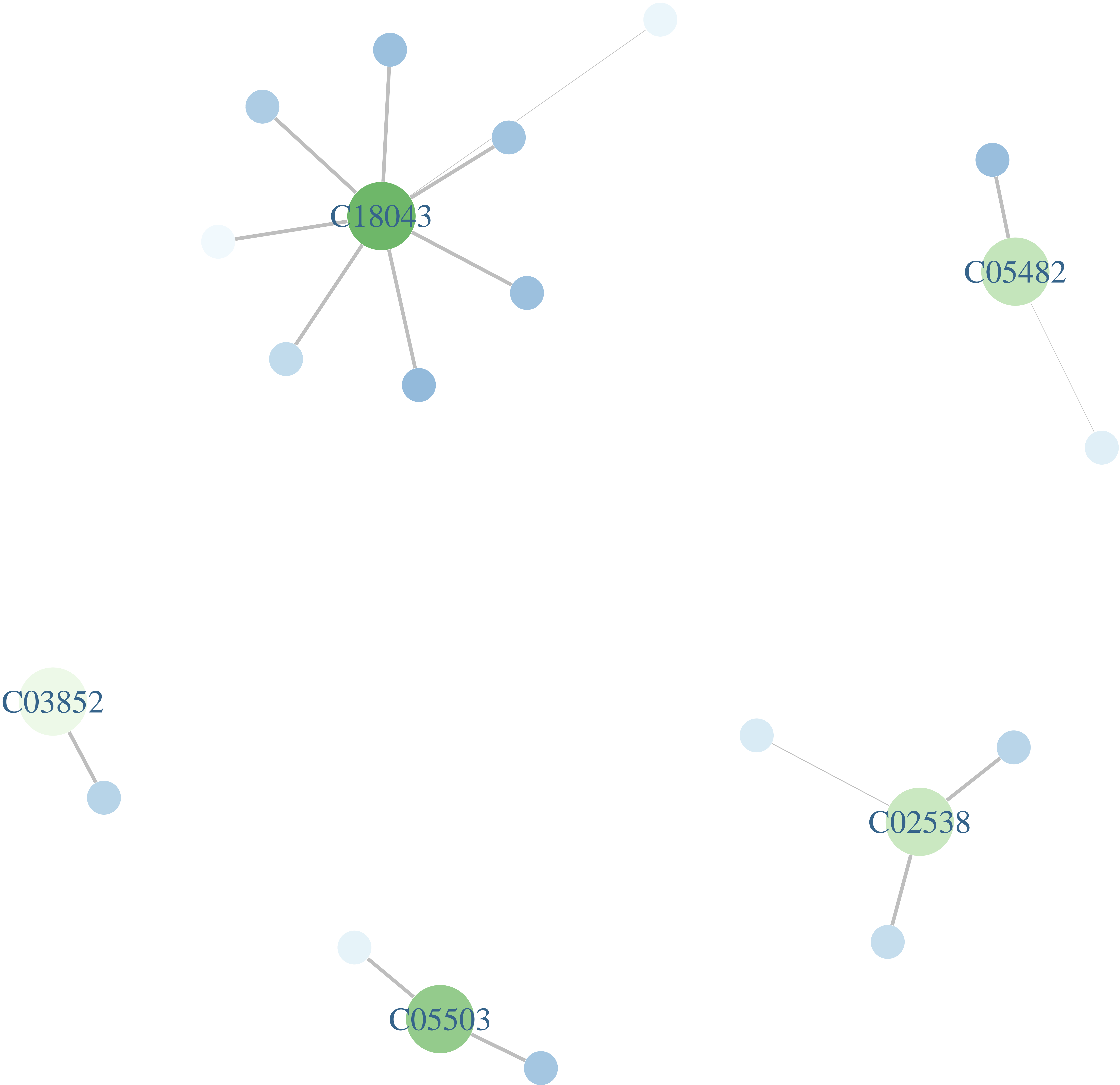
arachidonic acid metabolism ; p-value: 0.532



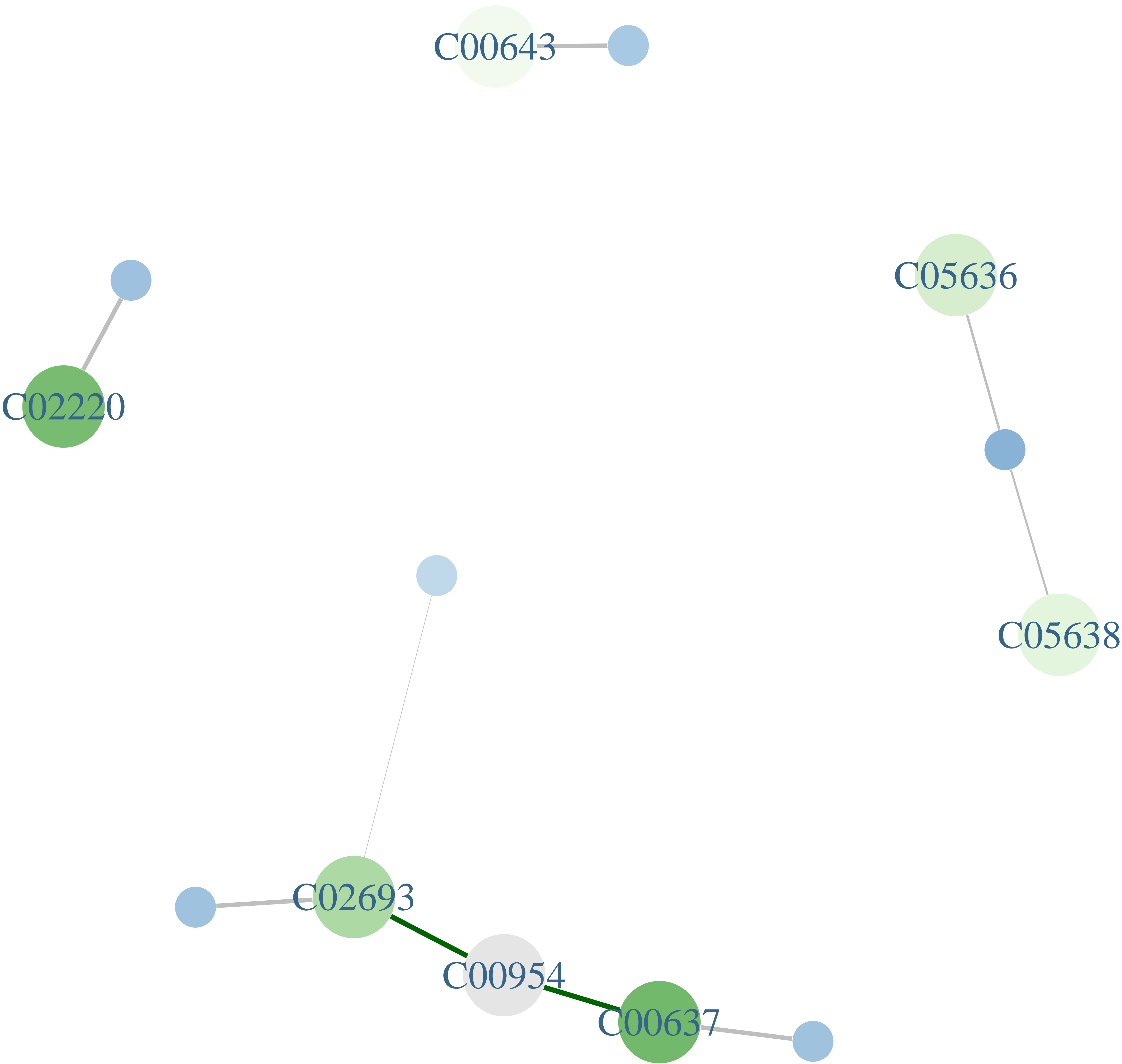
sphingolipid metabolism ; p-value: 0.259



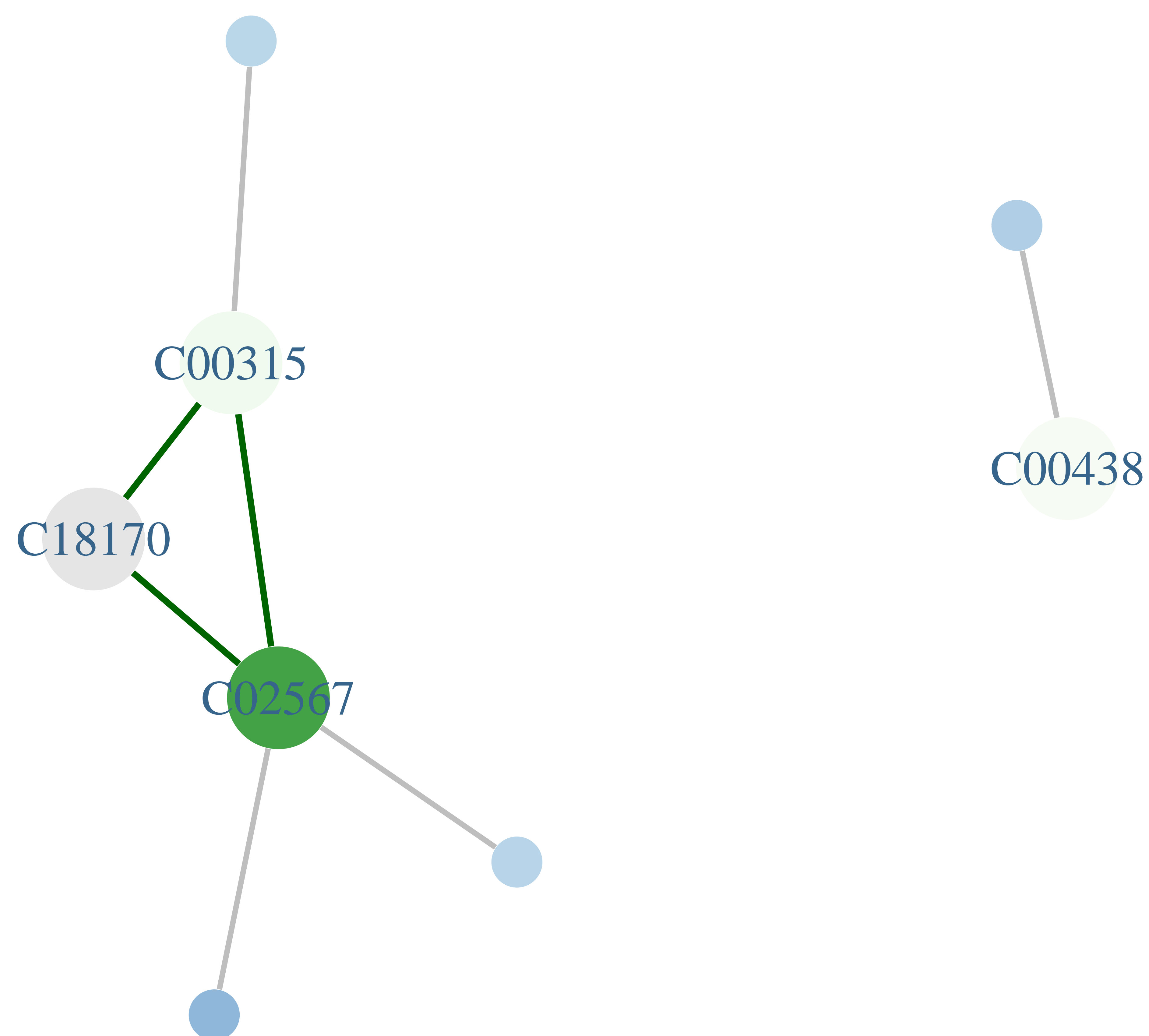
steroid hormone biosynthesis ; p-value: 0.193



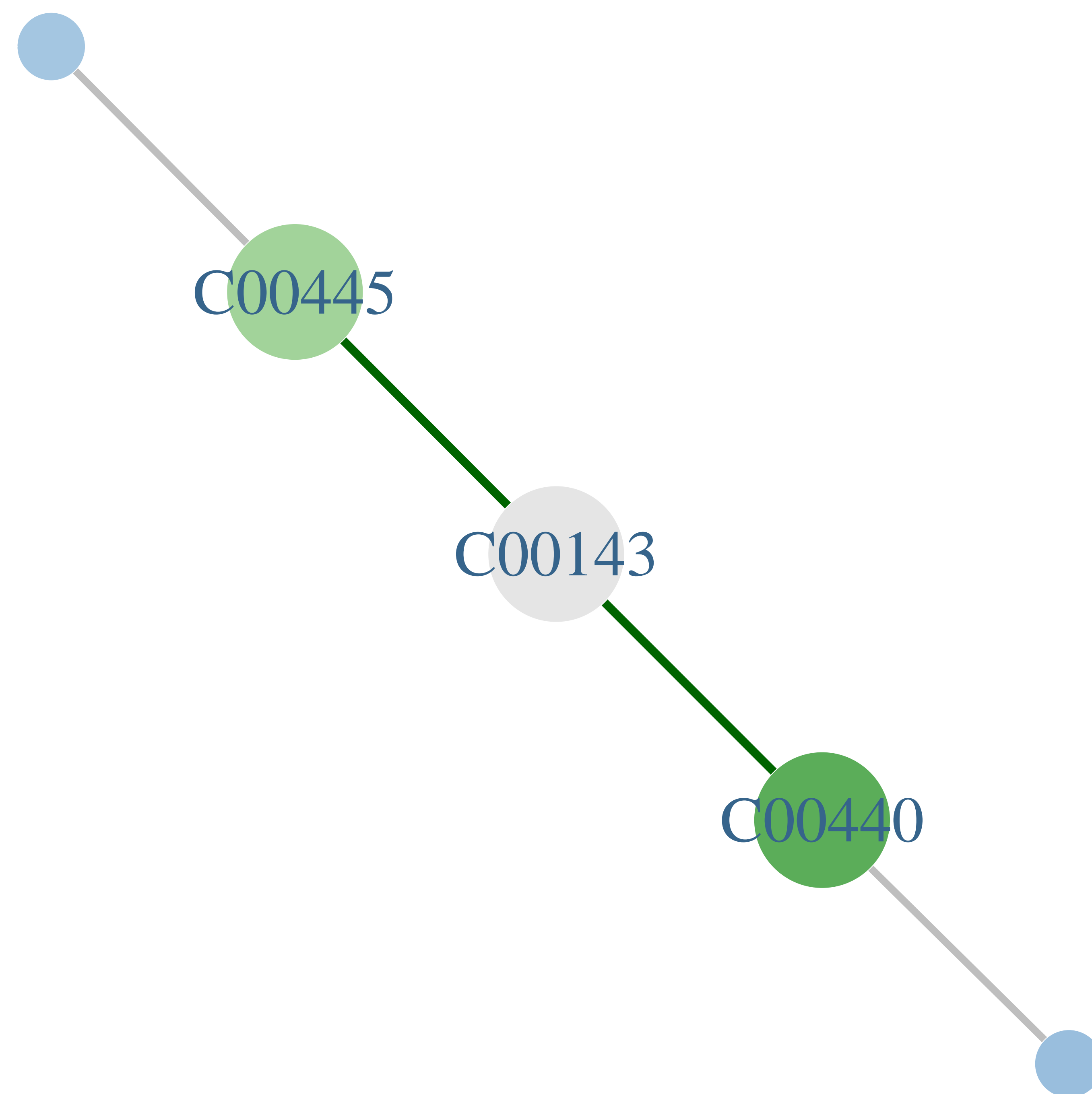
tryptophan metabolism ; p-value: 0.018



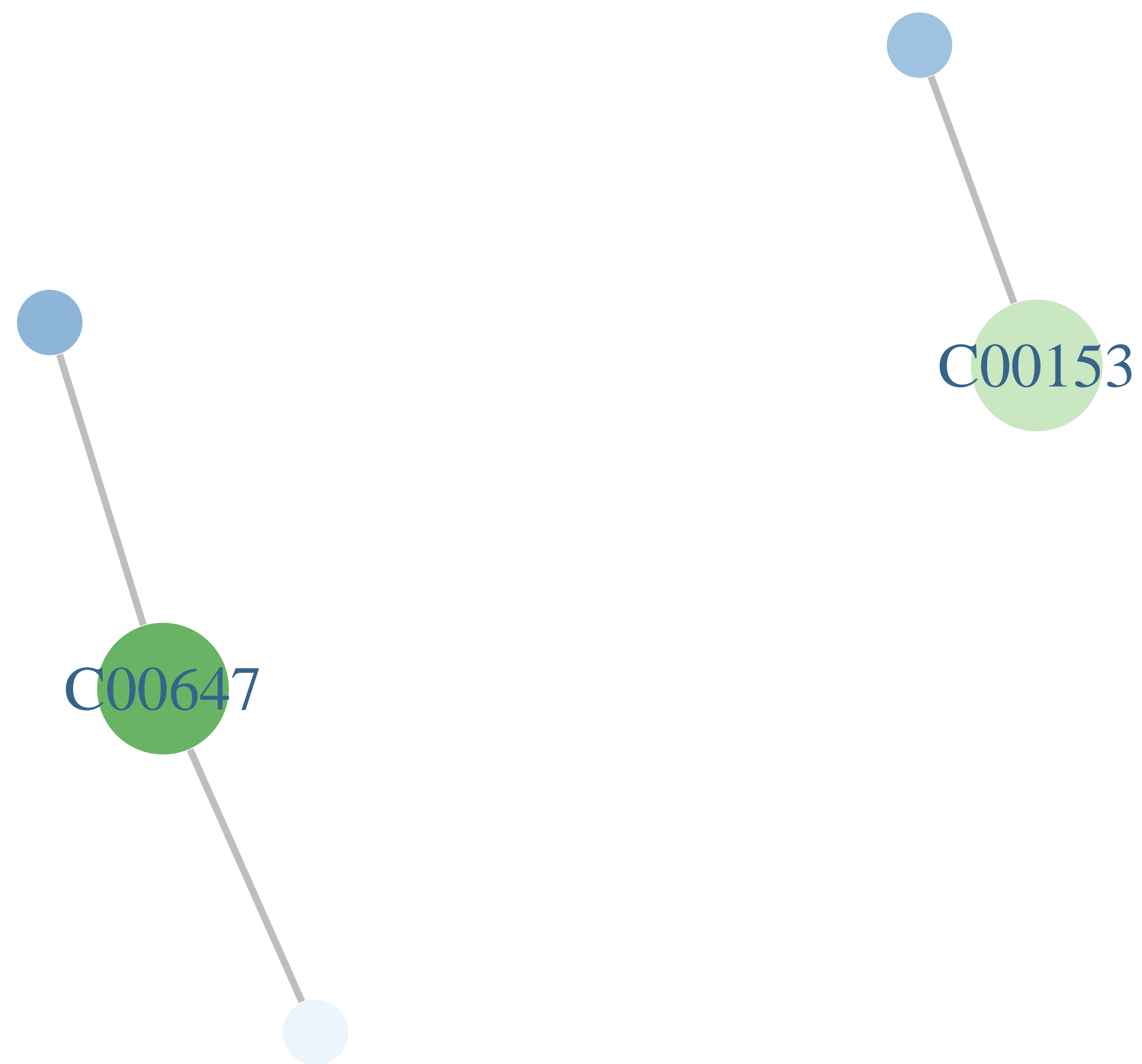
aspartate and asparagine metabolism ; p-value: 0.28



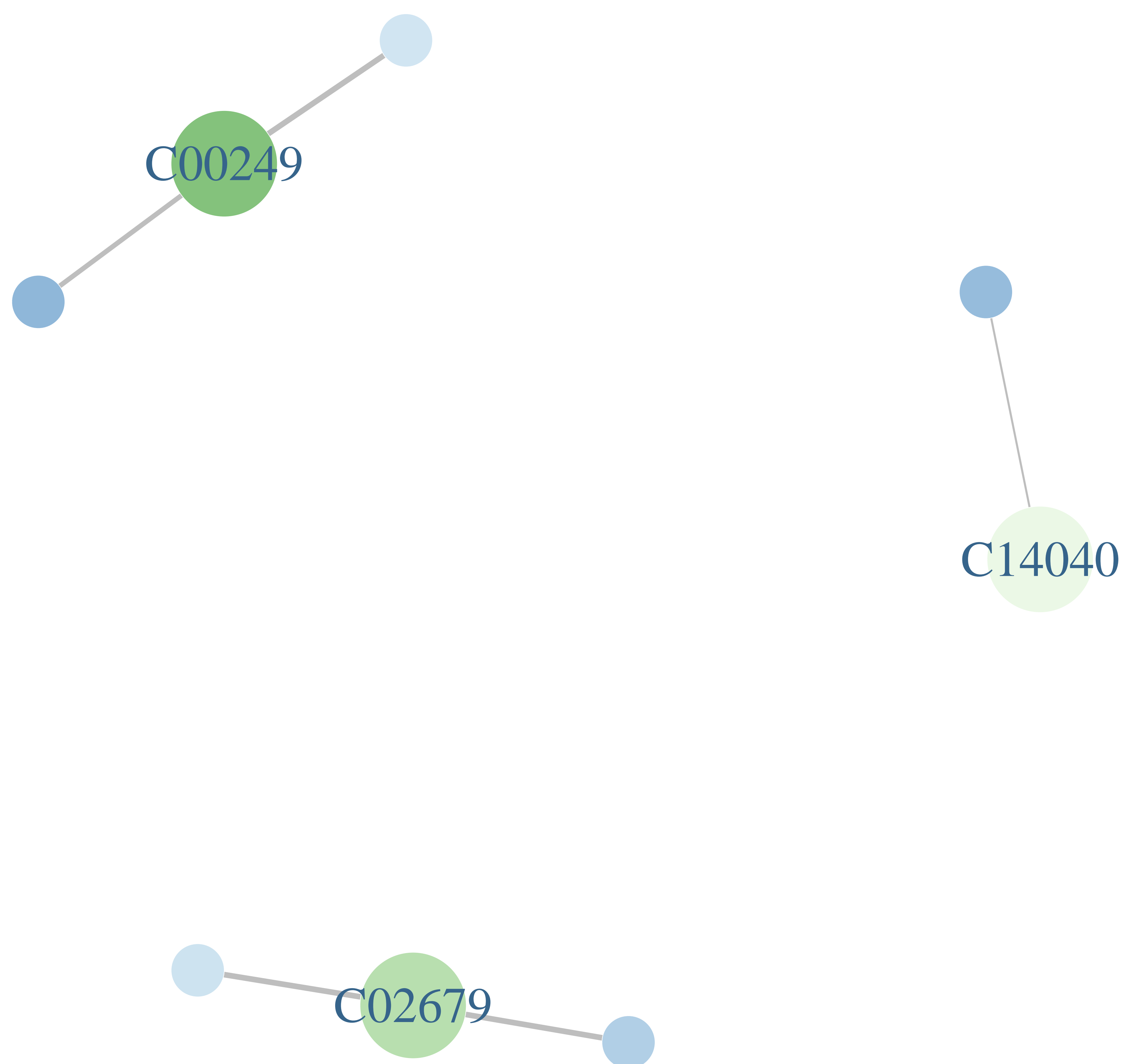
vitamin b9 (folate) metabolism ; p-value: 0.104



vitamin digestion and absorption ; p-value: 0.163



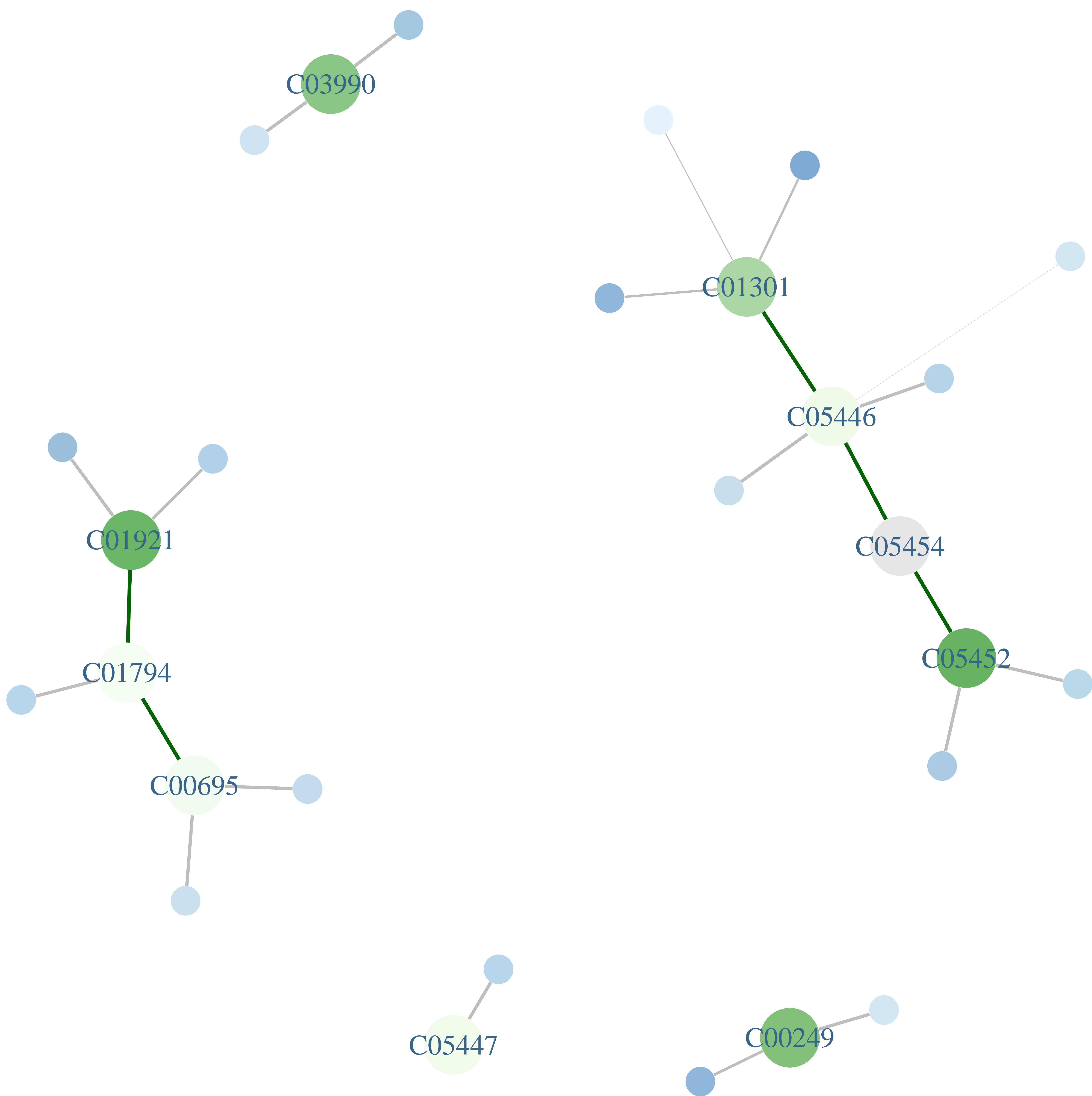
xenobiotics metabolism ; p-value: 0.292



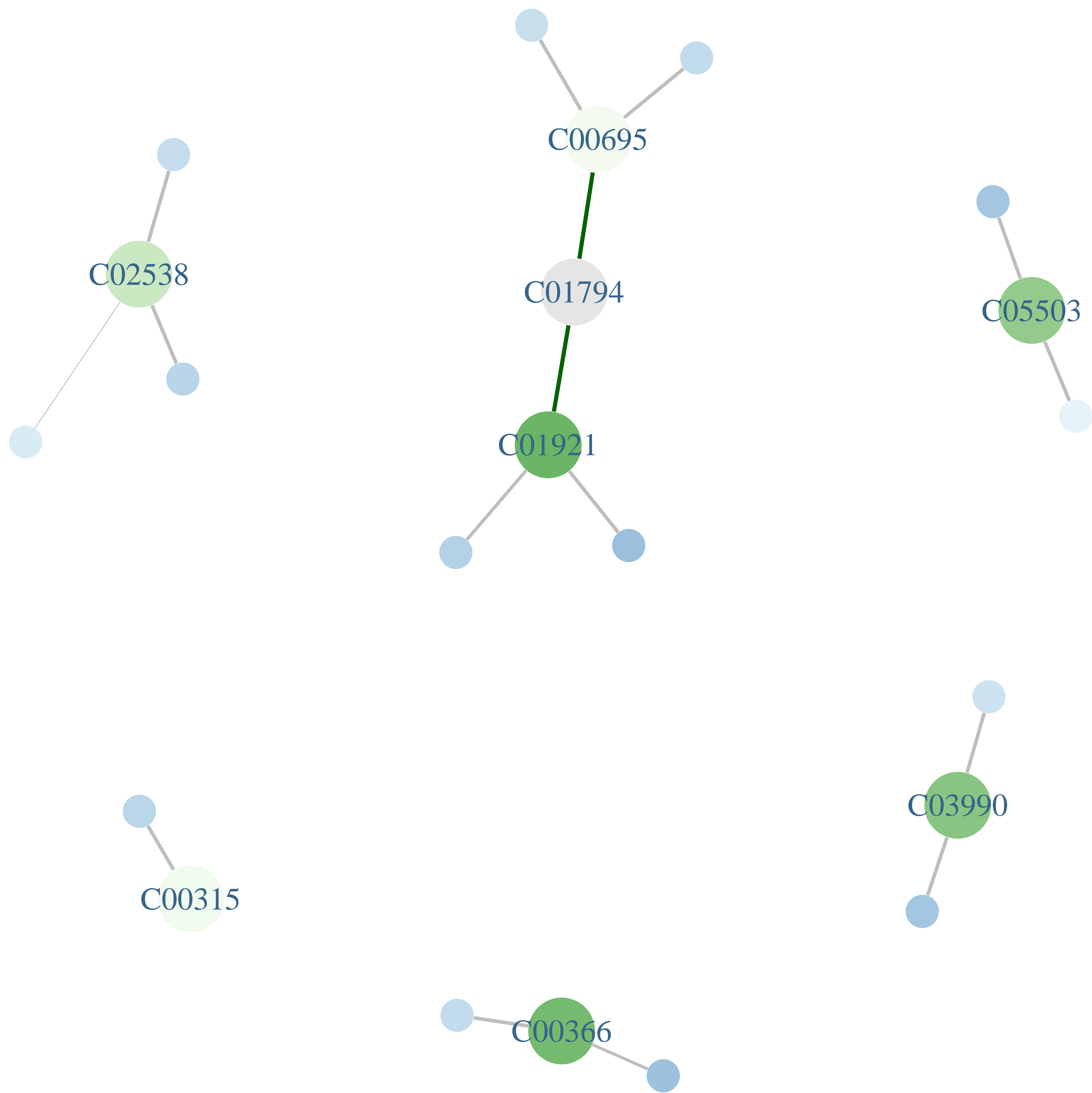
beta oxidation of very long chain fatty acids ; p-value: 0.024



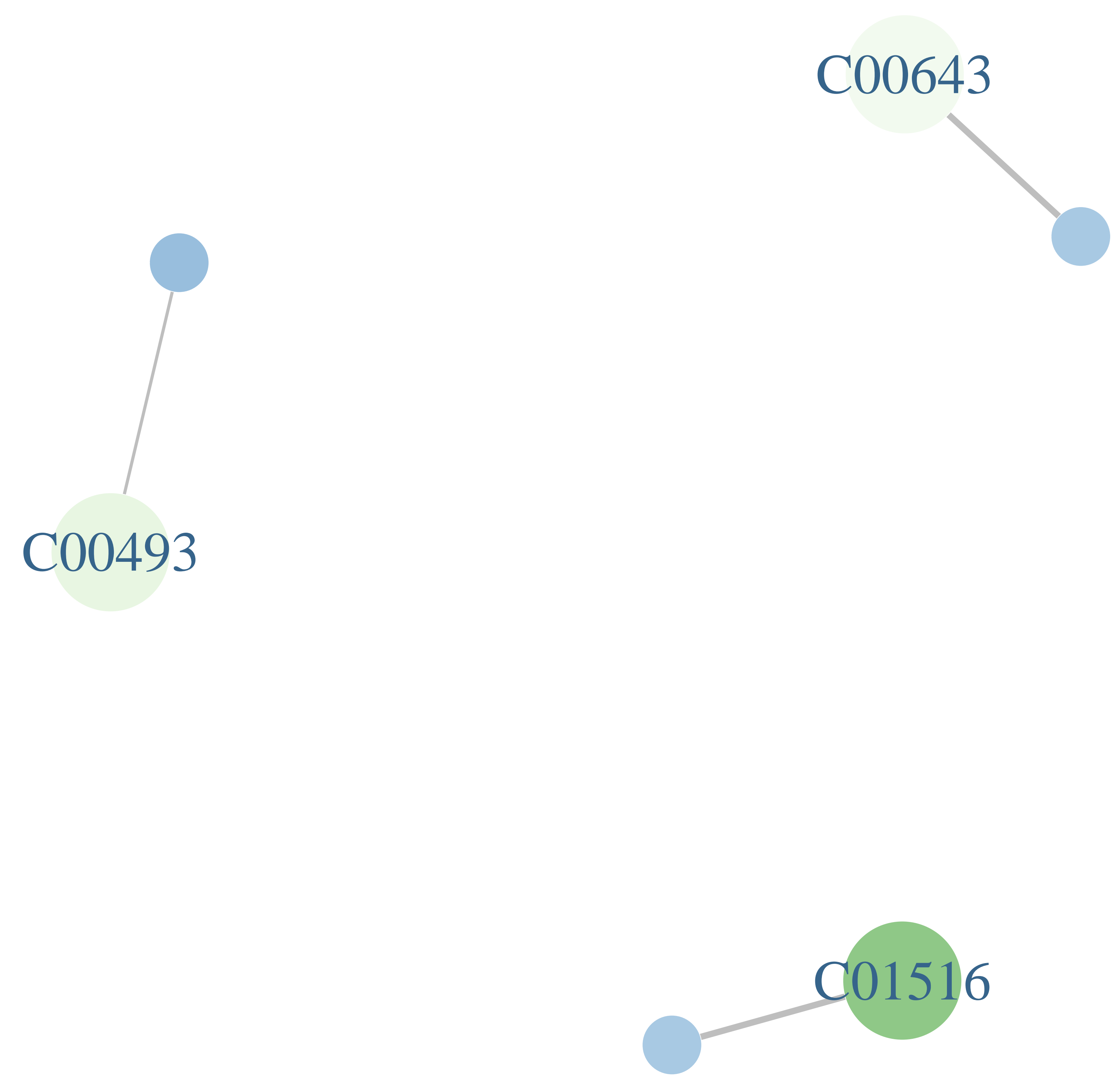
bile acid biosynthesis ; p-value: 0



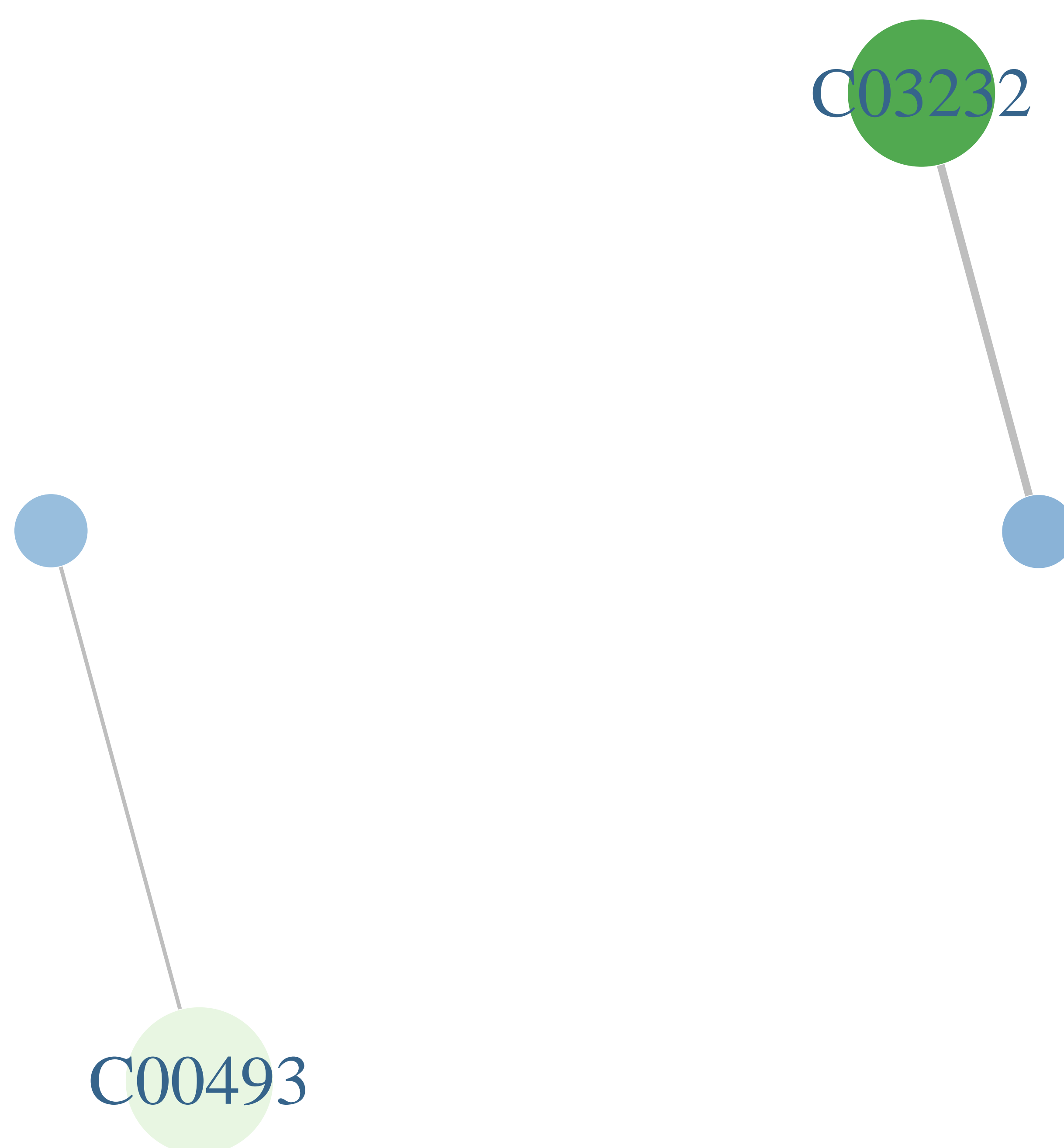
bile secretion ; p-value: 0.001



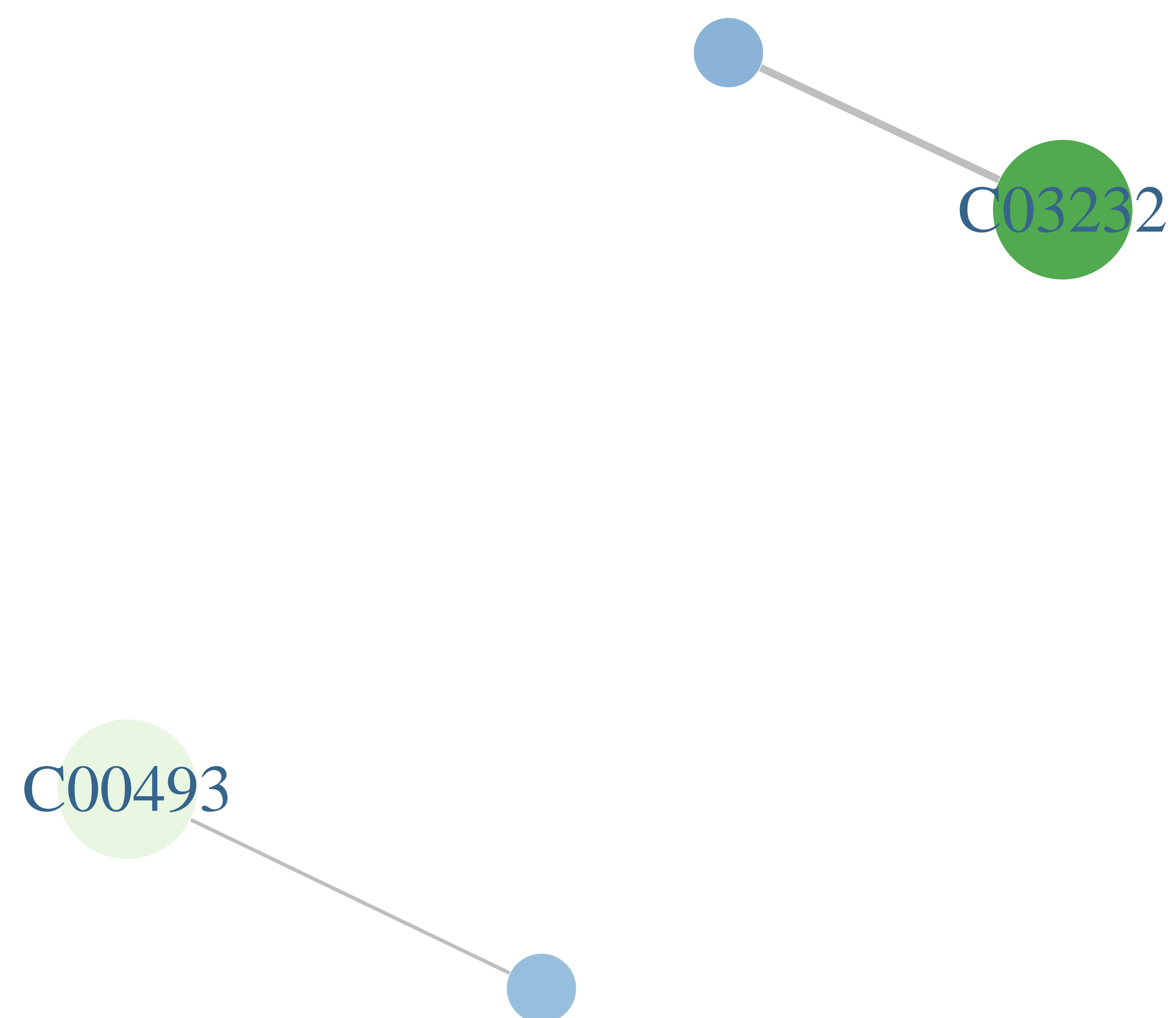
biosynthesis of alkaloids derived from shikimate pathway ; p-value: 0.145



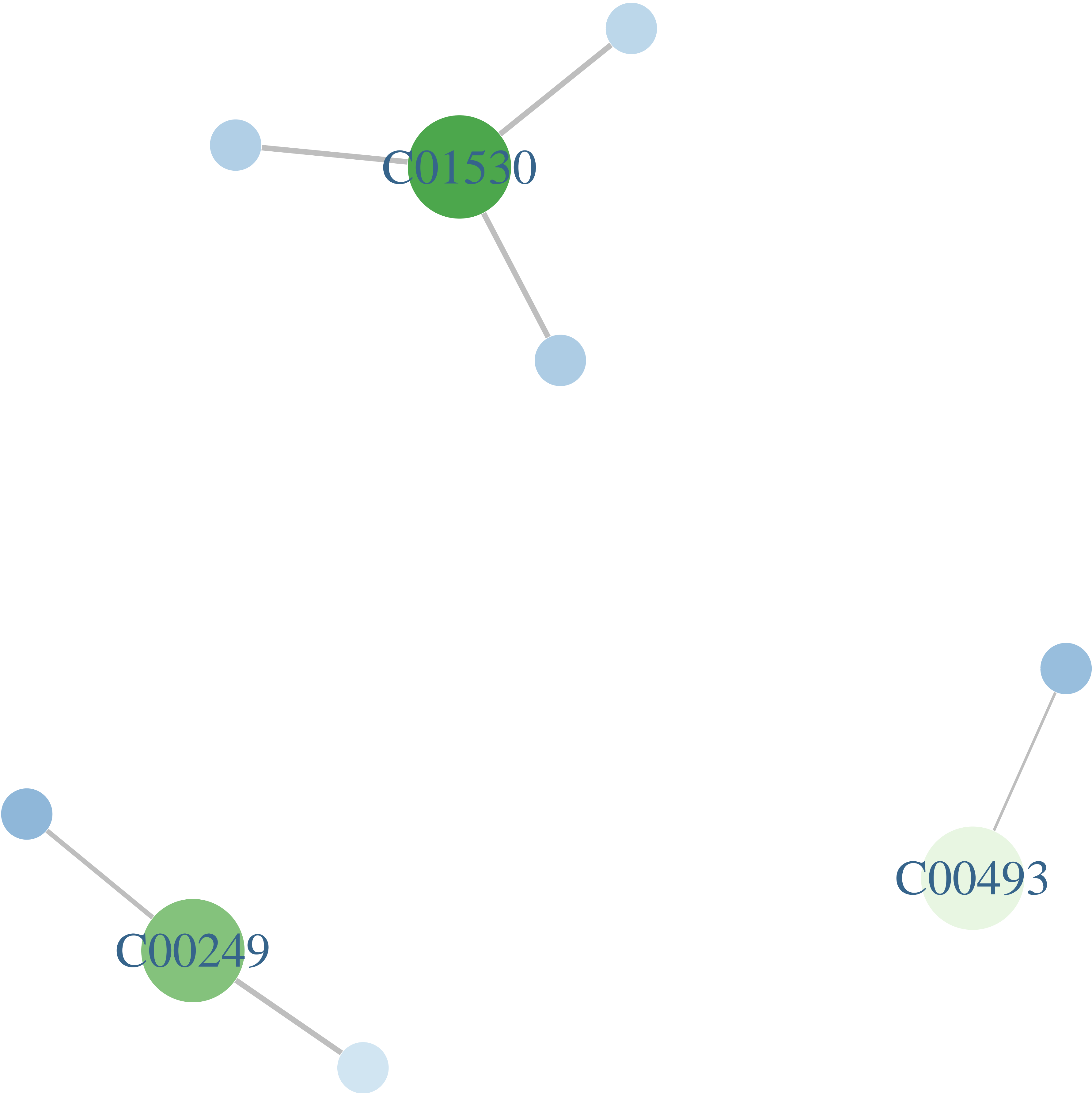
biosynthesis of amino acids ; p-value: 0.813



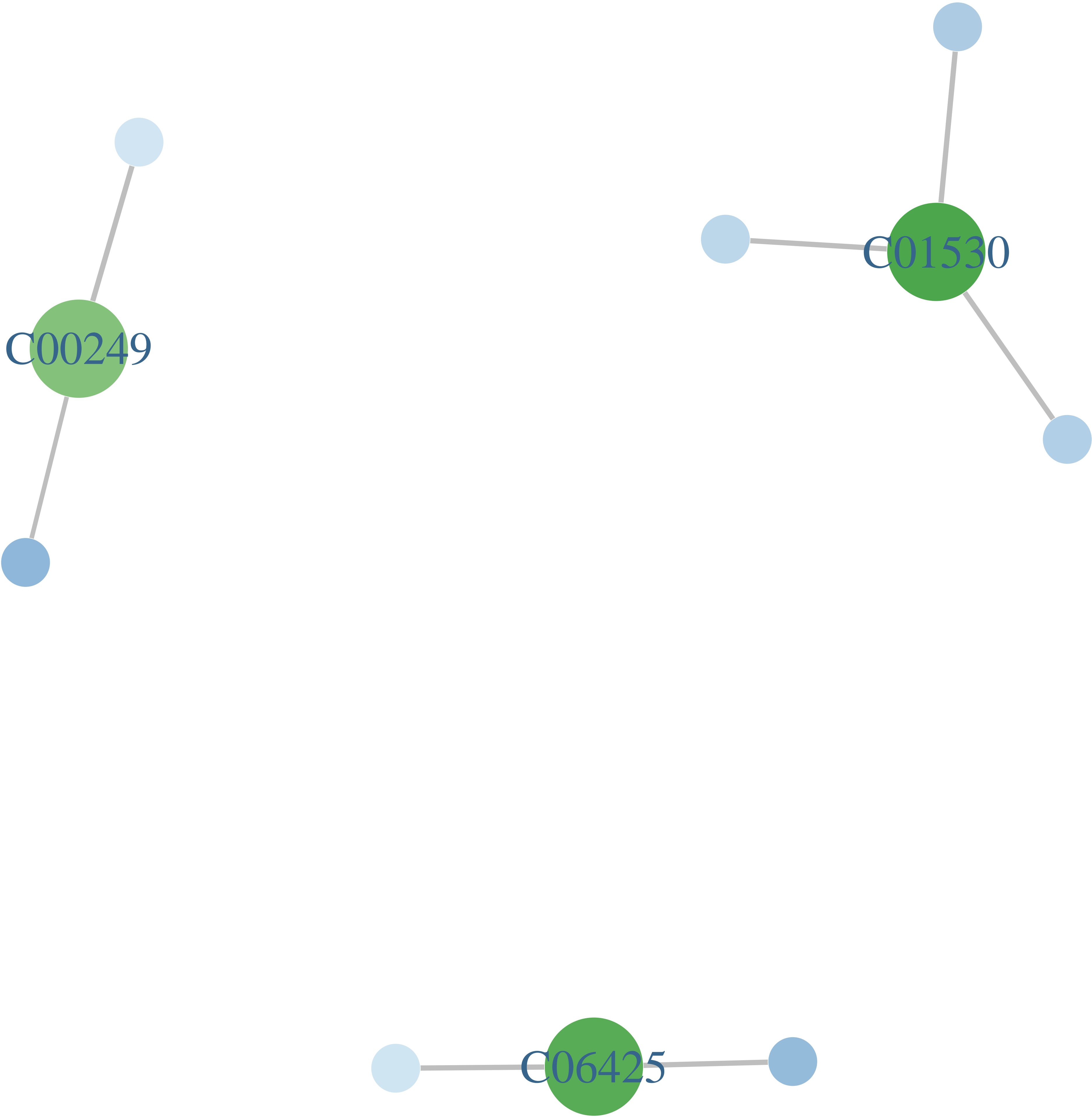
biosynthesis of antibiotics ; p-value: 0.986



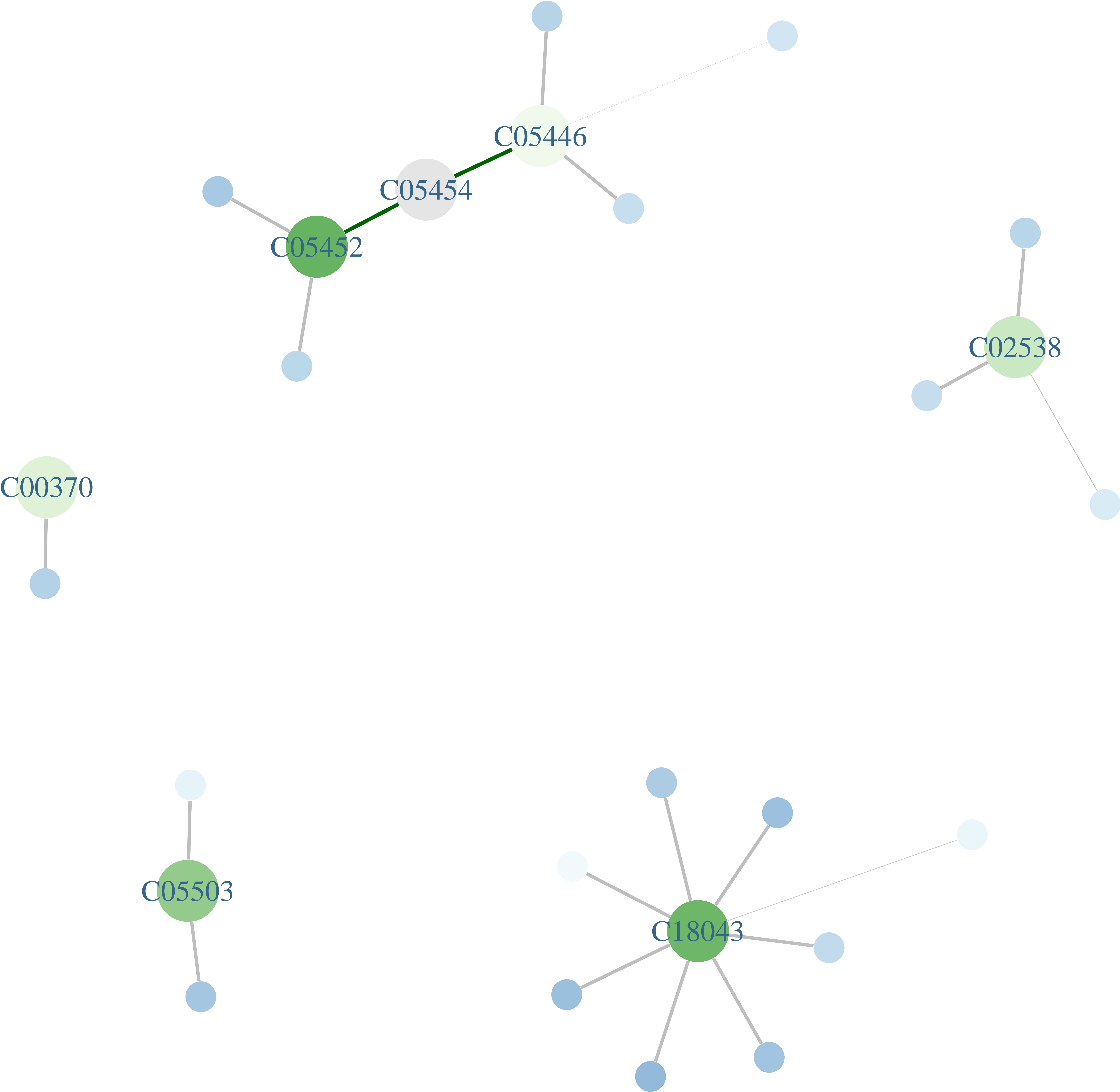
biosynthesis of plant secondary metabolites ; p-value: 0.586



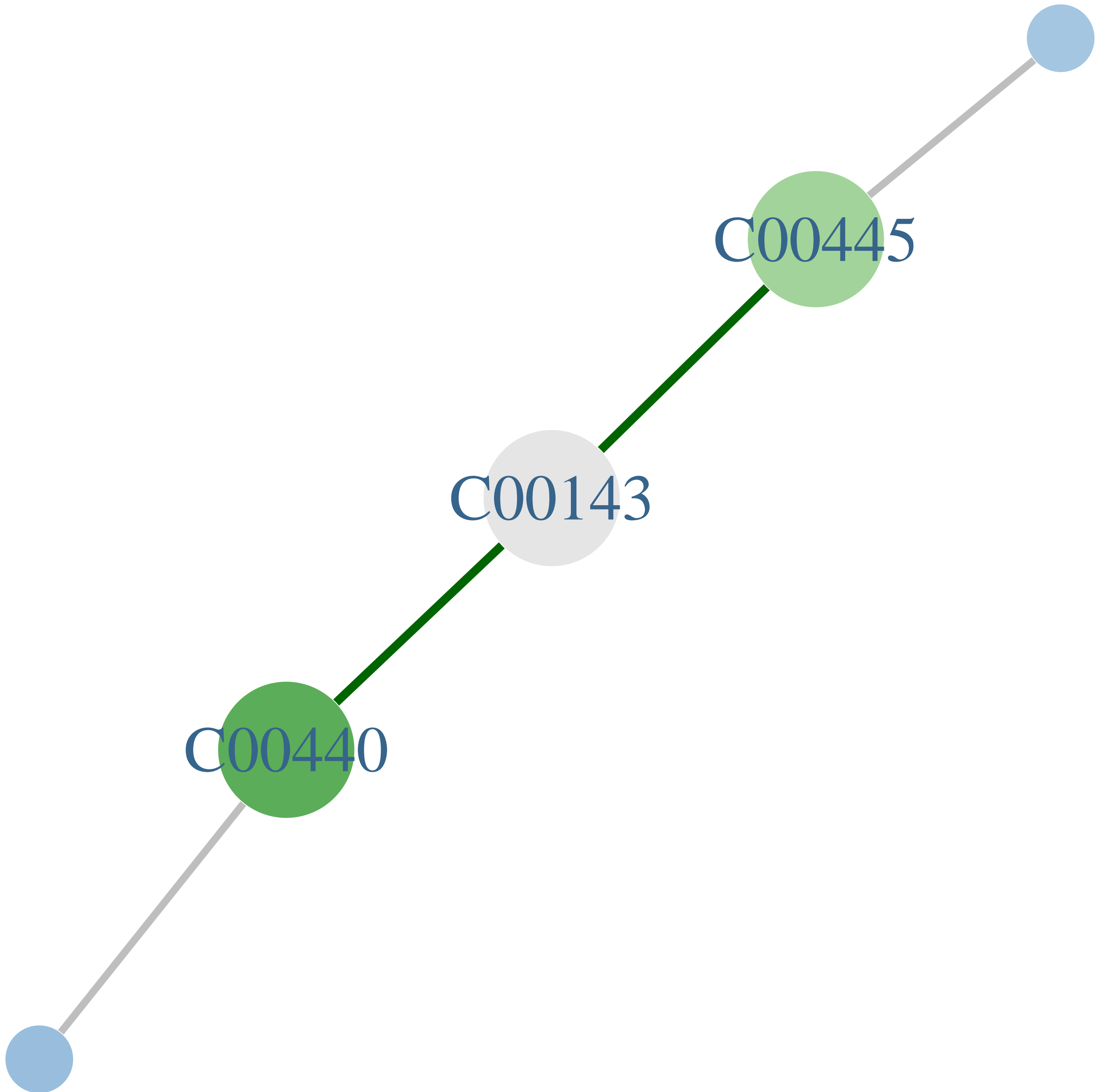
biosynthesis of unsaturated fatty acids ; p-value: 0.045



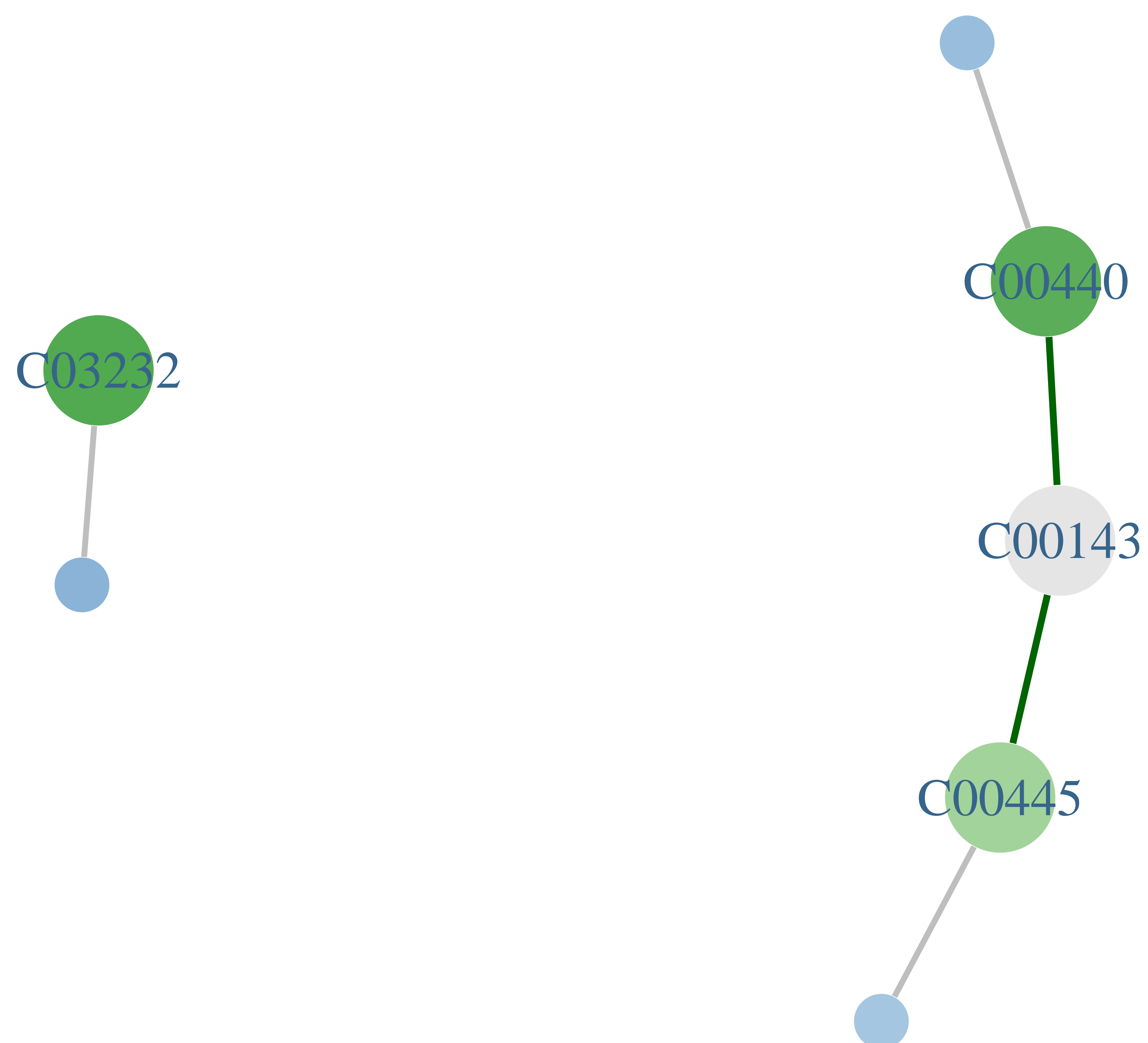
c21-steroid hormone biosynthesis and metabolism ; p-value: 0.044



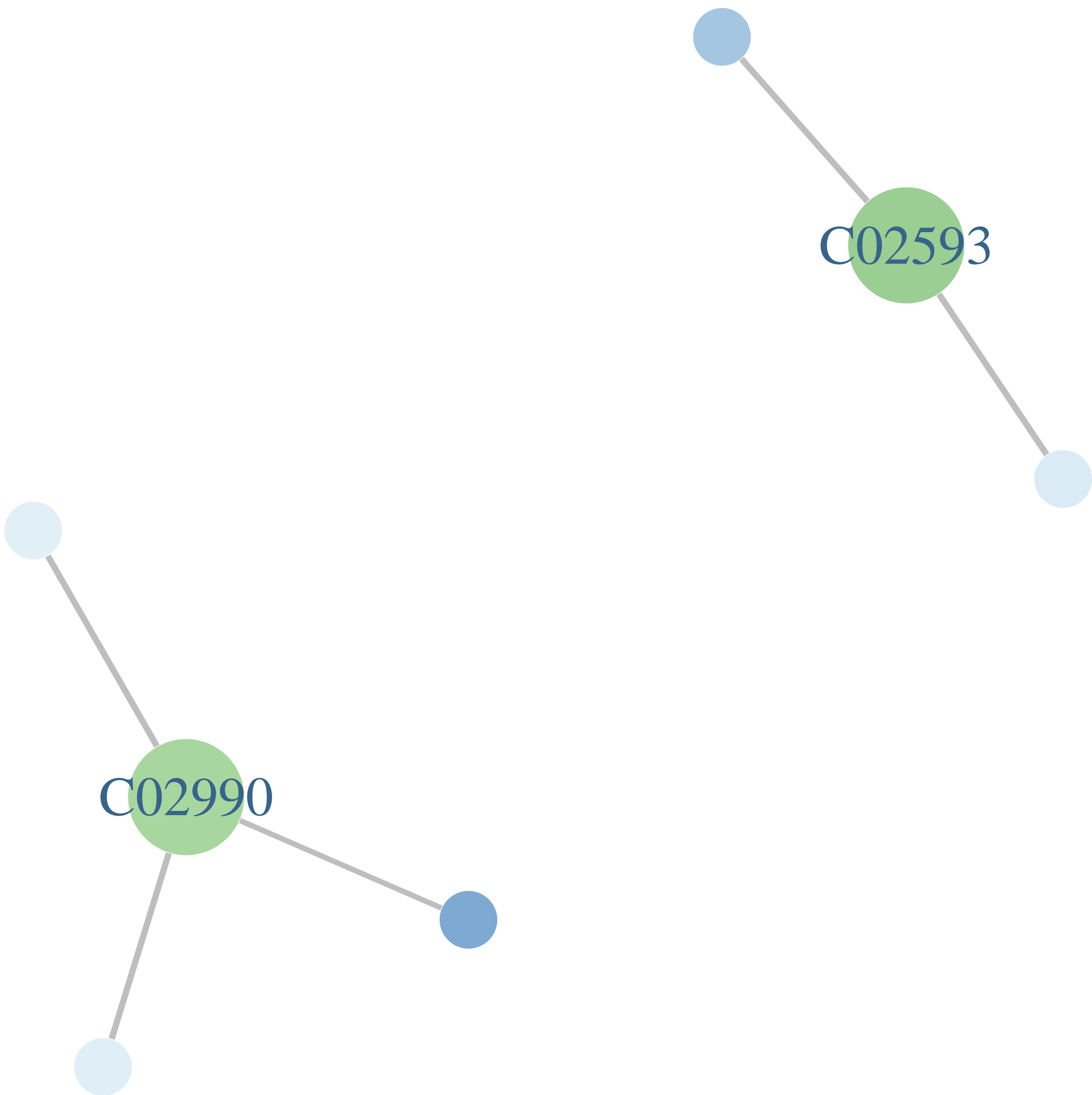
carbon fixation pathways in prokaryotes ; p-value: 0.243



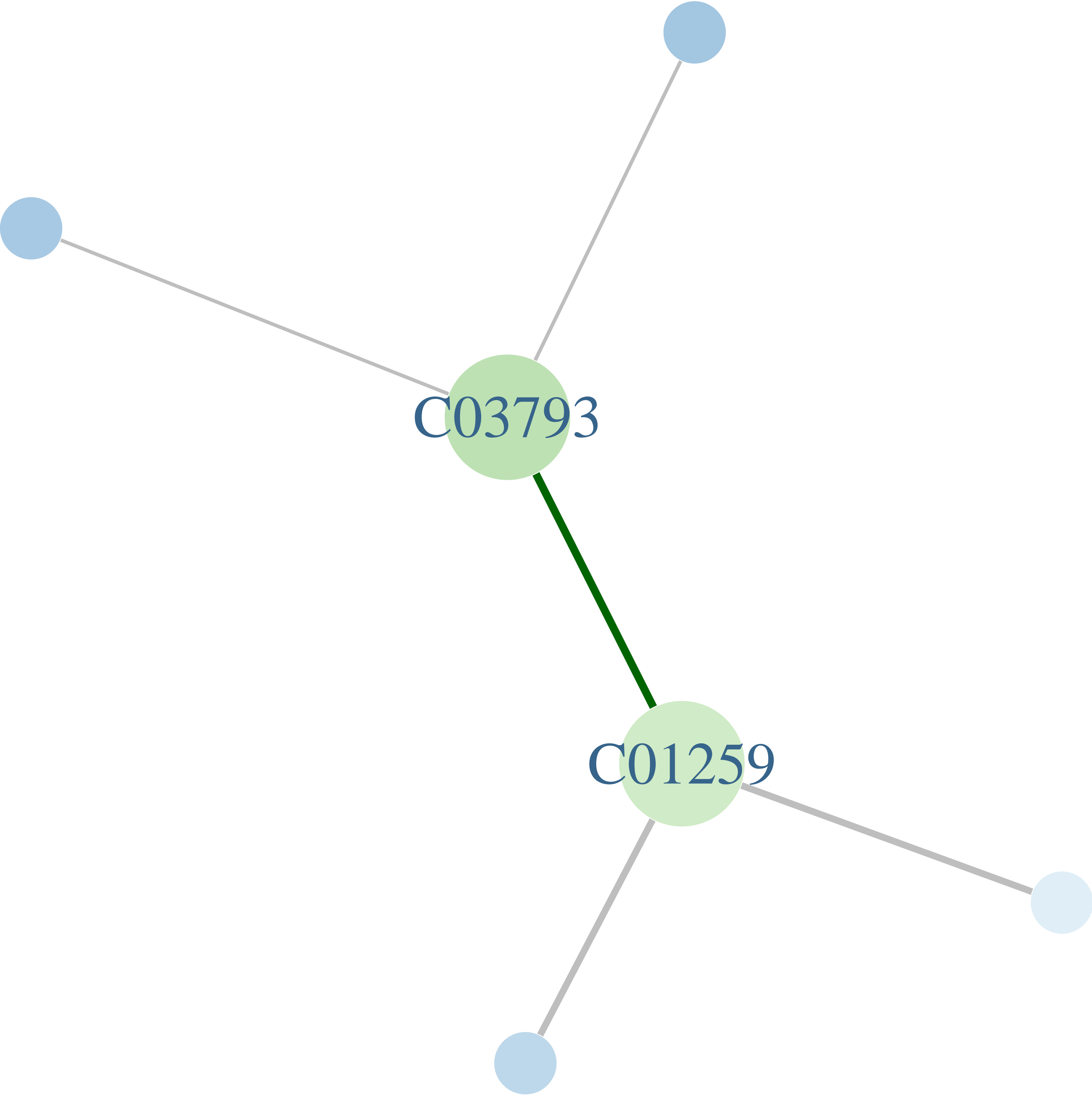
carbon metabolism ; p-value: 0.423



carnitine shuttle ; p-value: 0.119

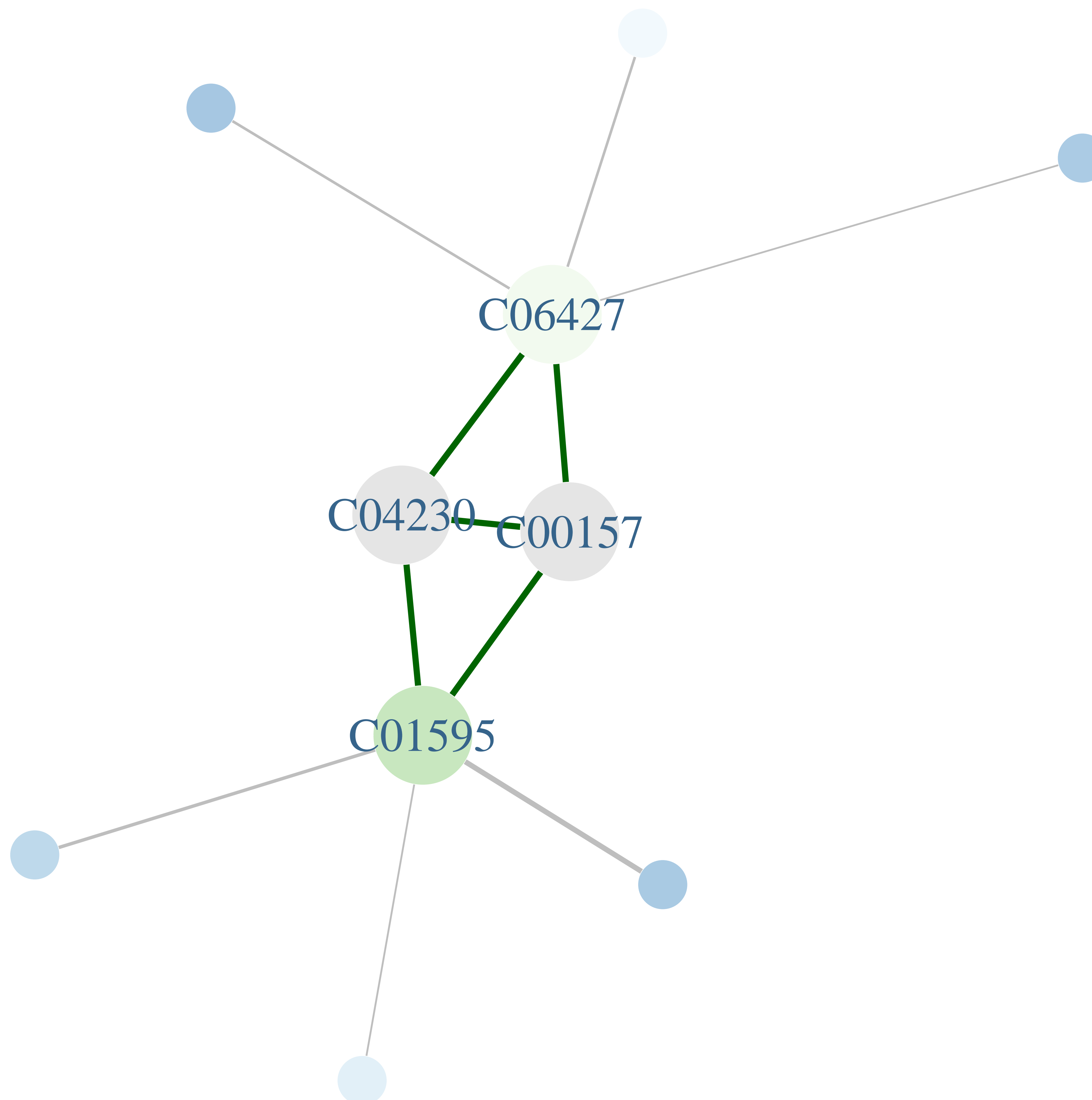


carnitine synthesis ; p-value: 0.043

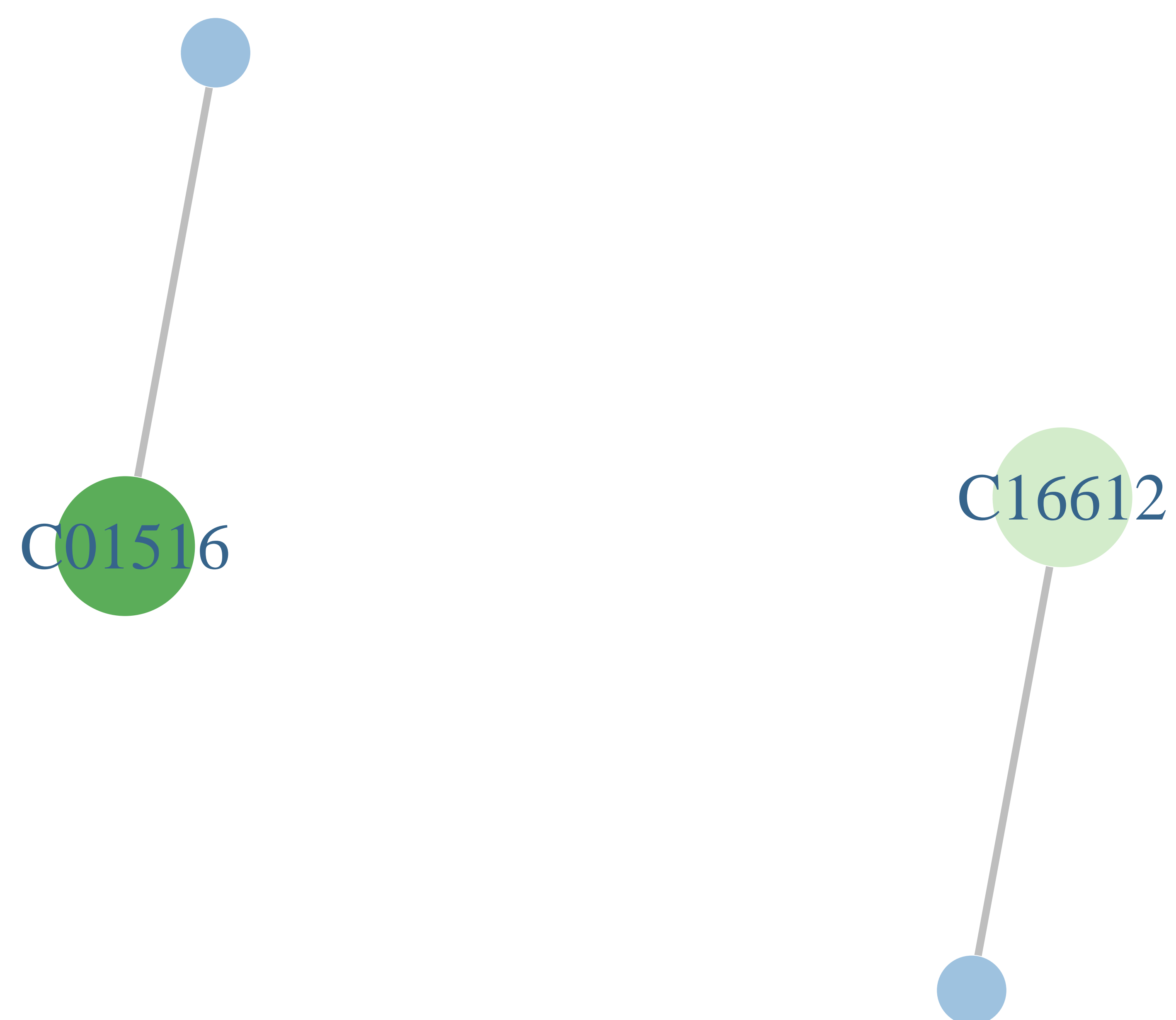


Mouse Brain Metabolomics Data
Olfactory Bulb Week 3 v.s. Week 16
Pathway Plots

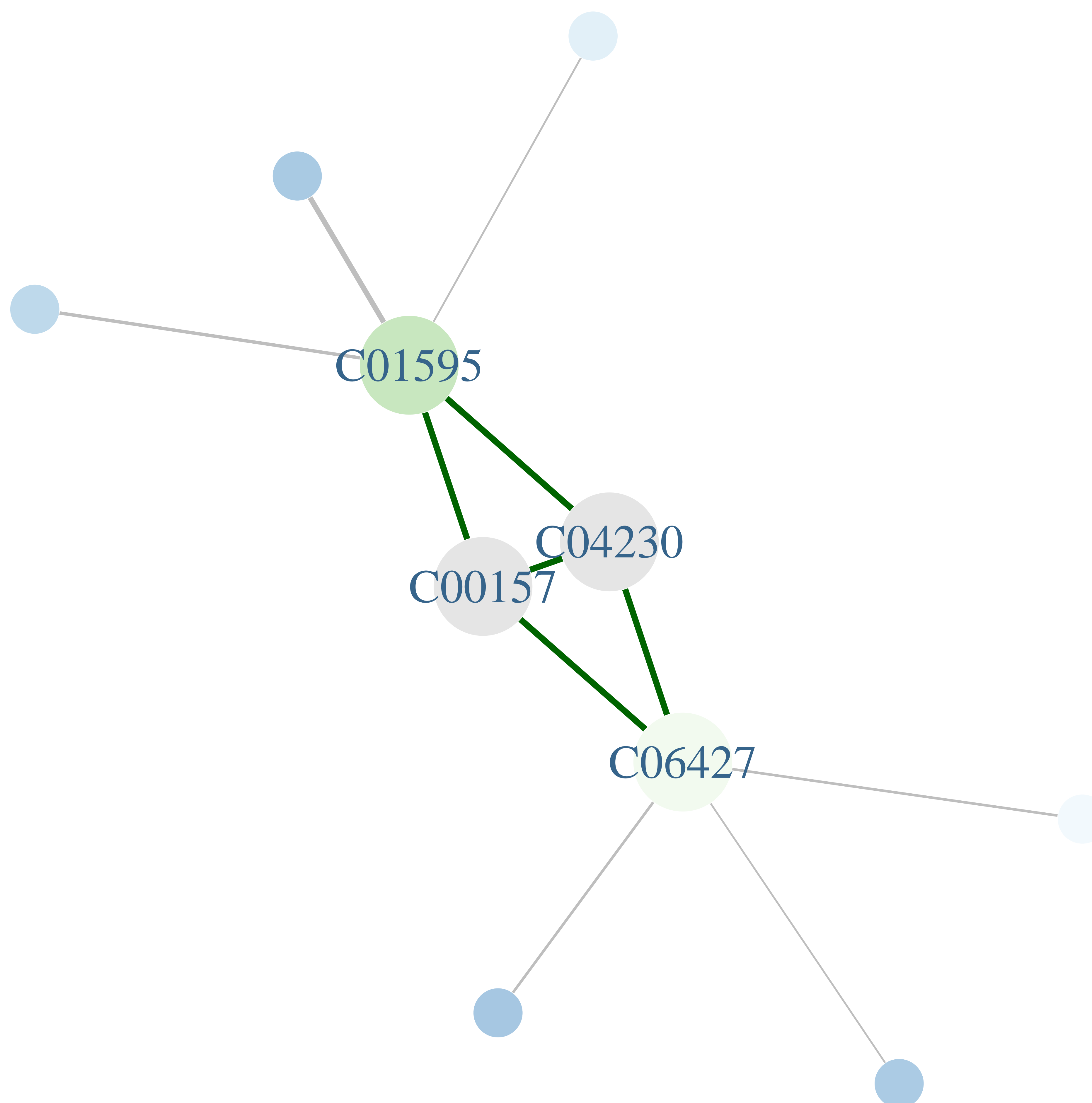
de novo fatty acid biosynthesis ; p-value: 0.243



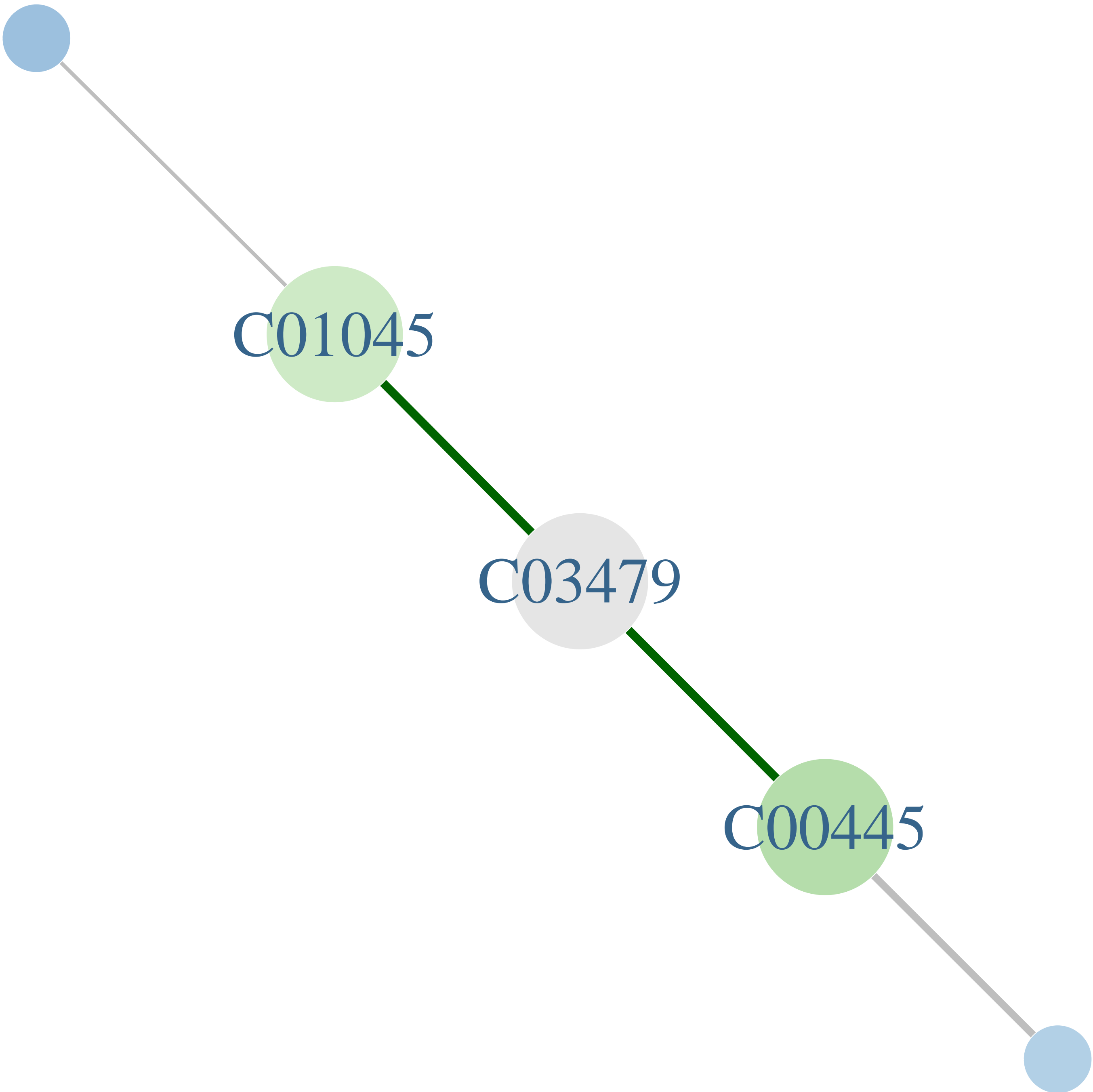
drug metabolism – cytochrome p450 ; p-value: 0.257



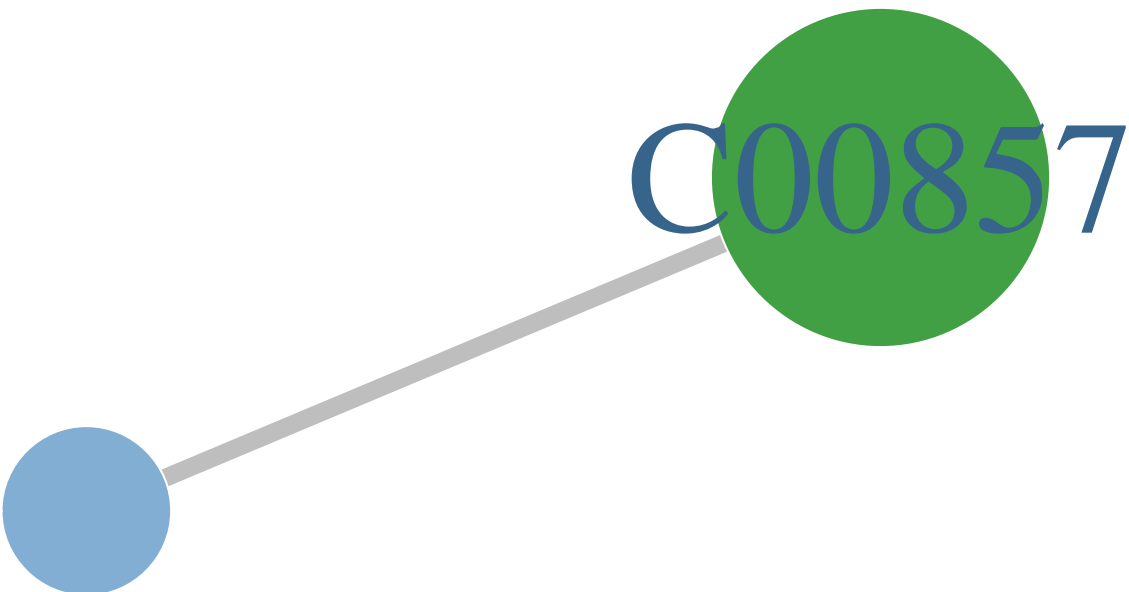
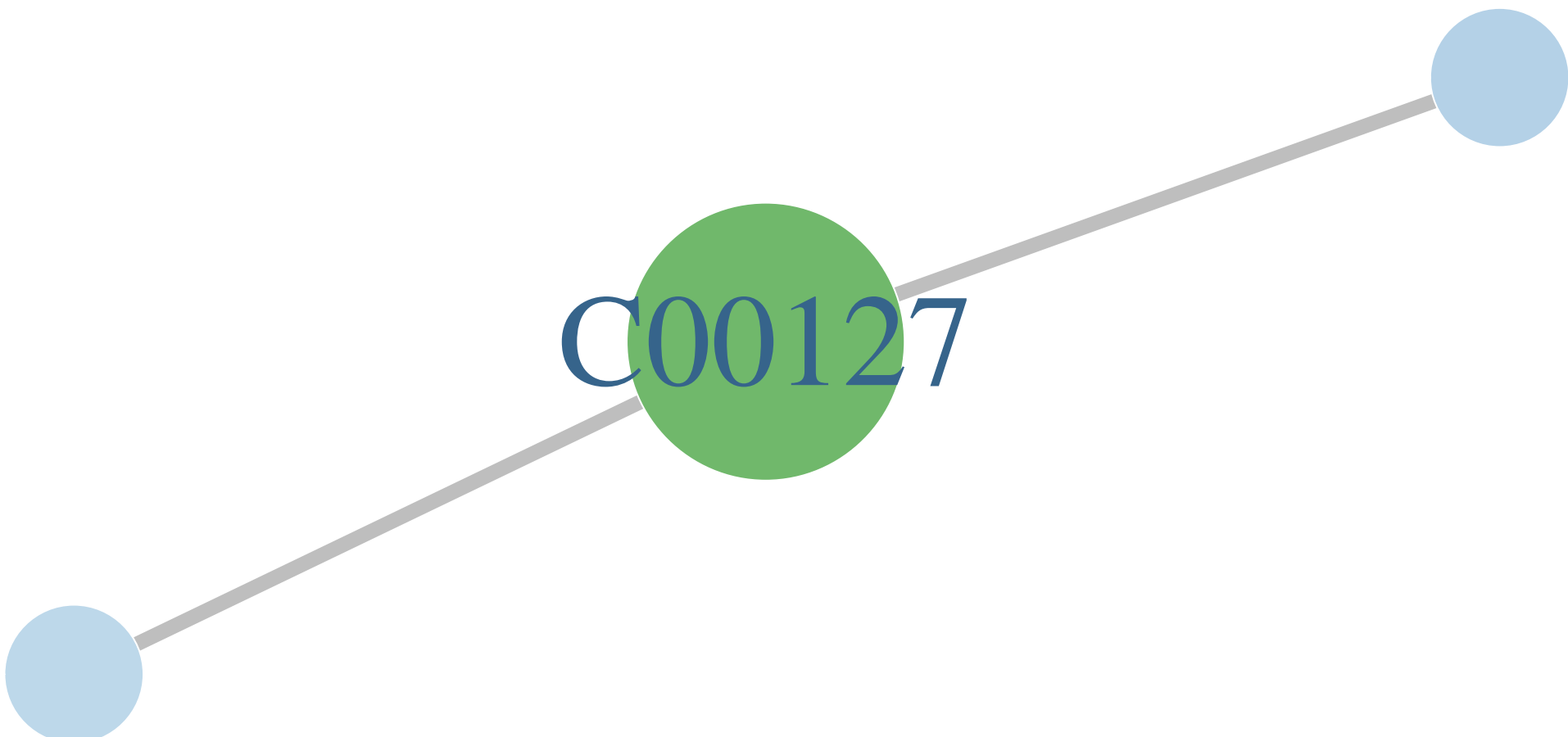
fatty acid activation ; p-value: 0.243



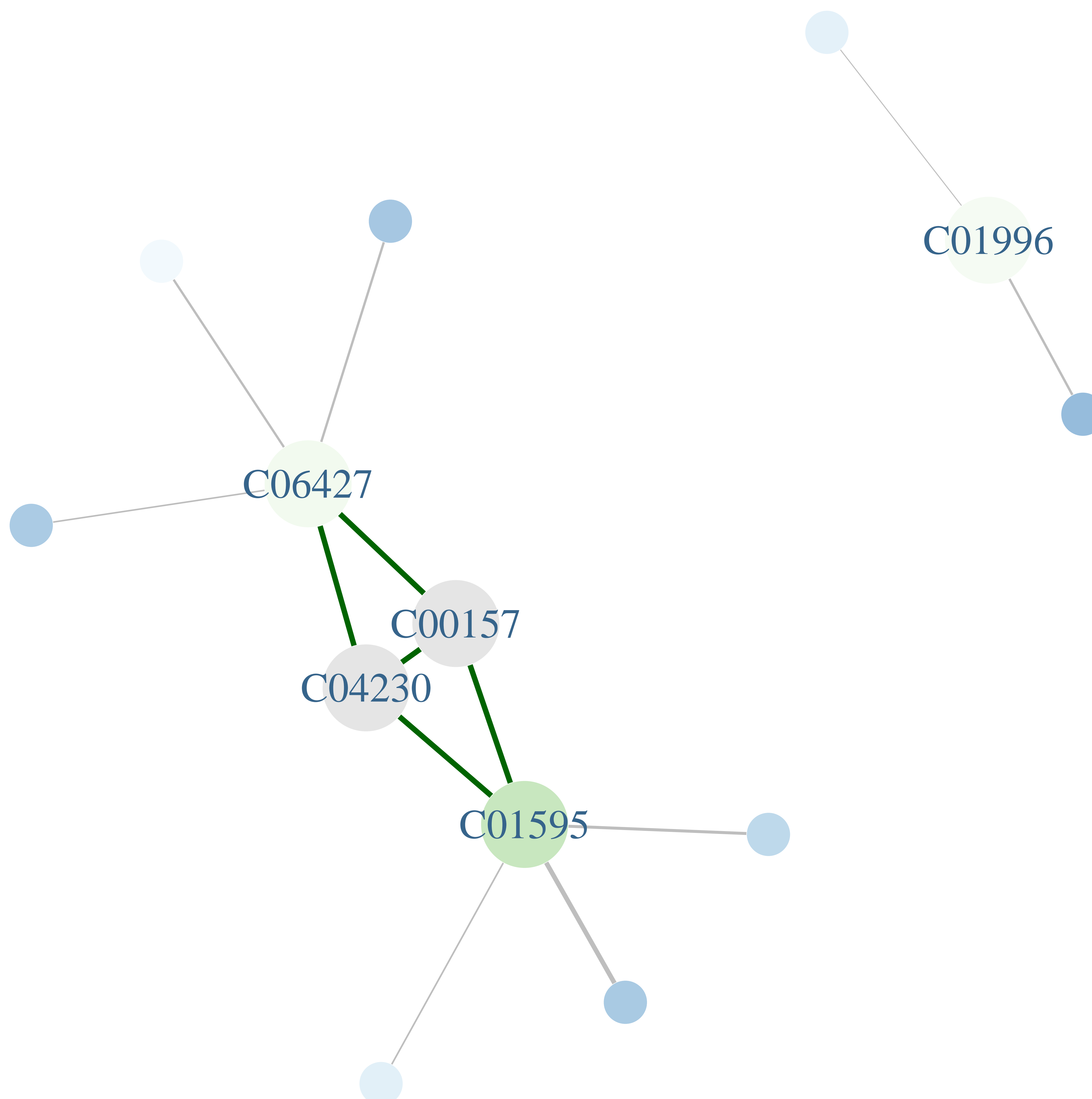
folate metabolism ; p-value: 0.062



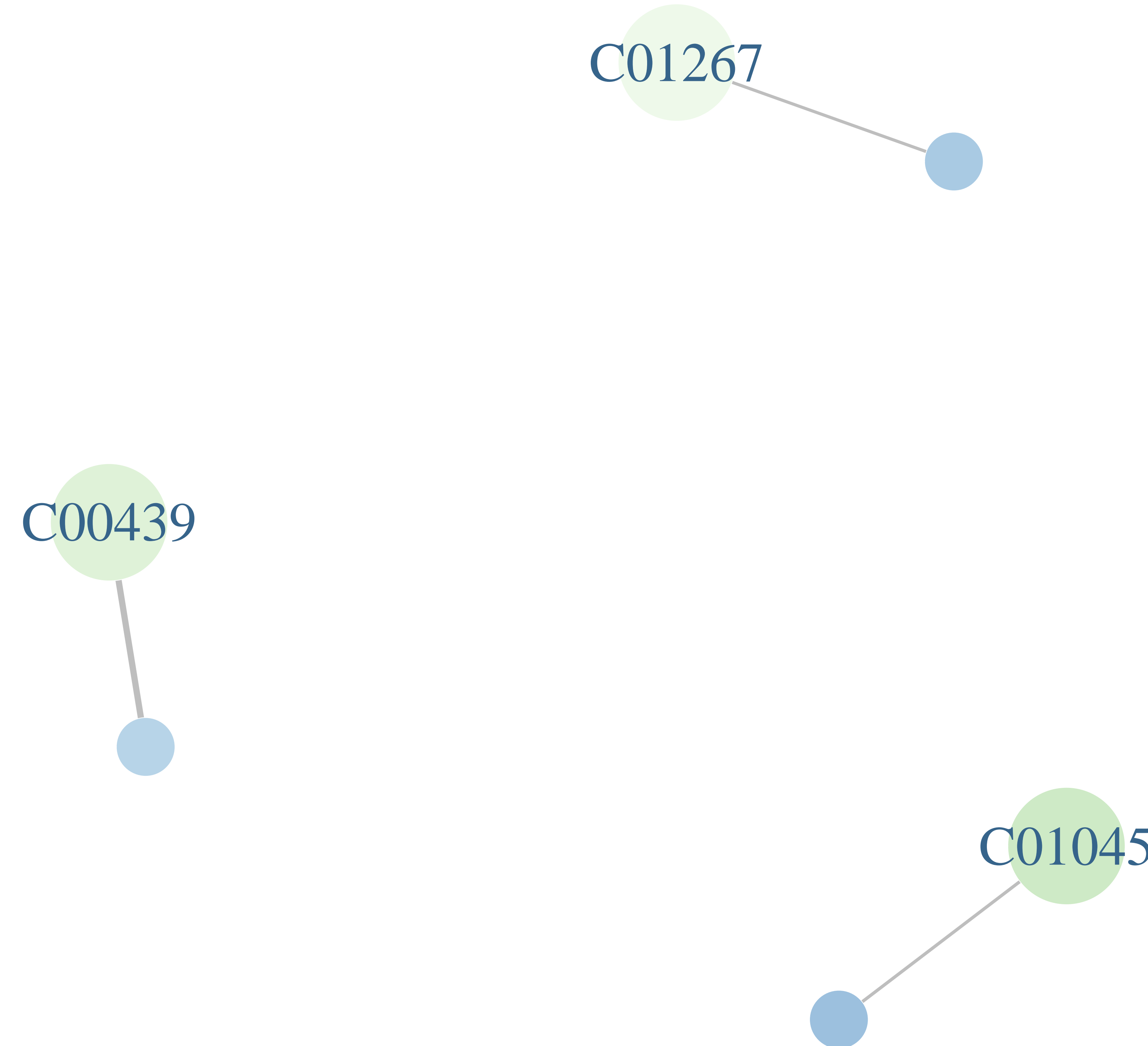
glutamate metabolism ; p-value: 0.159



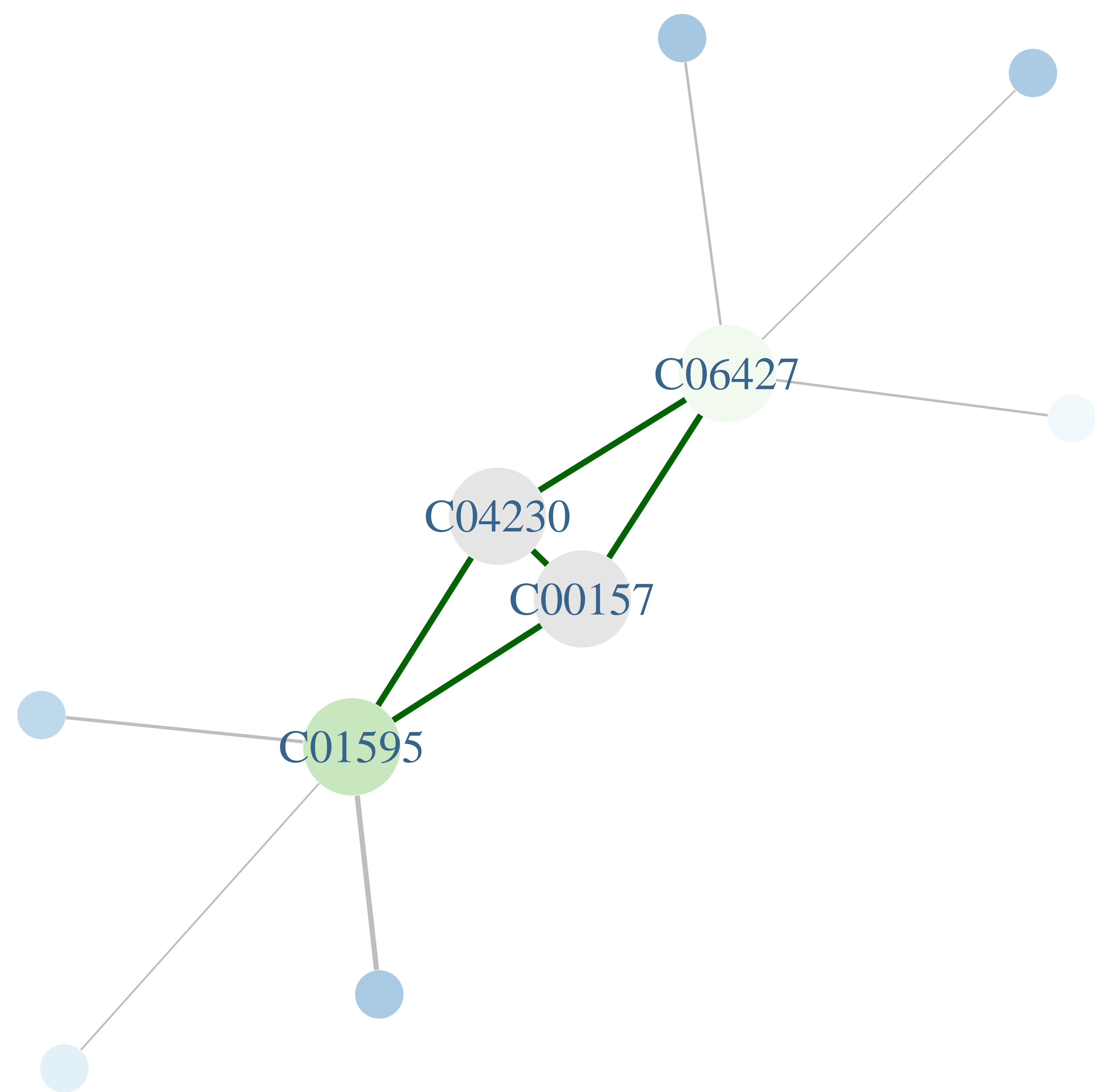
glycerophospholipid metabolism ; p-value: 0.313



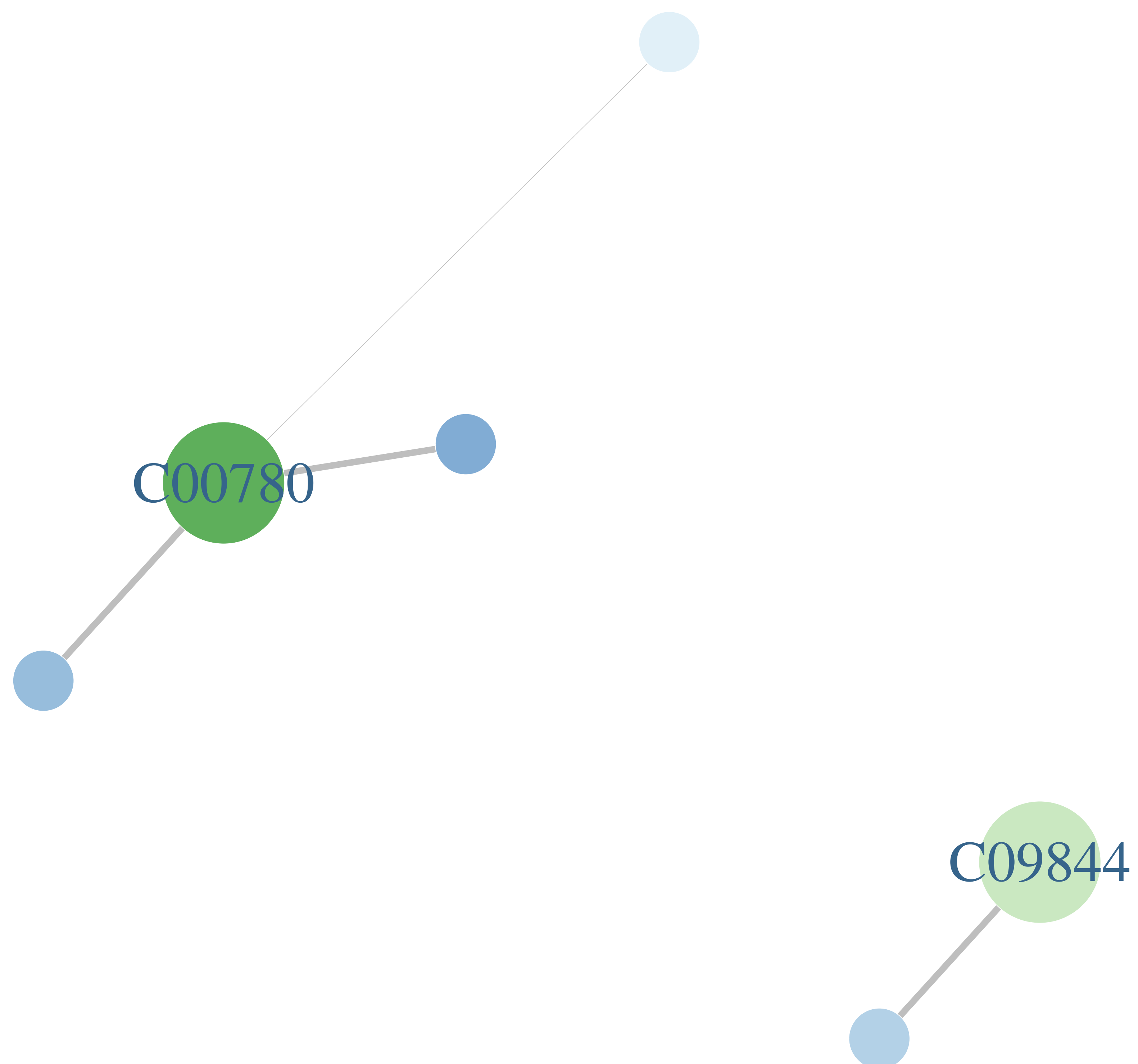
histidine metabolism ; p-value: 0.094



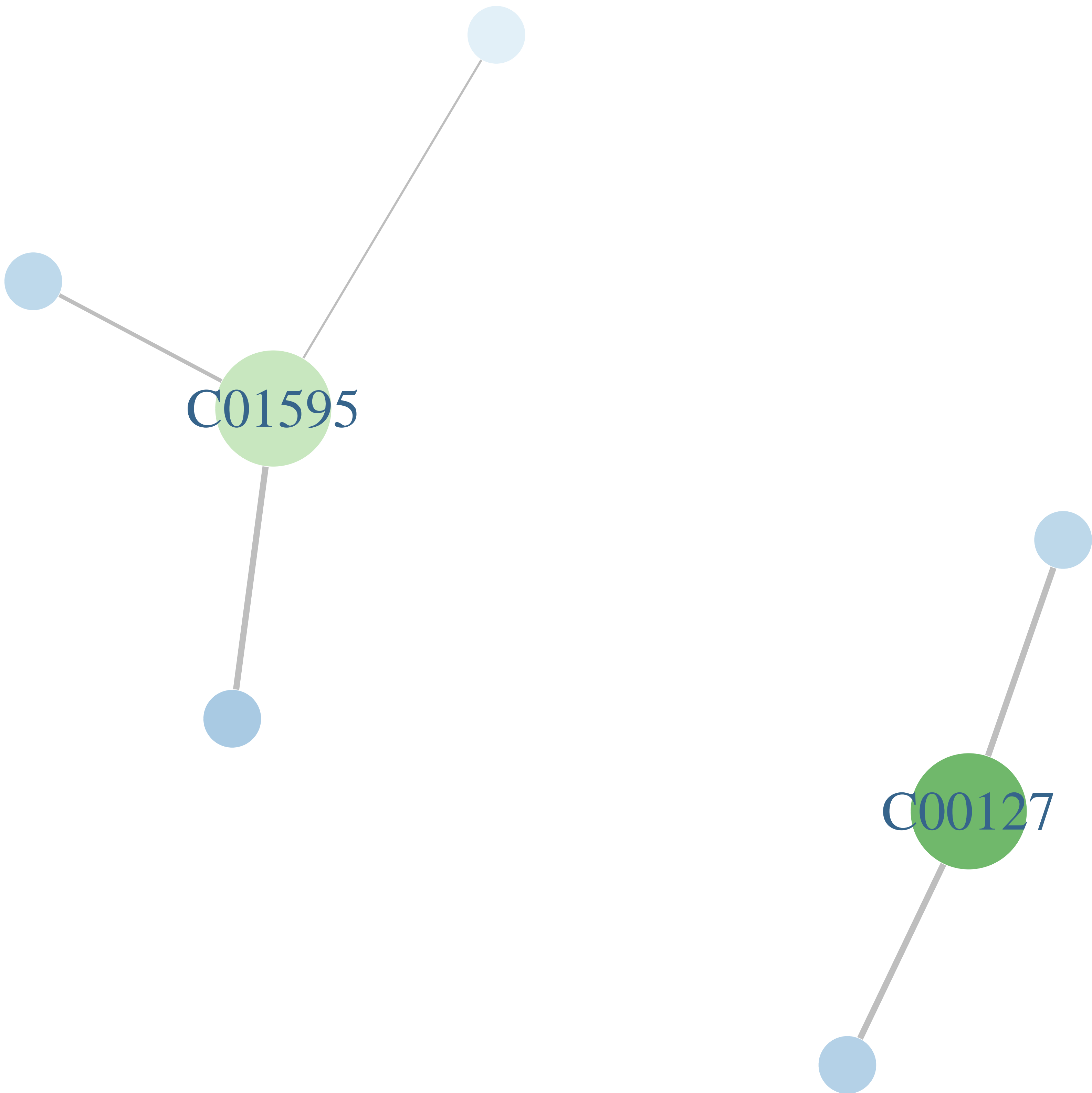
alpha linolenic acid and linoleic acid metabolism ; p-value: 0.026



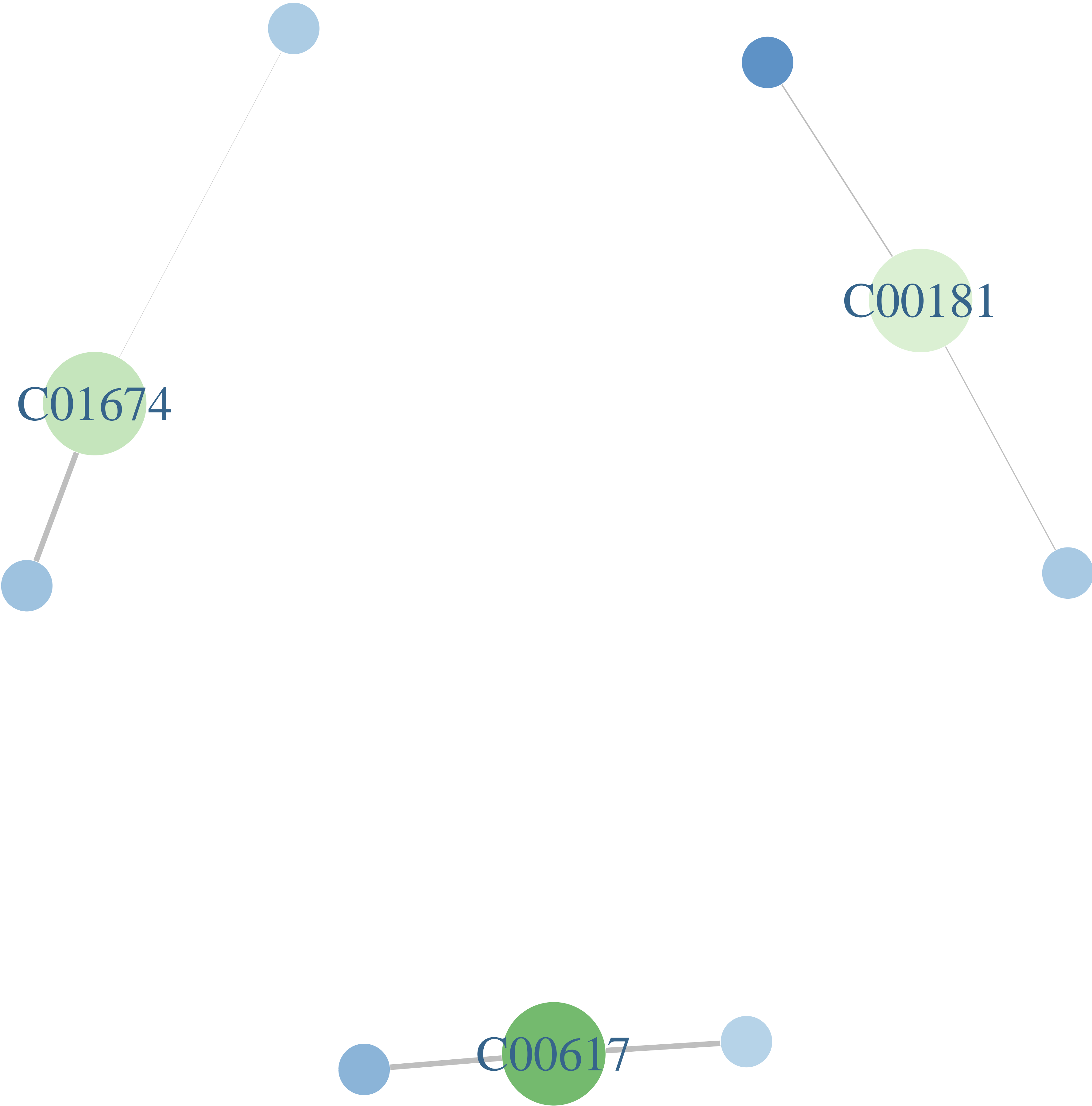
inflammatory mediator regulation of trp channels ; p-value: 0.12



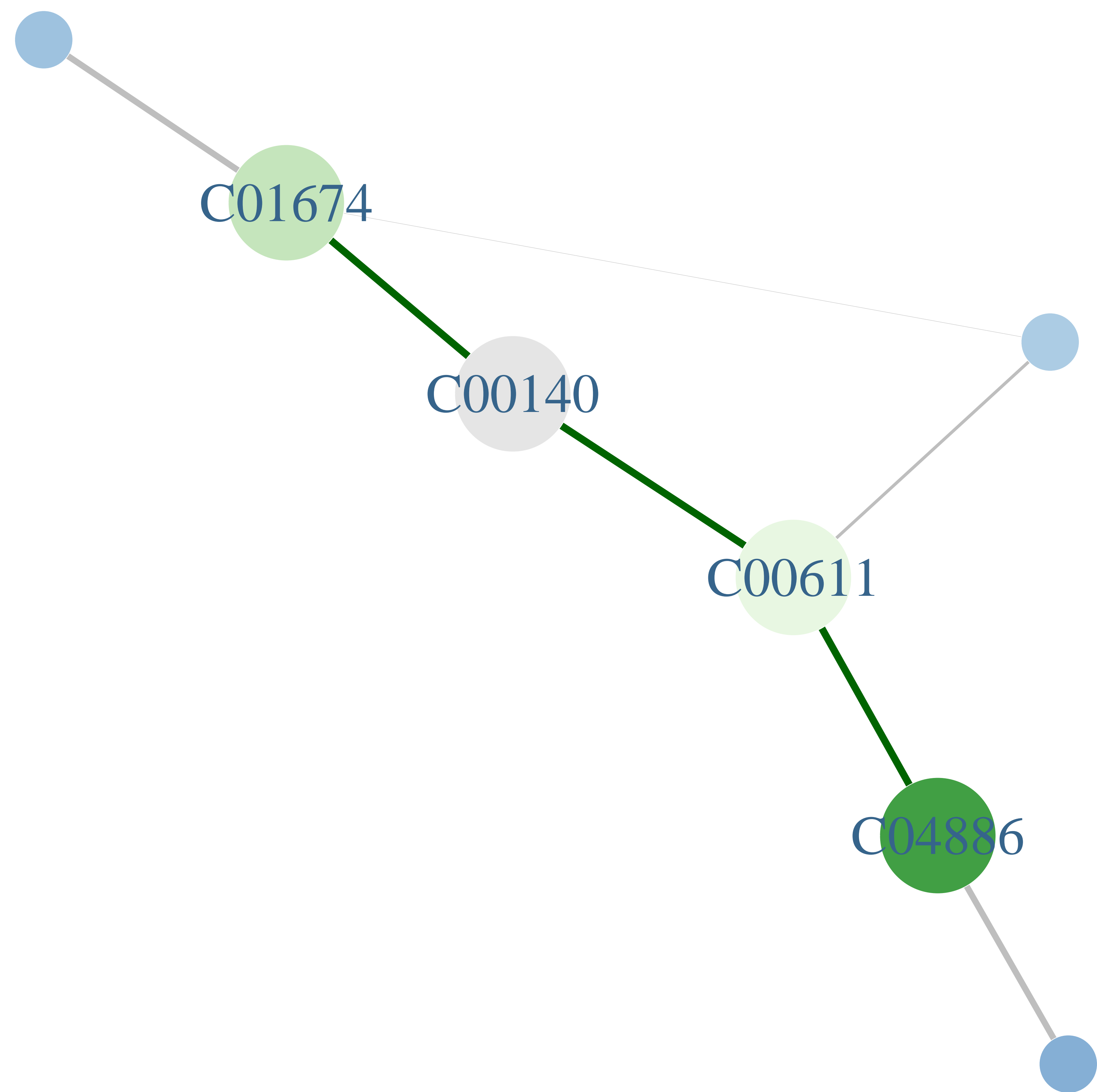
linoleate metabolism ; p-value: 0.043



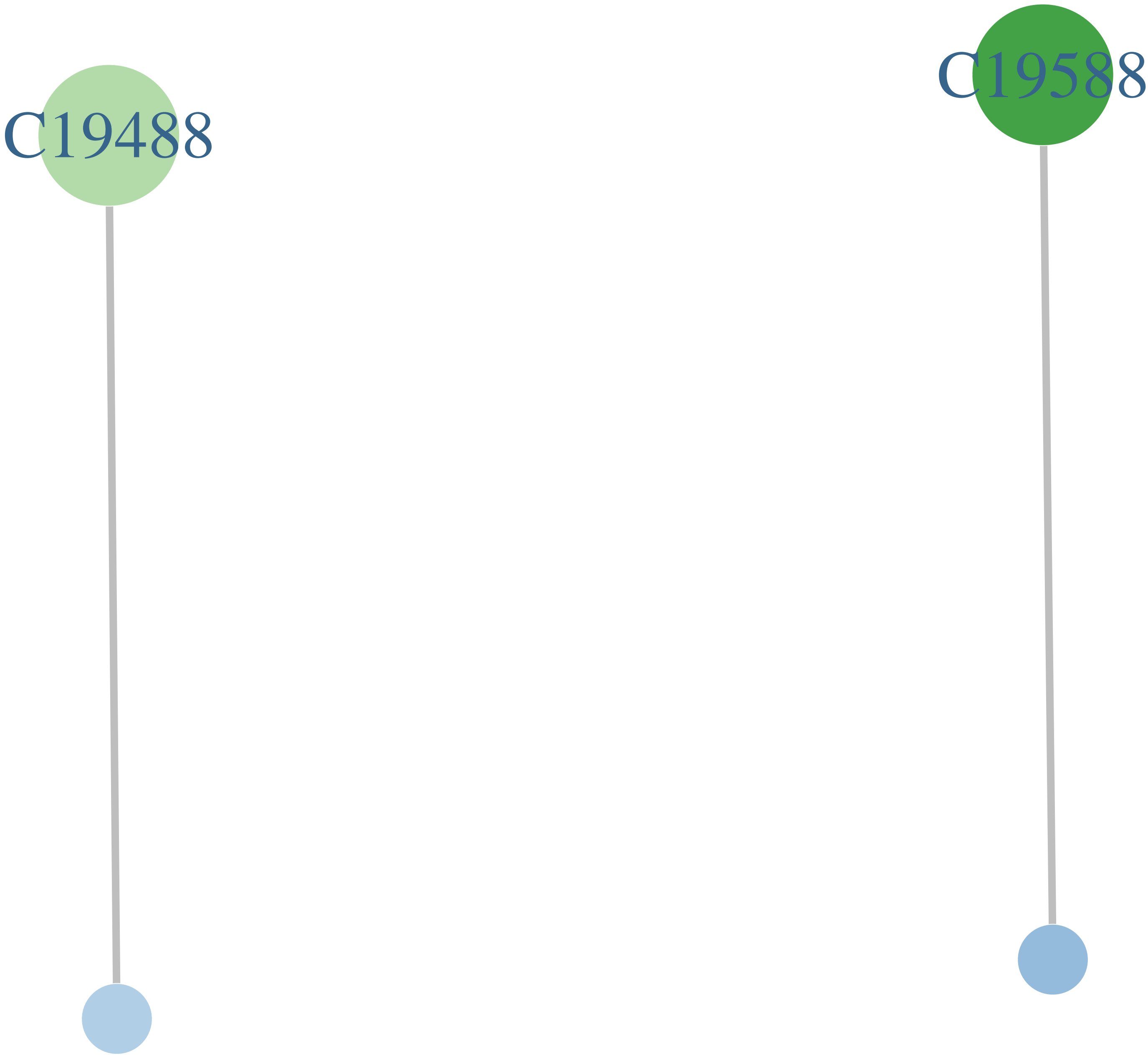
amino sugar and nucleotide sugar metabolism ; p-value: 0.101



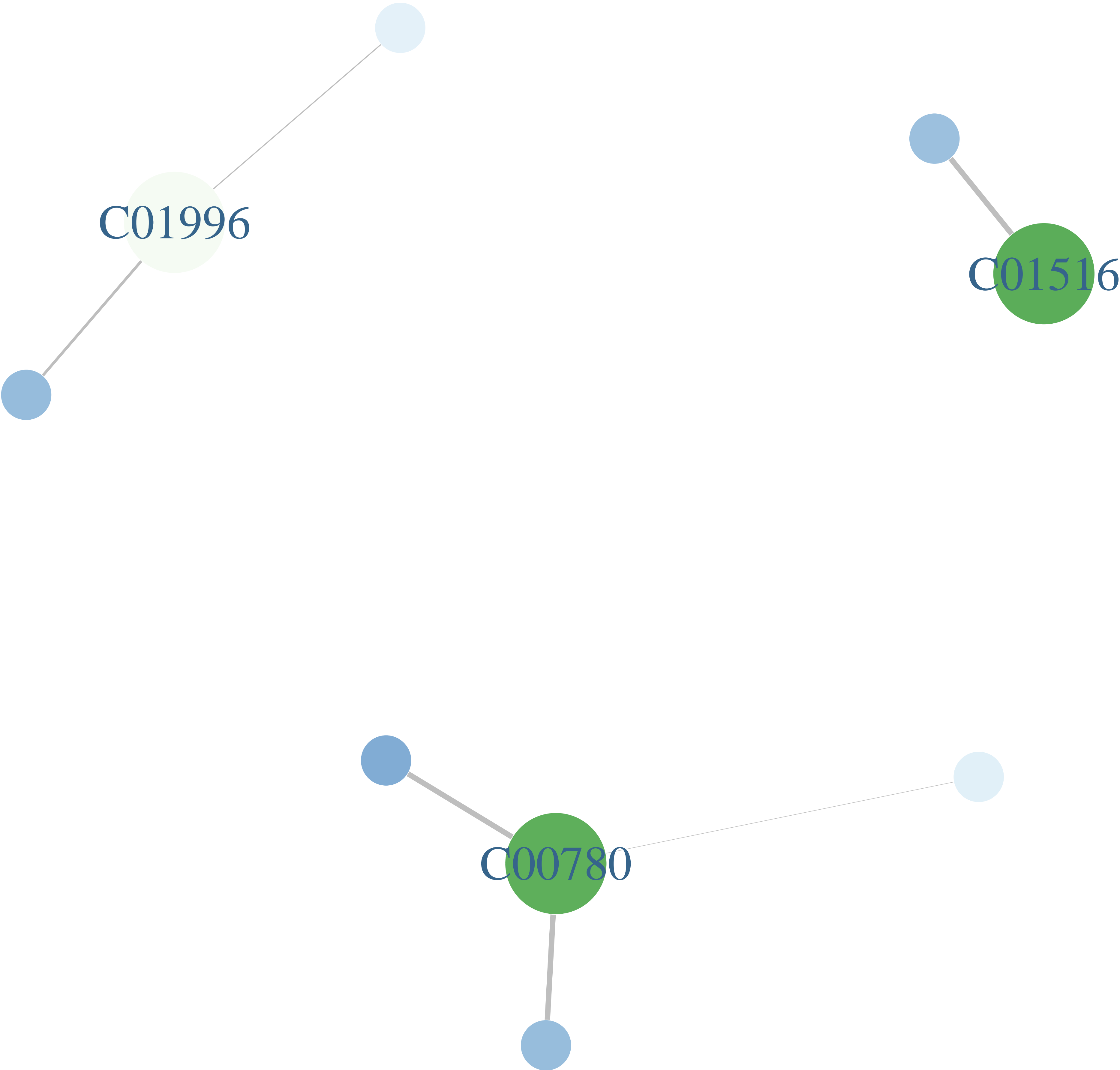
amino sugar metabolism ; p-value: 0.066



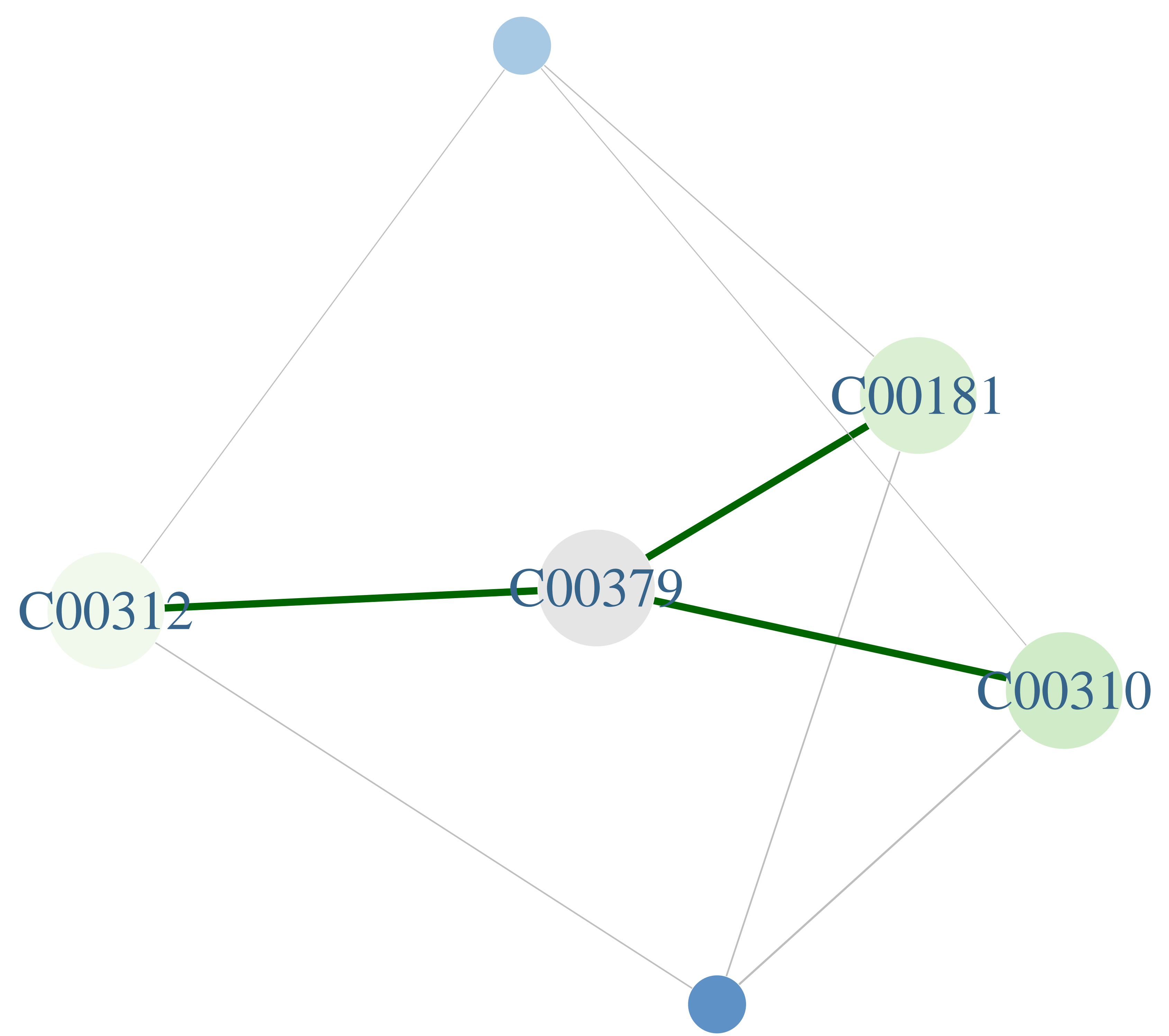
metabolism of xenobiotics by cytochrome p450 ; p-value: 0.613



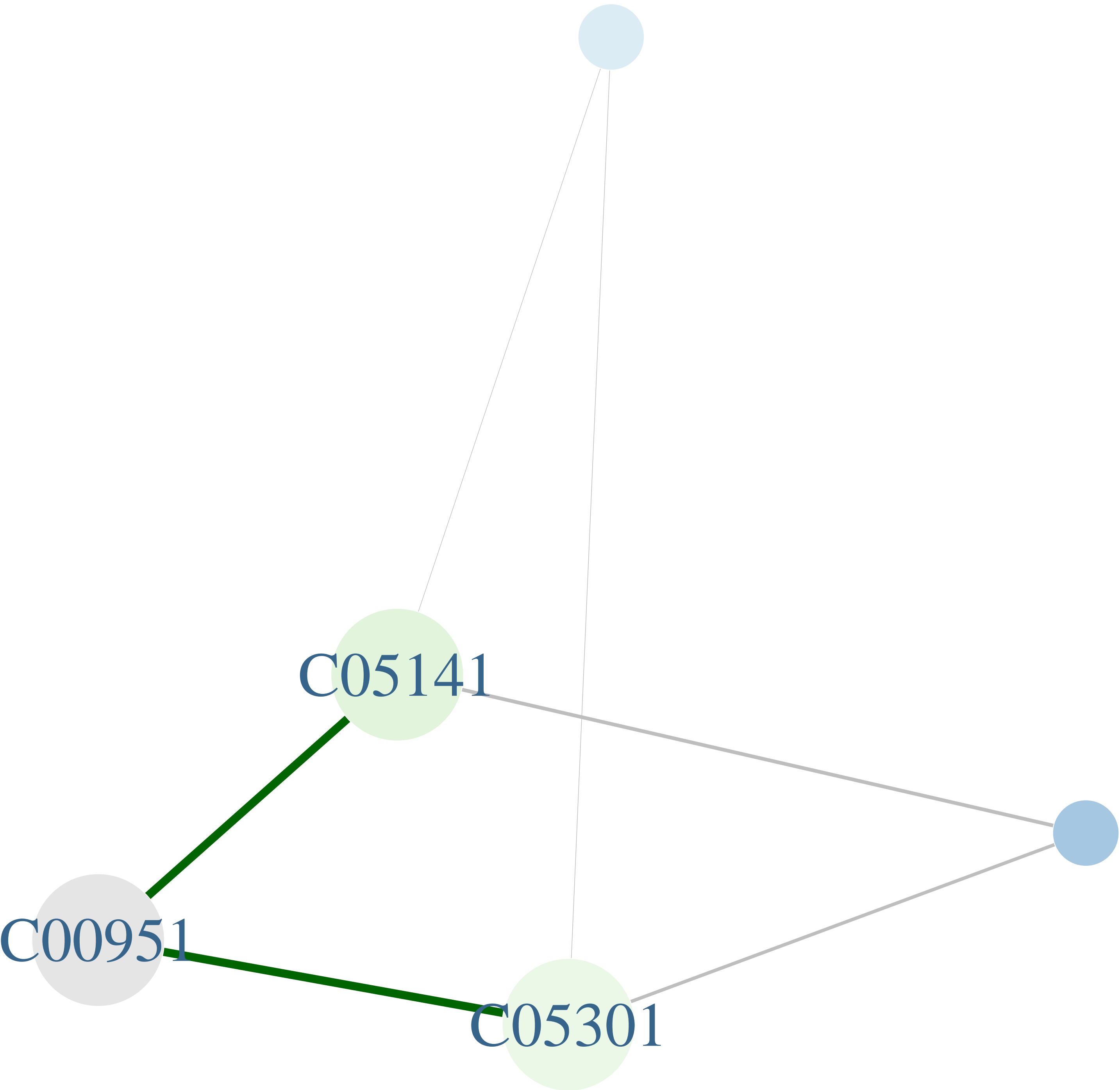
neuroactive ligand–receptor interaction ; p–value: 0.109



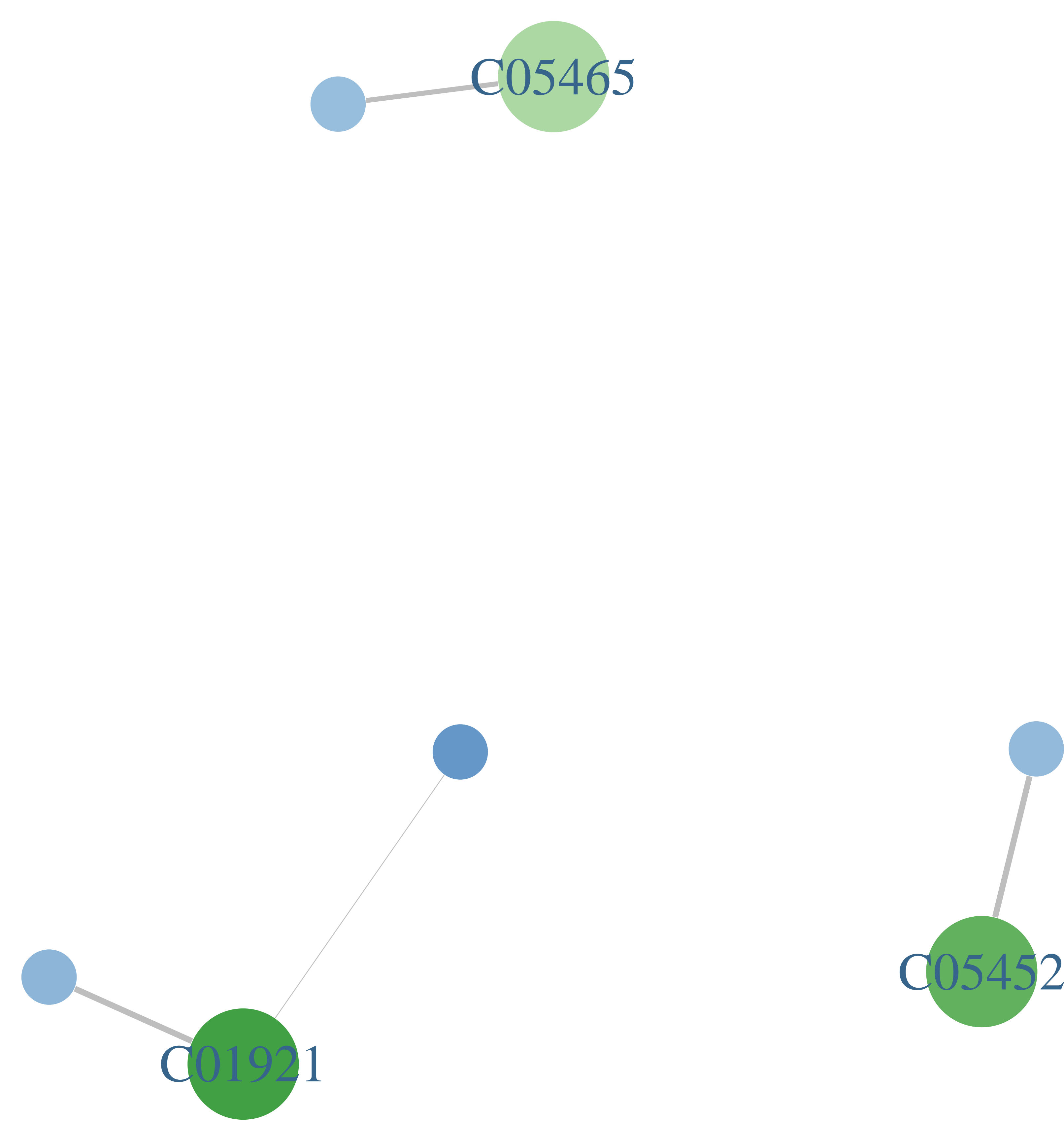
pentose and glucuronate interconversions ; p-value: 0.037



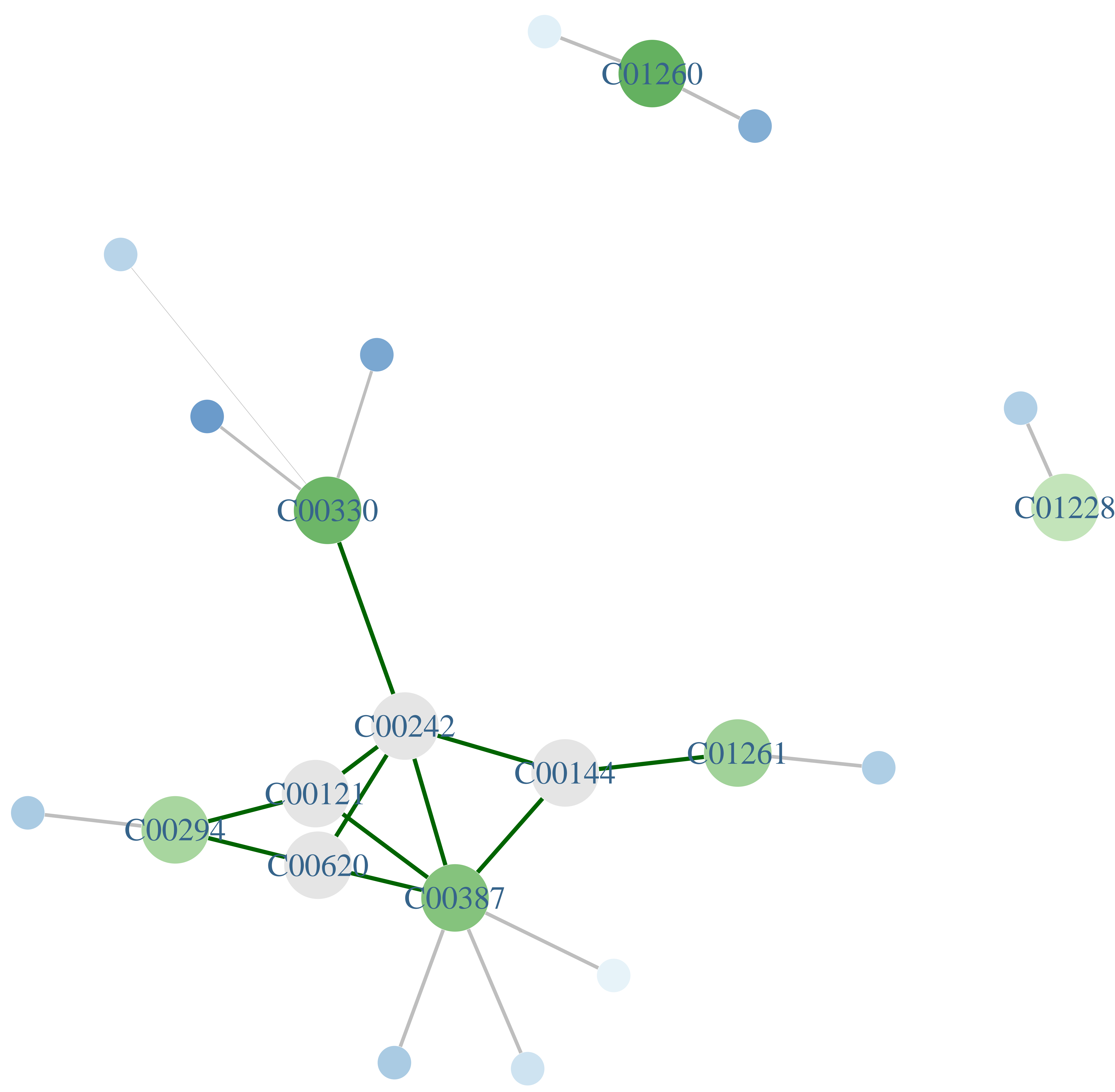
androgen and estrogen metabolism ; p-value: 0.437



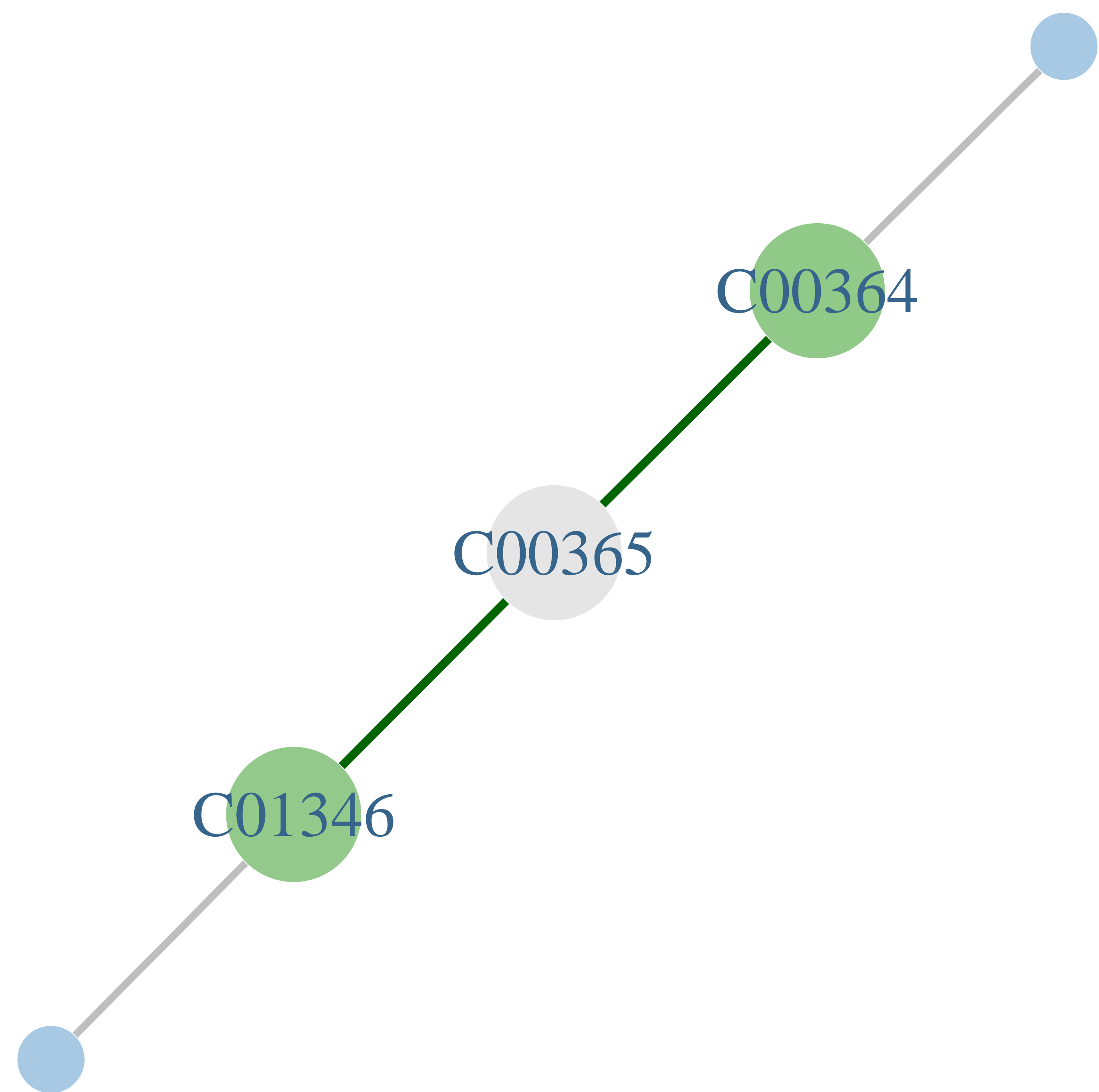
primary bile acid biosynthesis ; p-value: 0.152



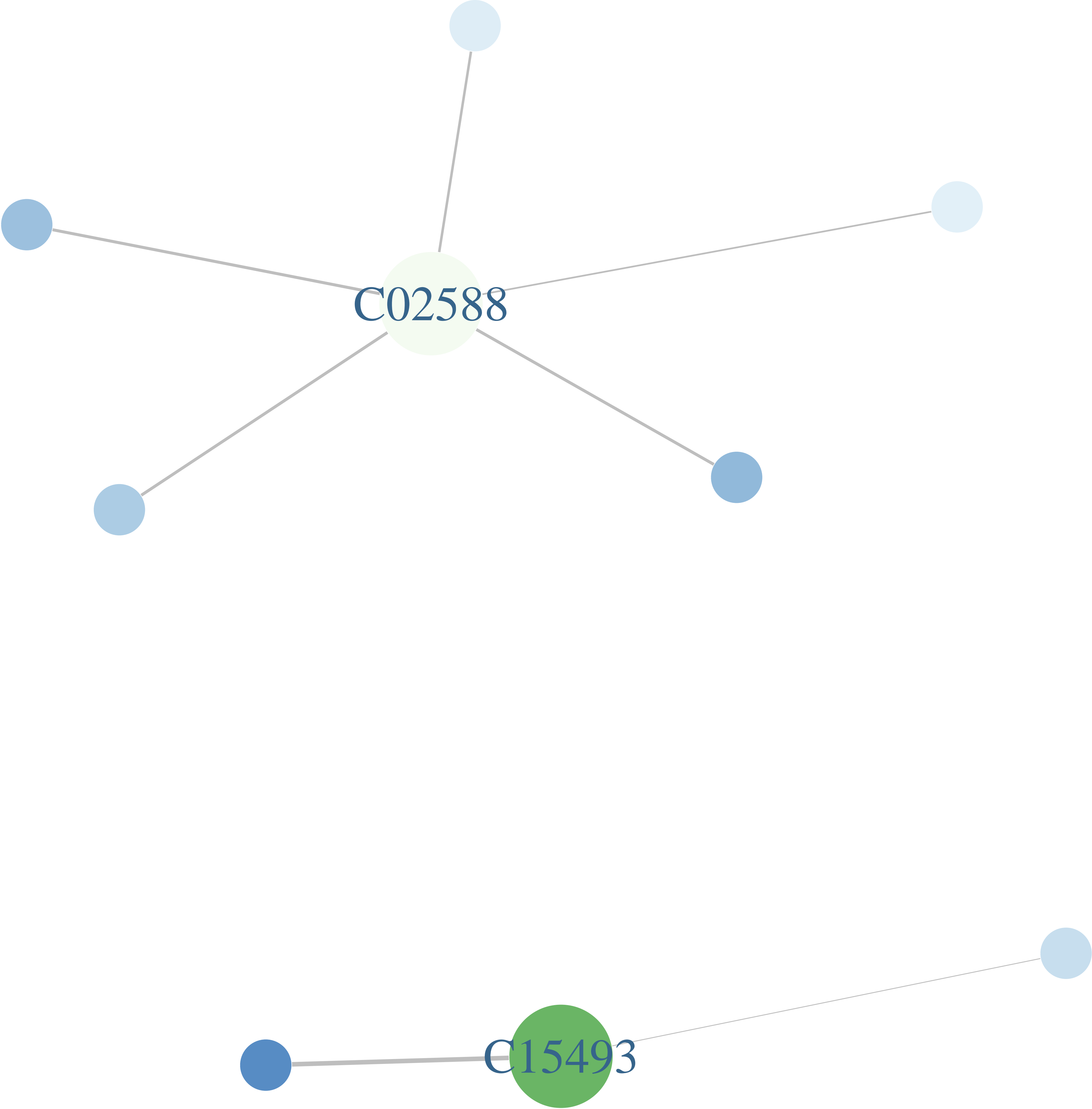
purine metabolism ; p-value: 0.036



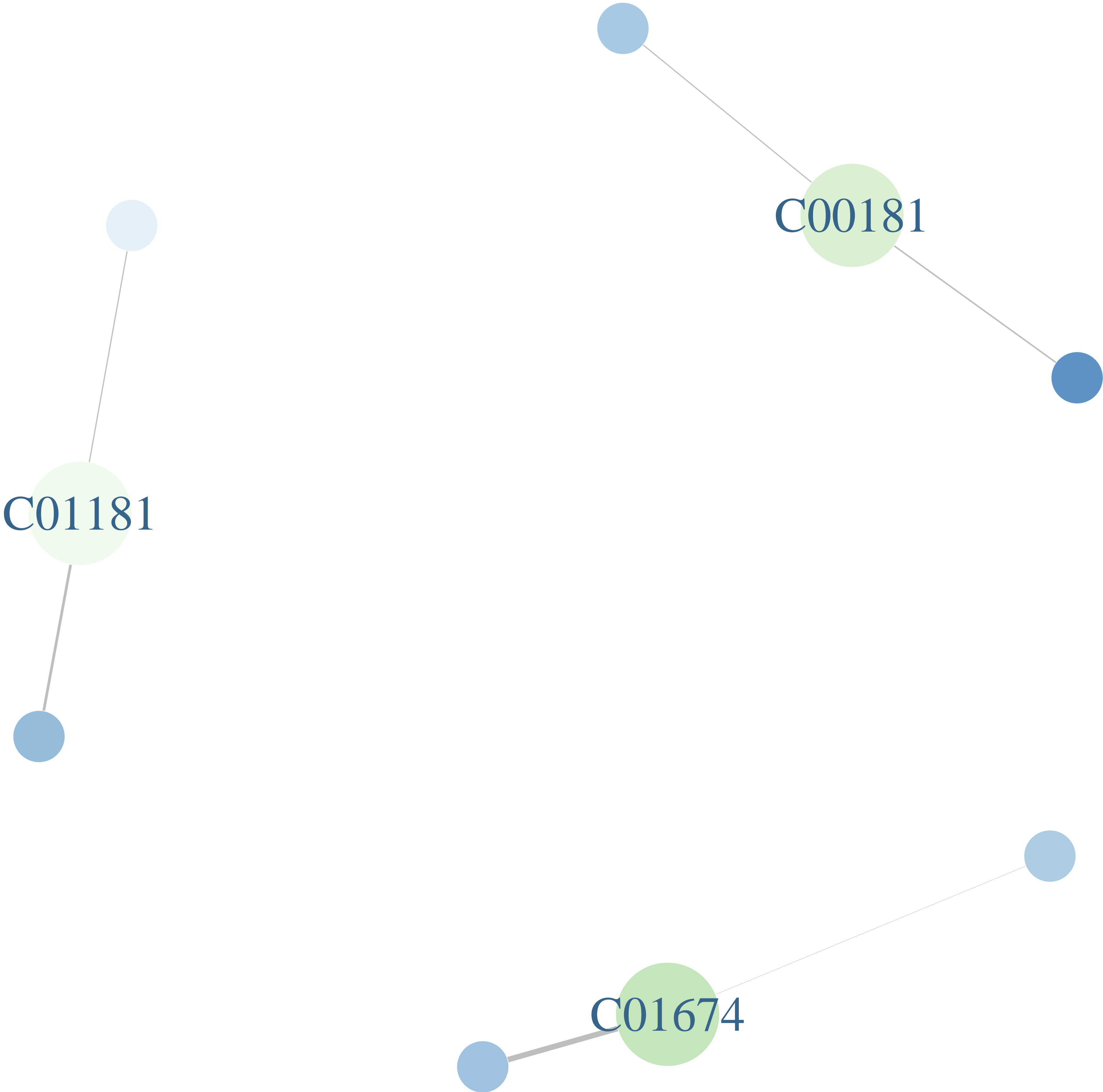
pyrimidine metabolism ; p-value: 0.582



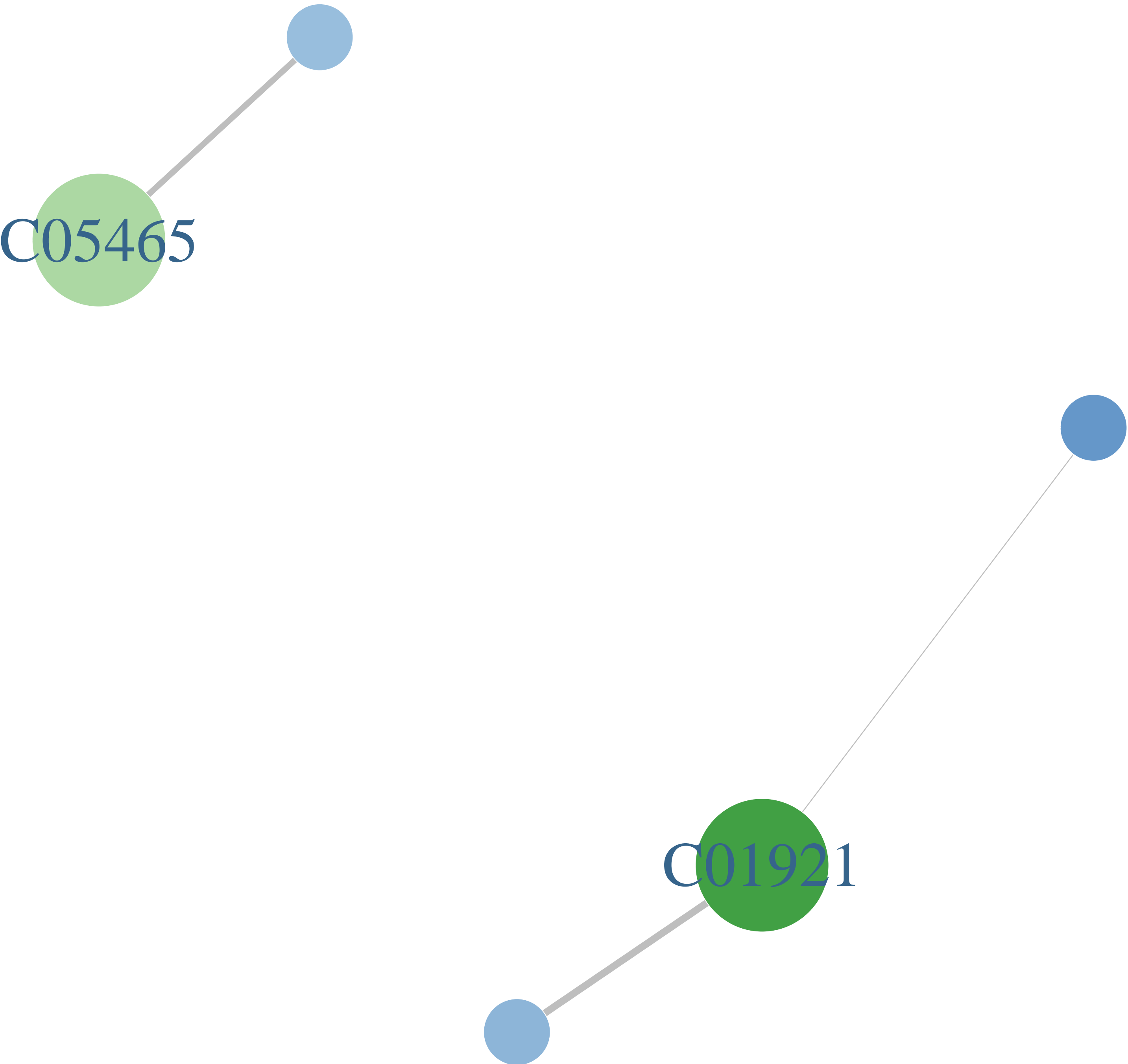
retinol metabolism ; p-value: 0.173



abc transporters ; p-value: 0.23



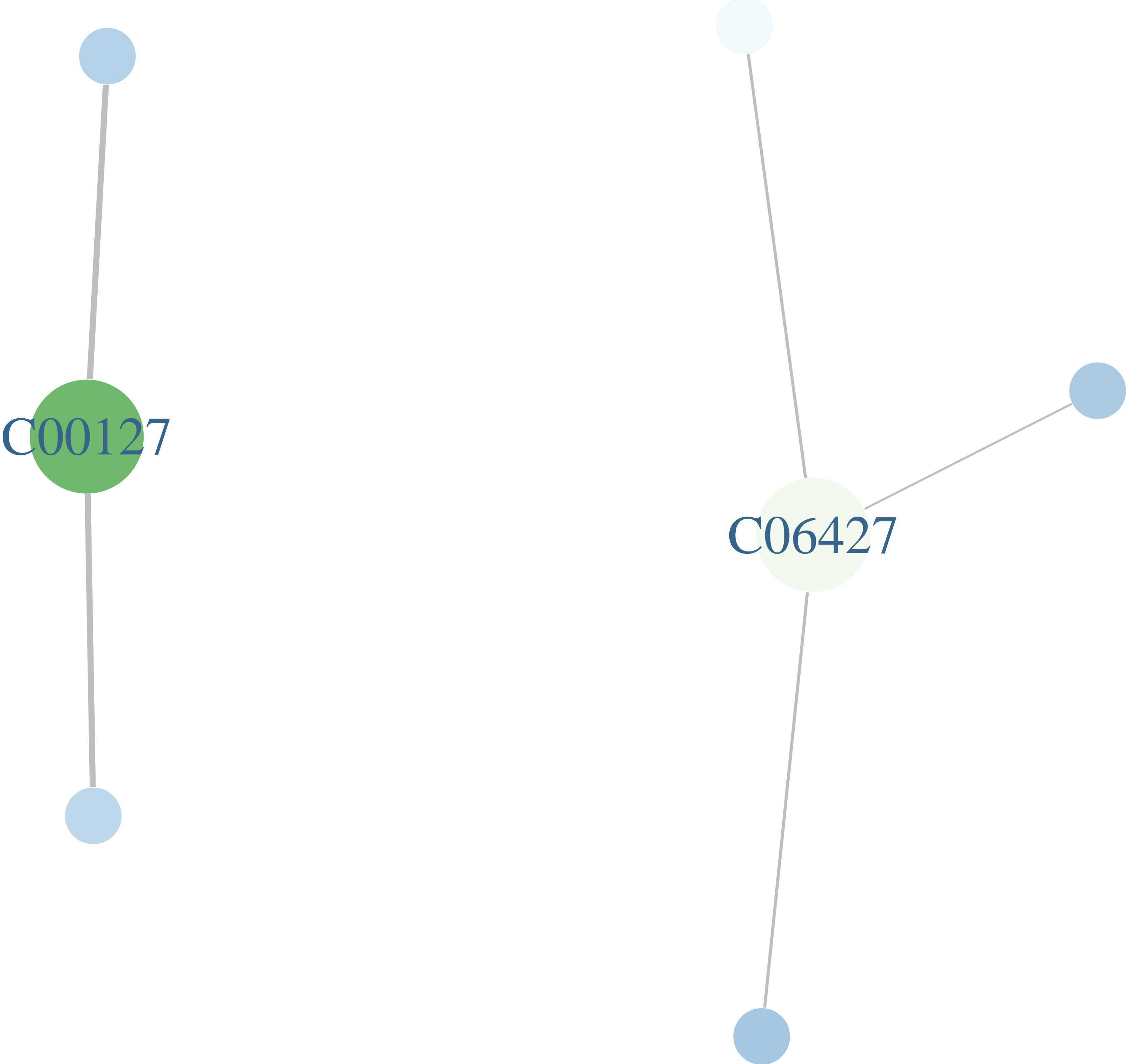
secondary bile acid biosynthesis ; p-value: 0.034



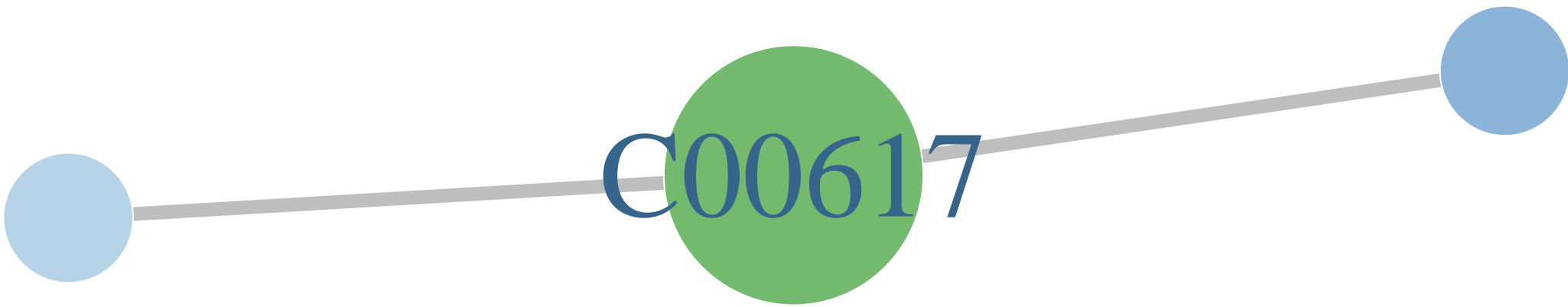
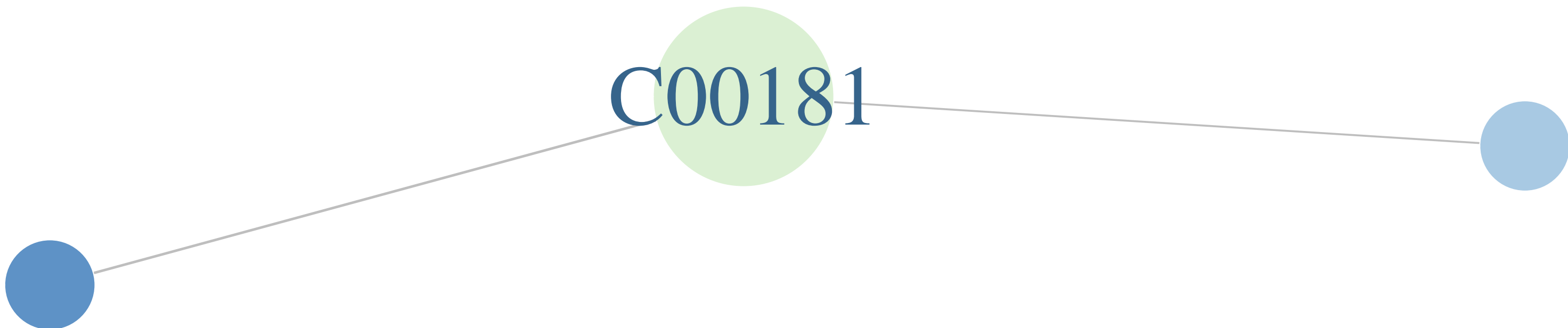
selenoamino acid metabolism ; p-value: 0.159



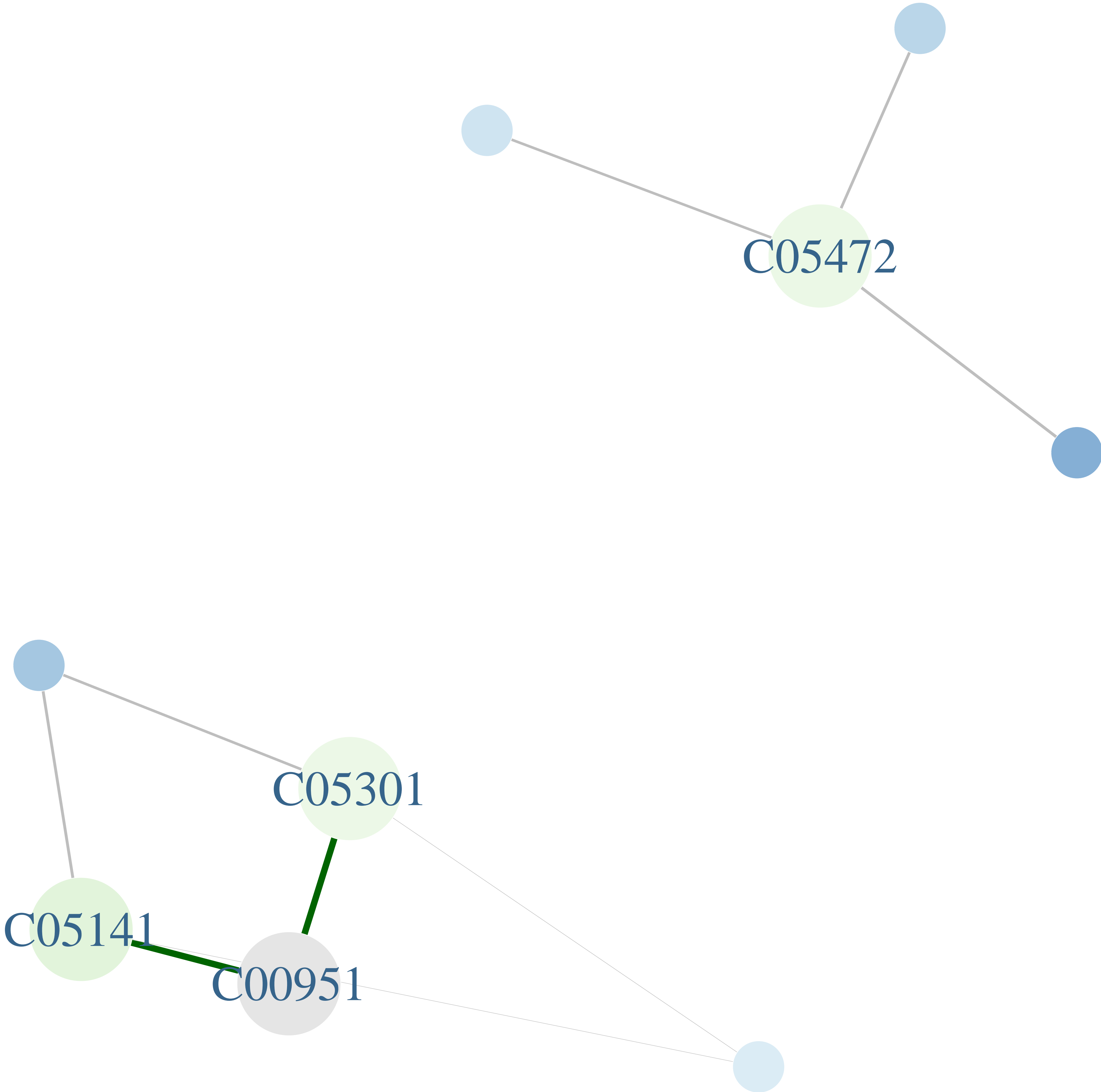
arachidonic acid metabolism ; p-value: 0.463



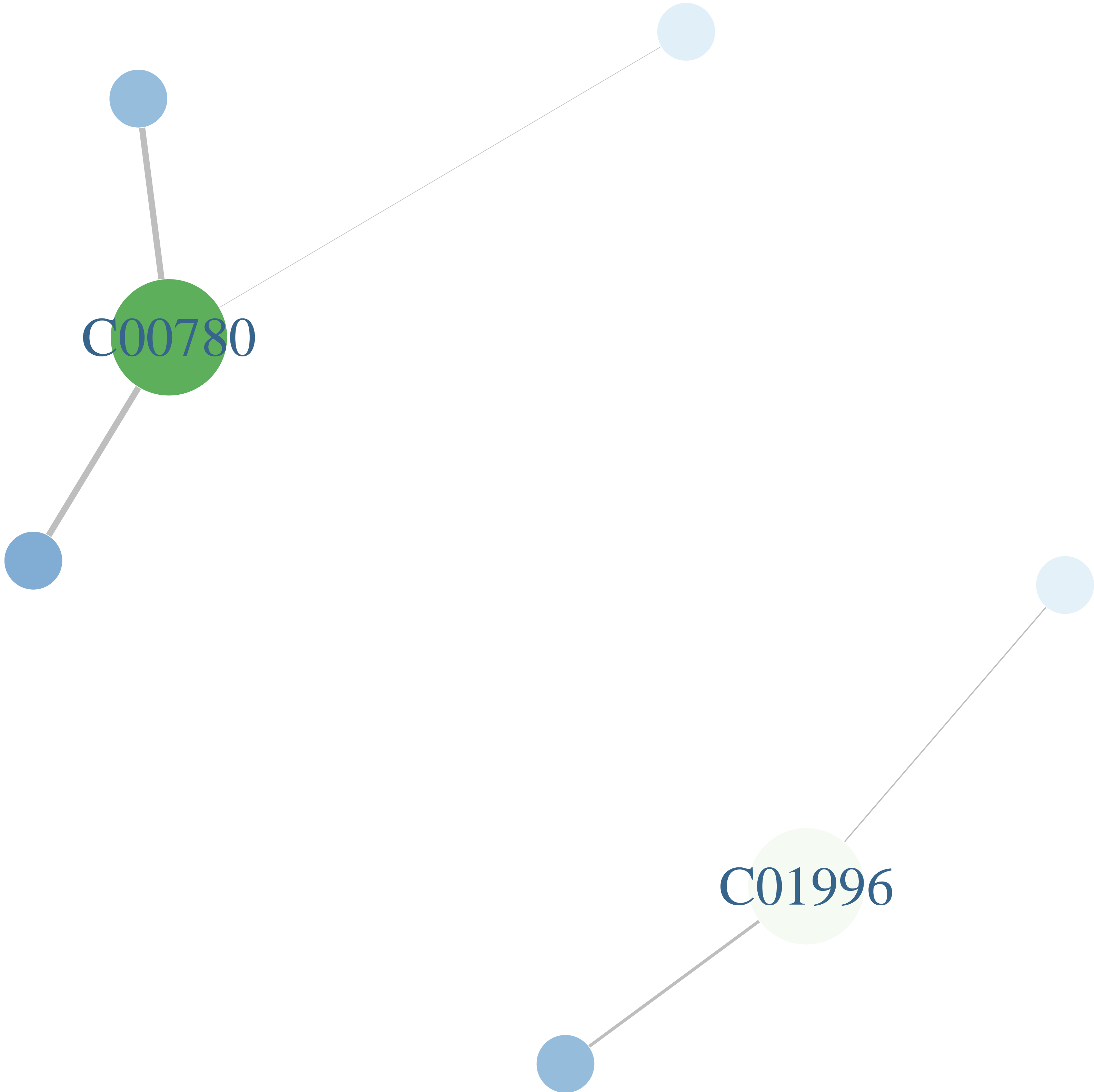
starch and sucrose metabolism ; p-value: 0.243



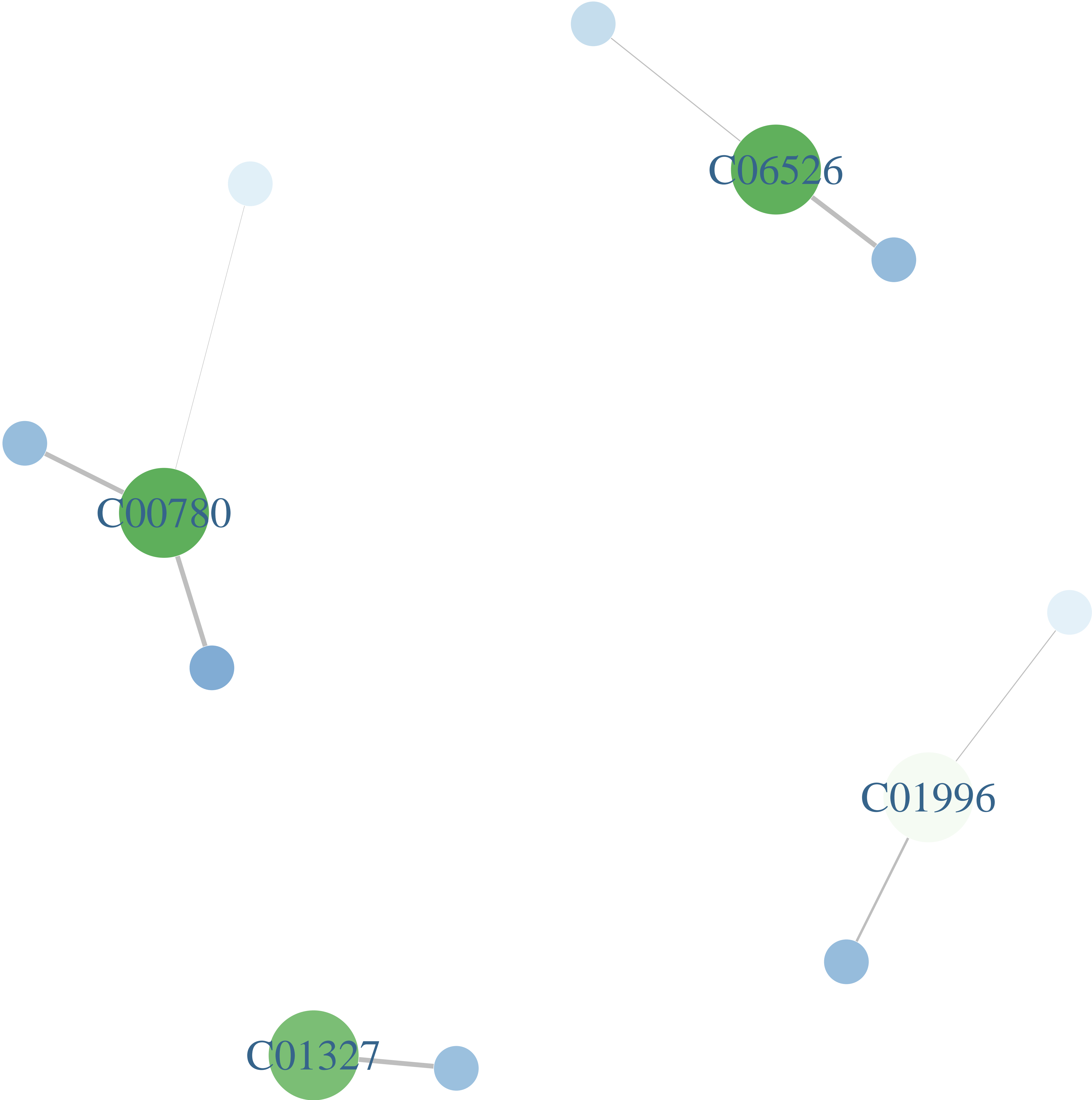
steroid hormone biosynthesis ; p-value: 0.517



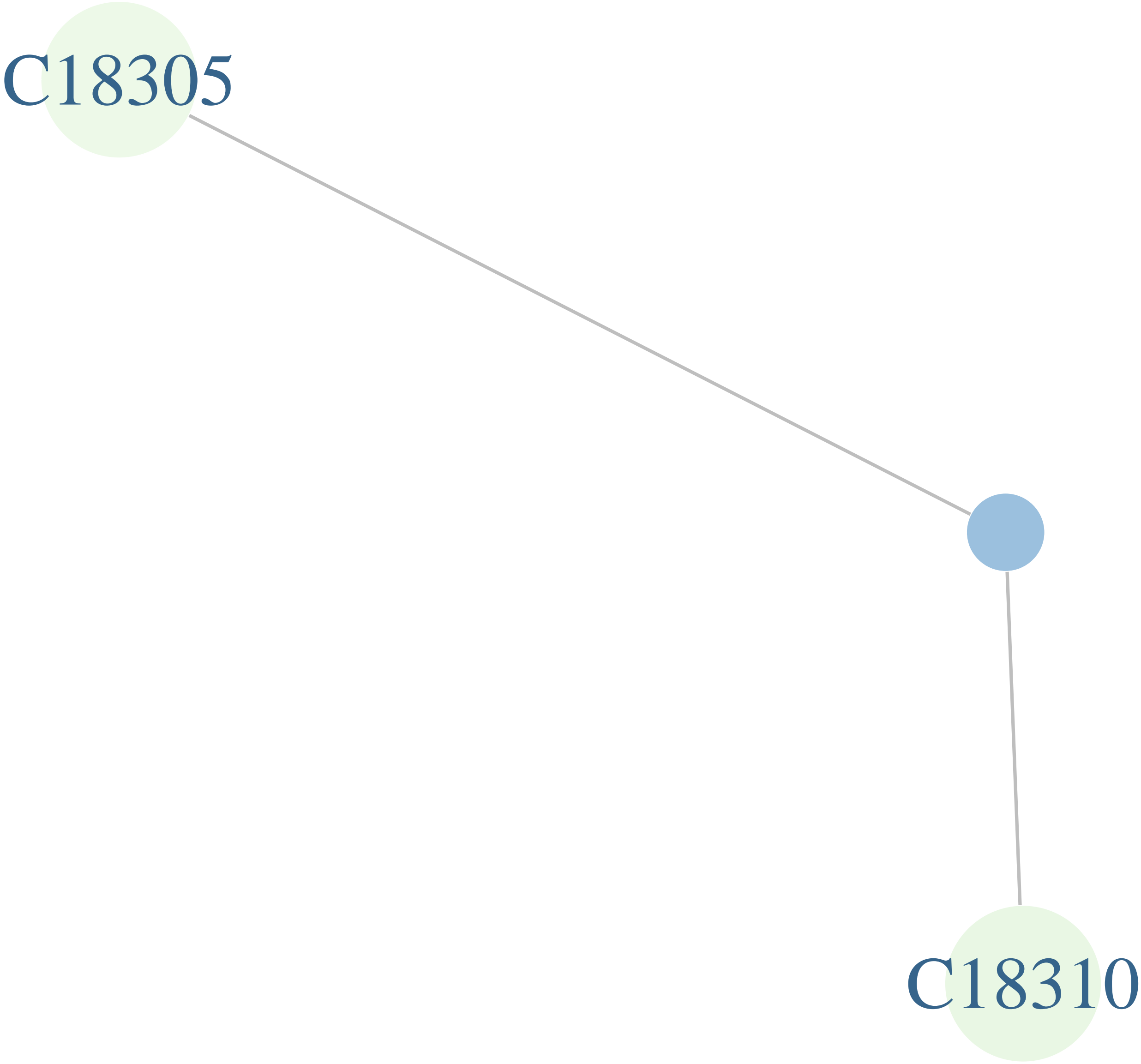
synaptic vesicle cycle ; p-value: 0.019



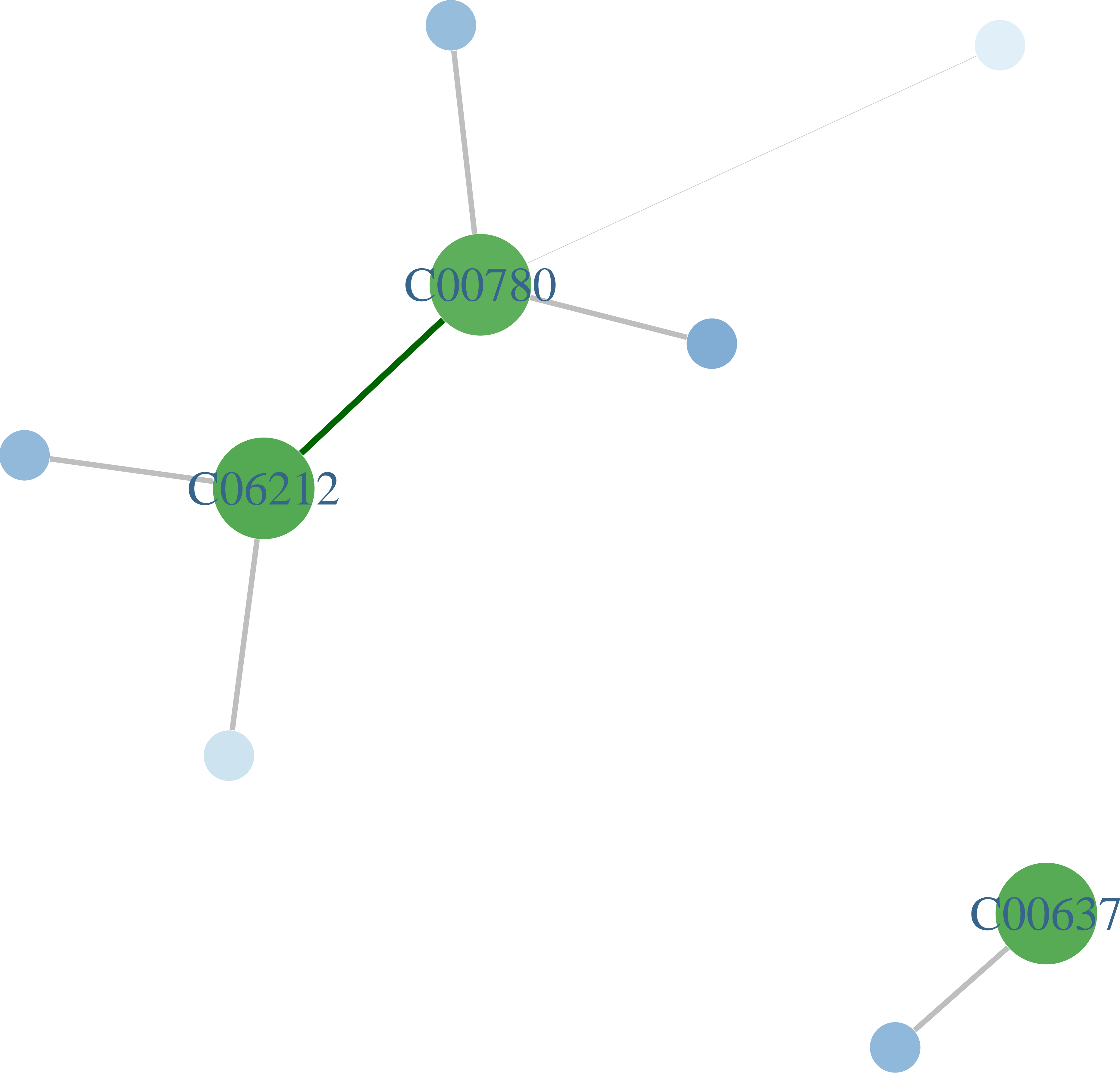
taste transduction ; p-value: 0.001



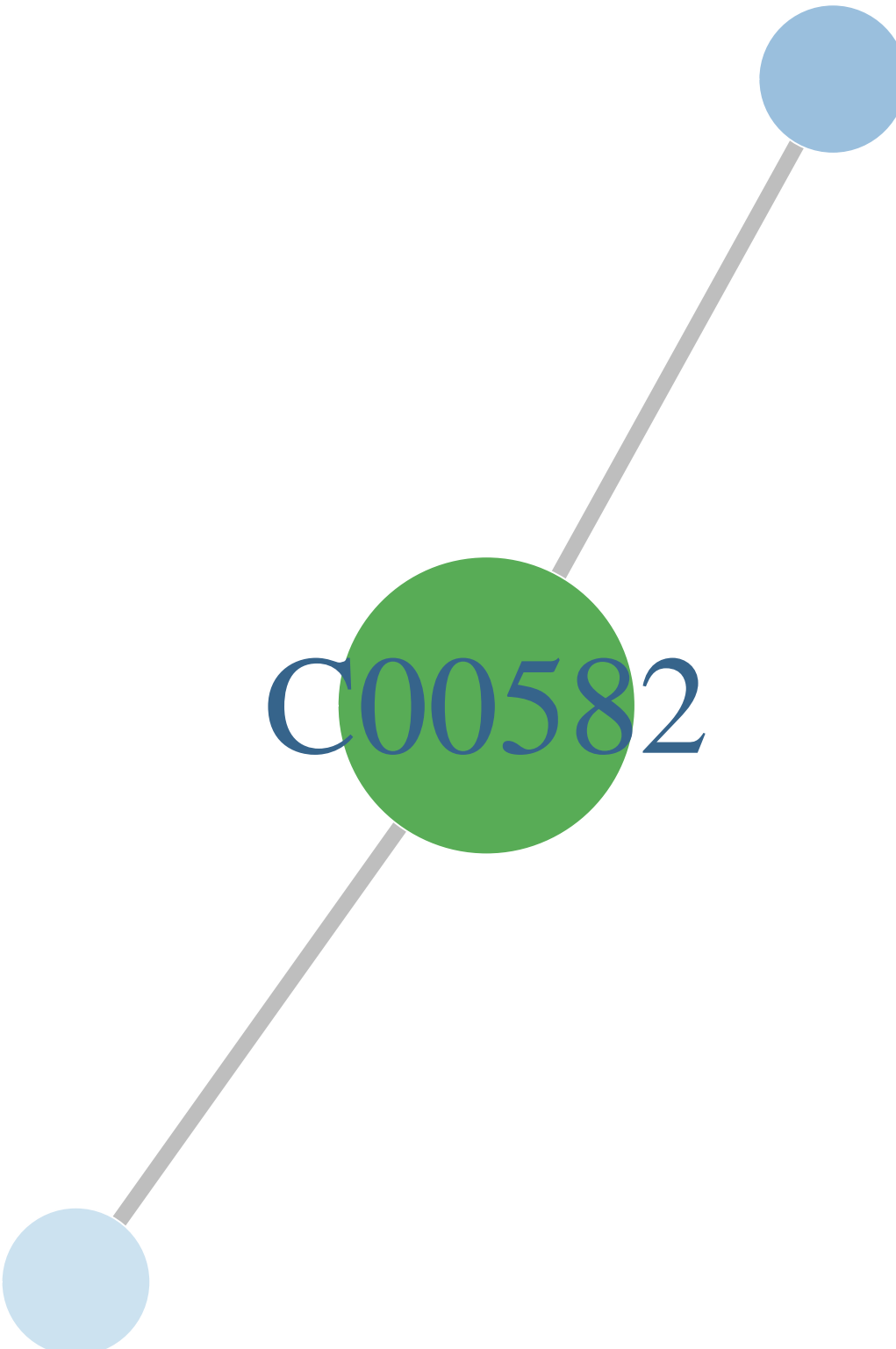
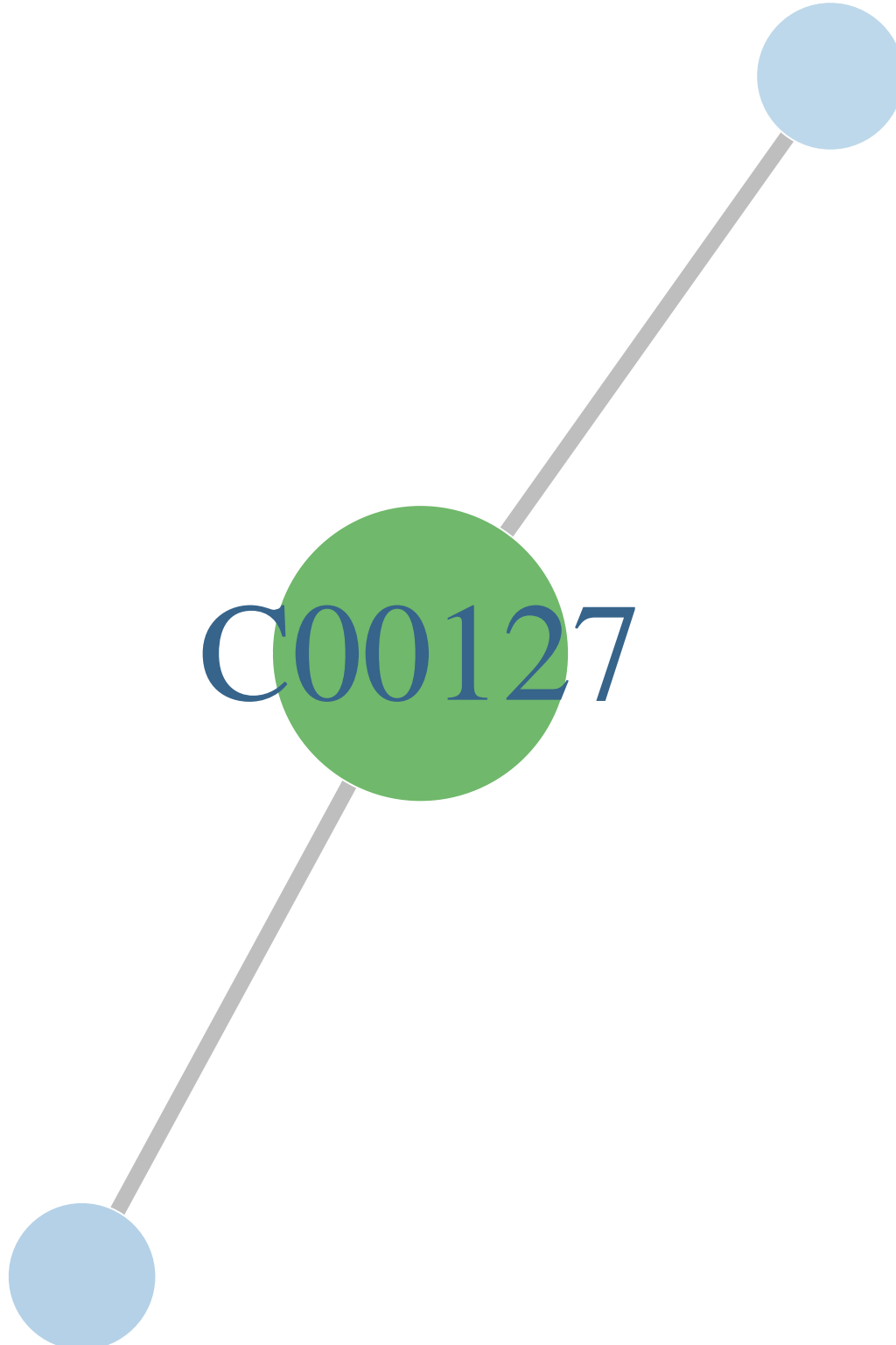
toluene degradation ; p-value: 0.043



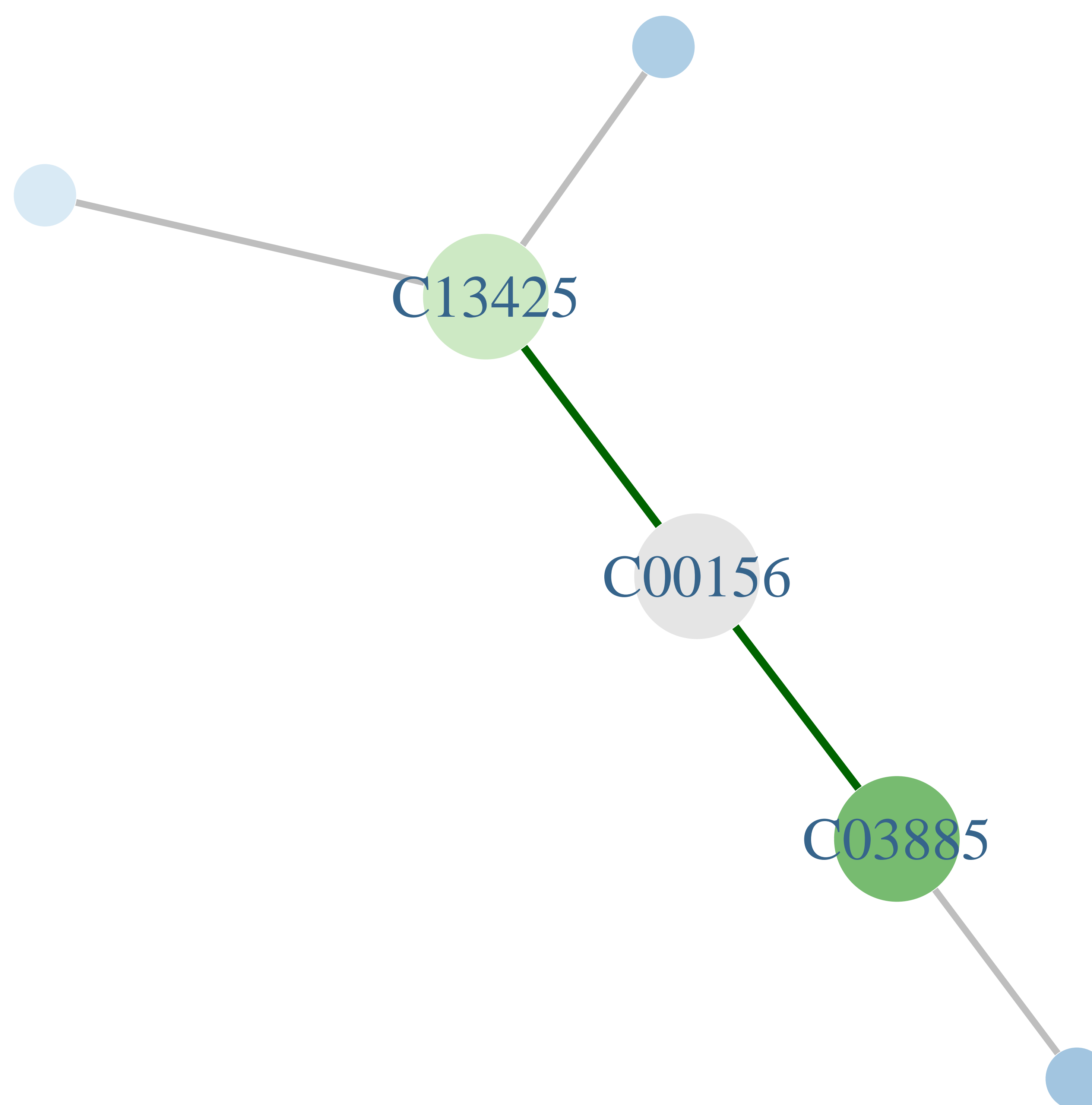
tryptophan metabolism ; p-value: 0.292



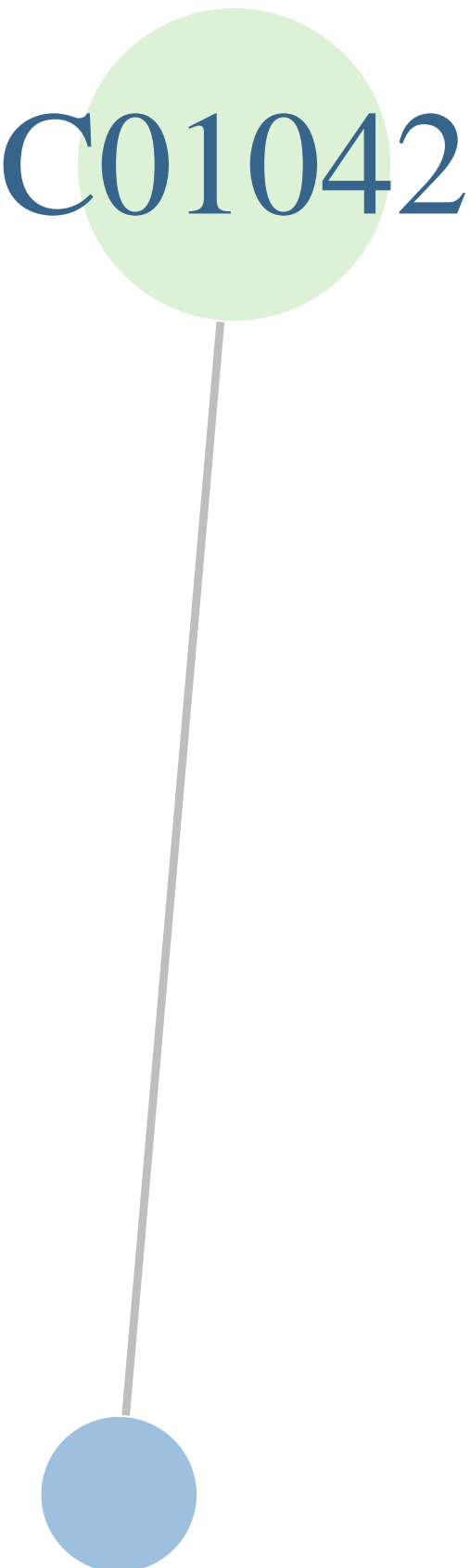
tyrosine metabolism ; p-value: 0.671



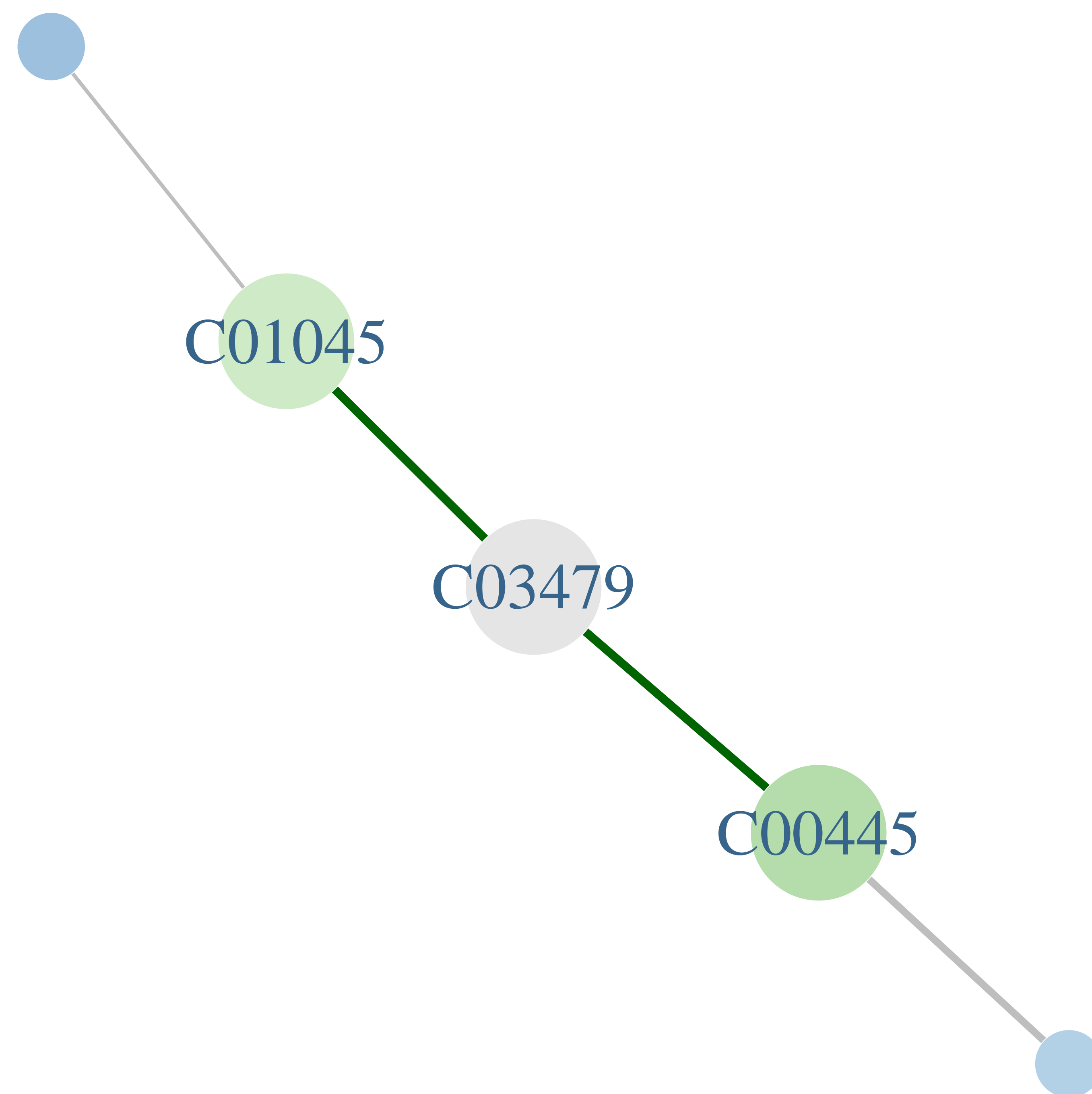
ubiquinone and other terpenoid–quinone biosynthesis ; p-value: 0.173



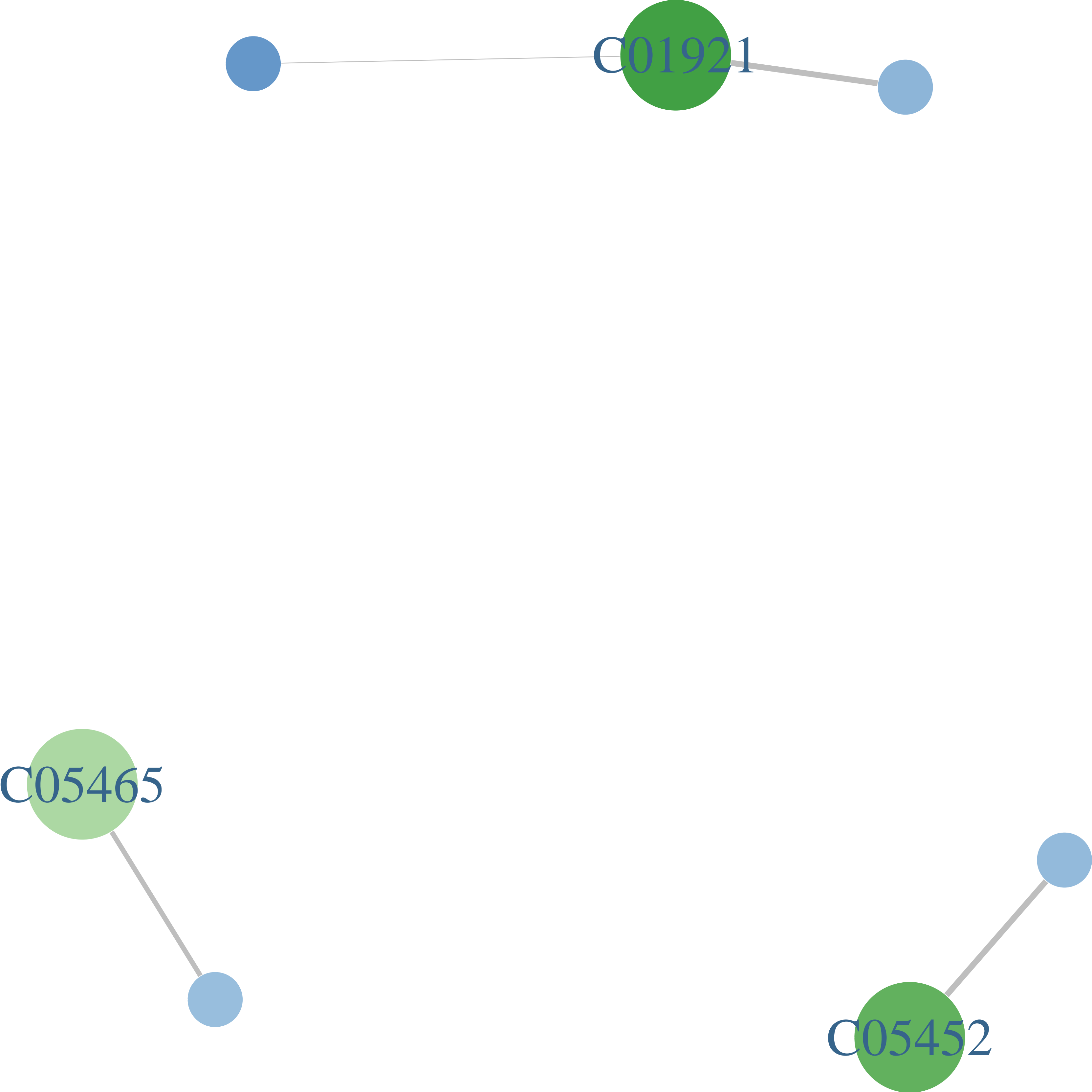
aspartate and asparagine metabolism ; p-value: 0.488



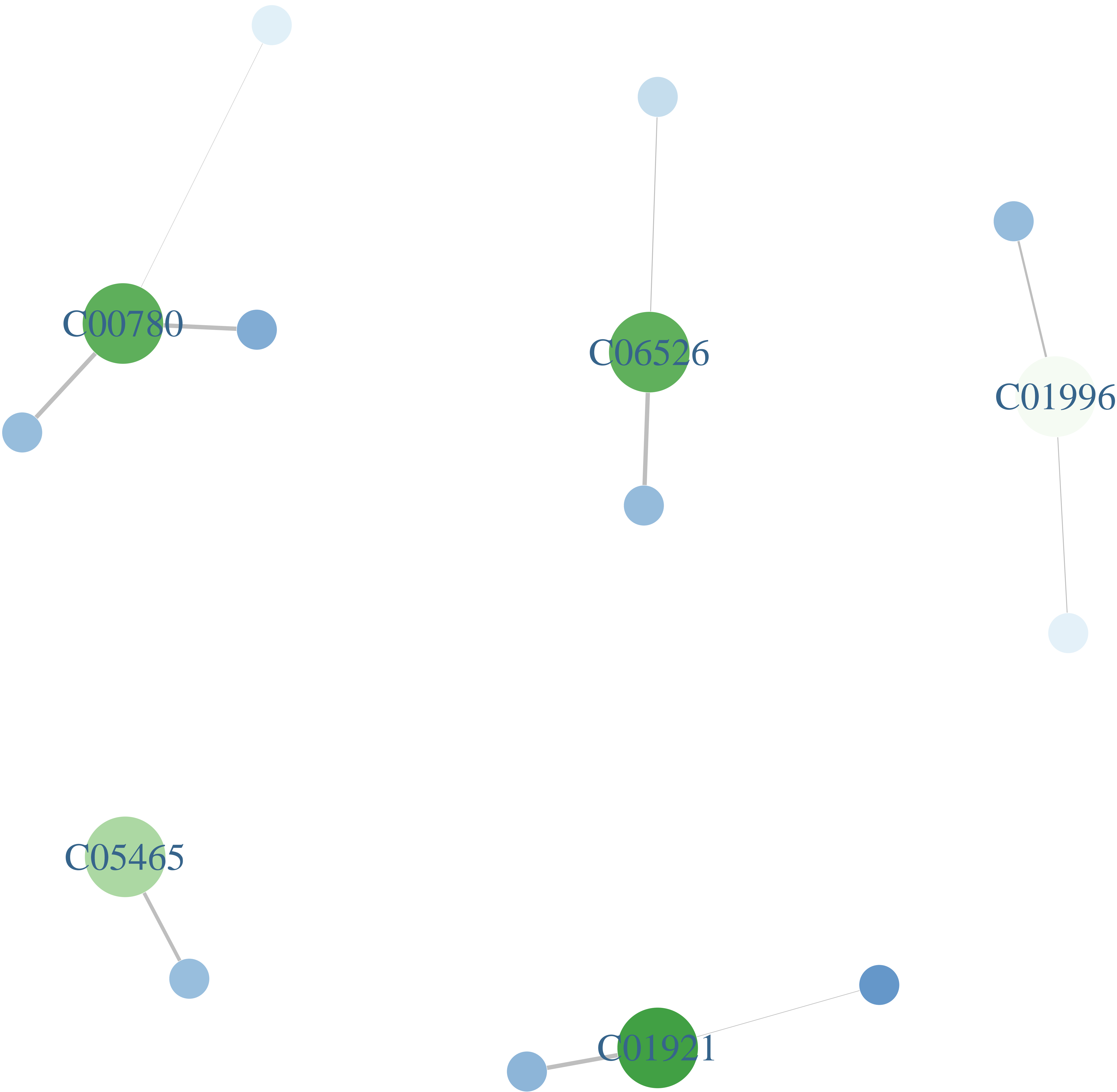
vitamin b9 (folate) metabolism ; p-value: 0.084



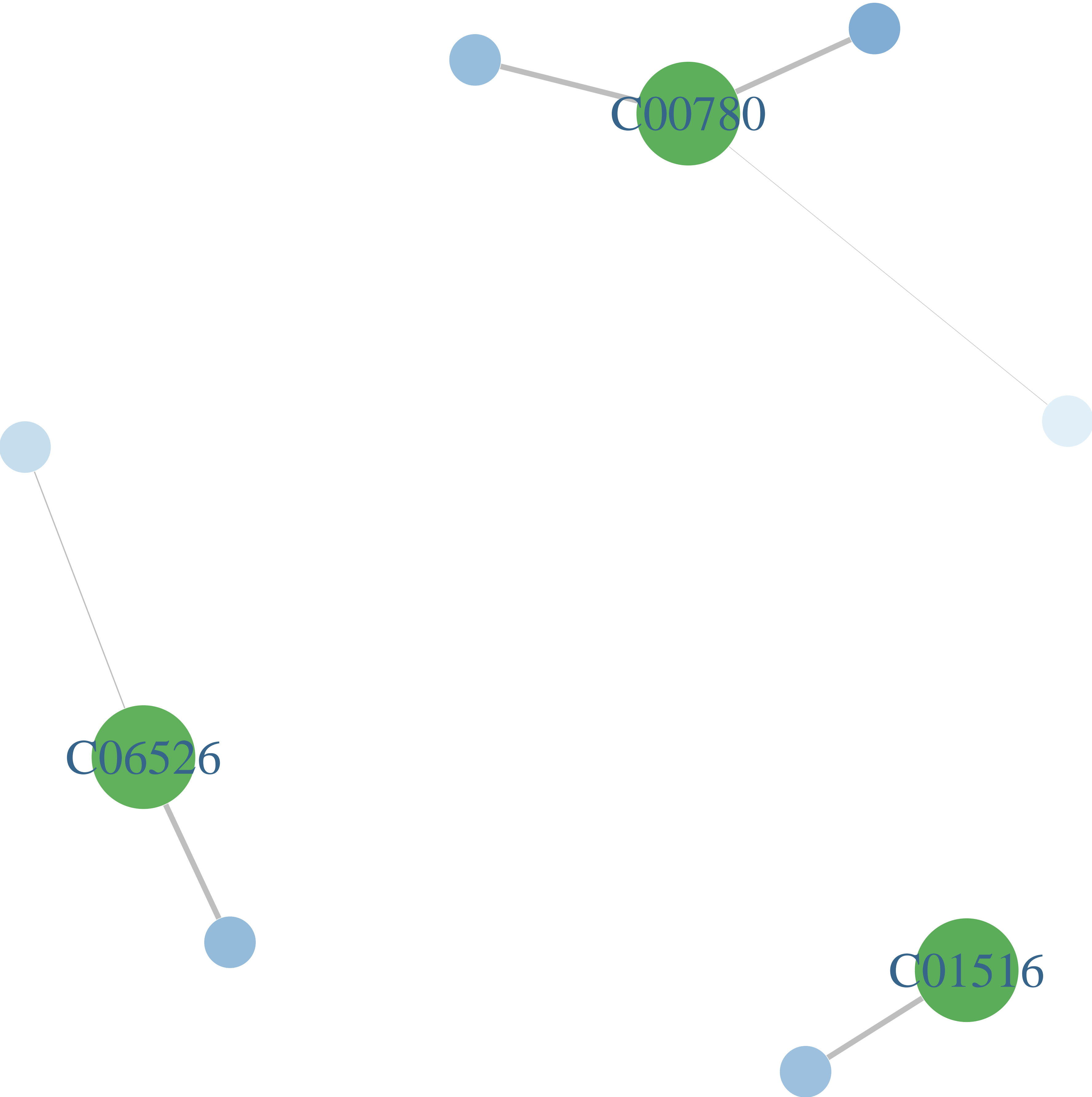
bile acid biosynthesis ; p-value: 0.25



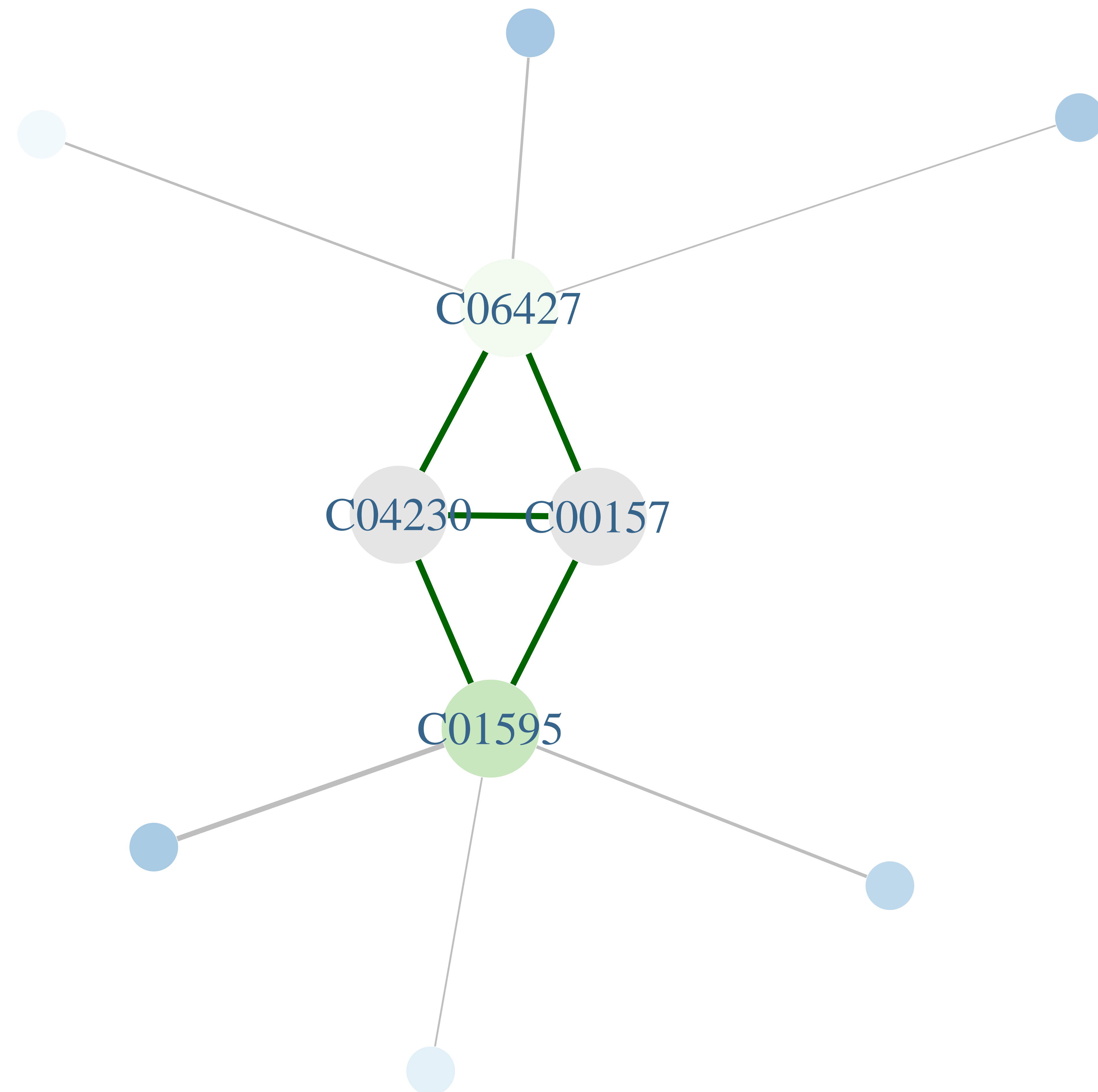
bile secretion ; p-value: 0.01



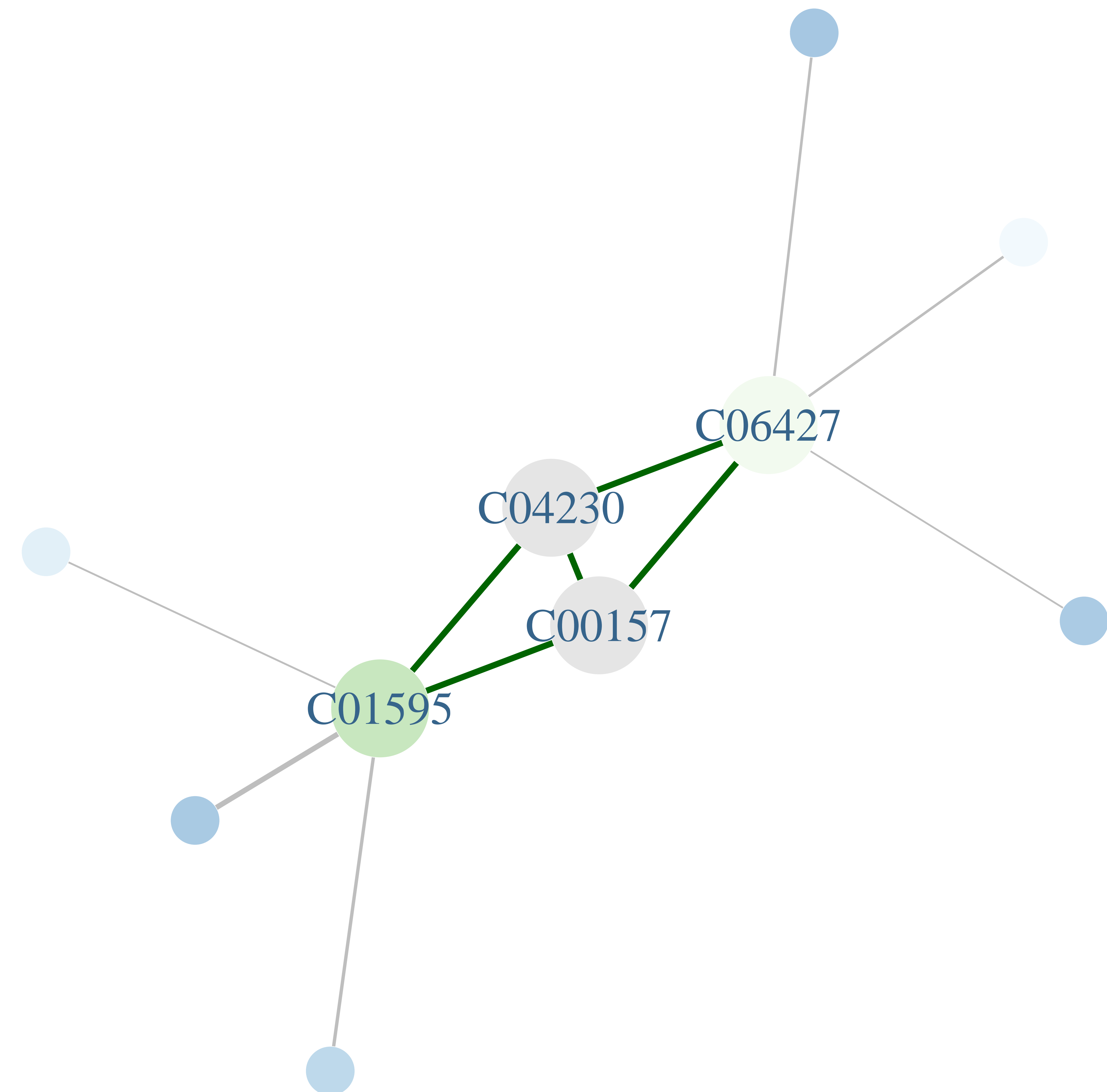
biosynthesis of alkaloids derived from shikimate pathway ; p-value: 0.109



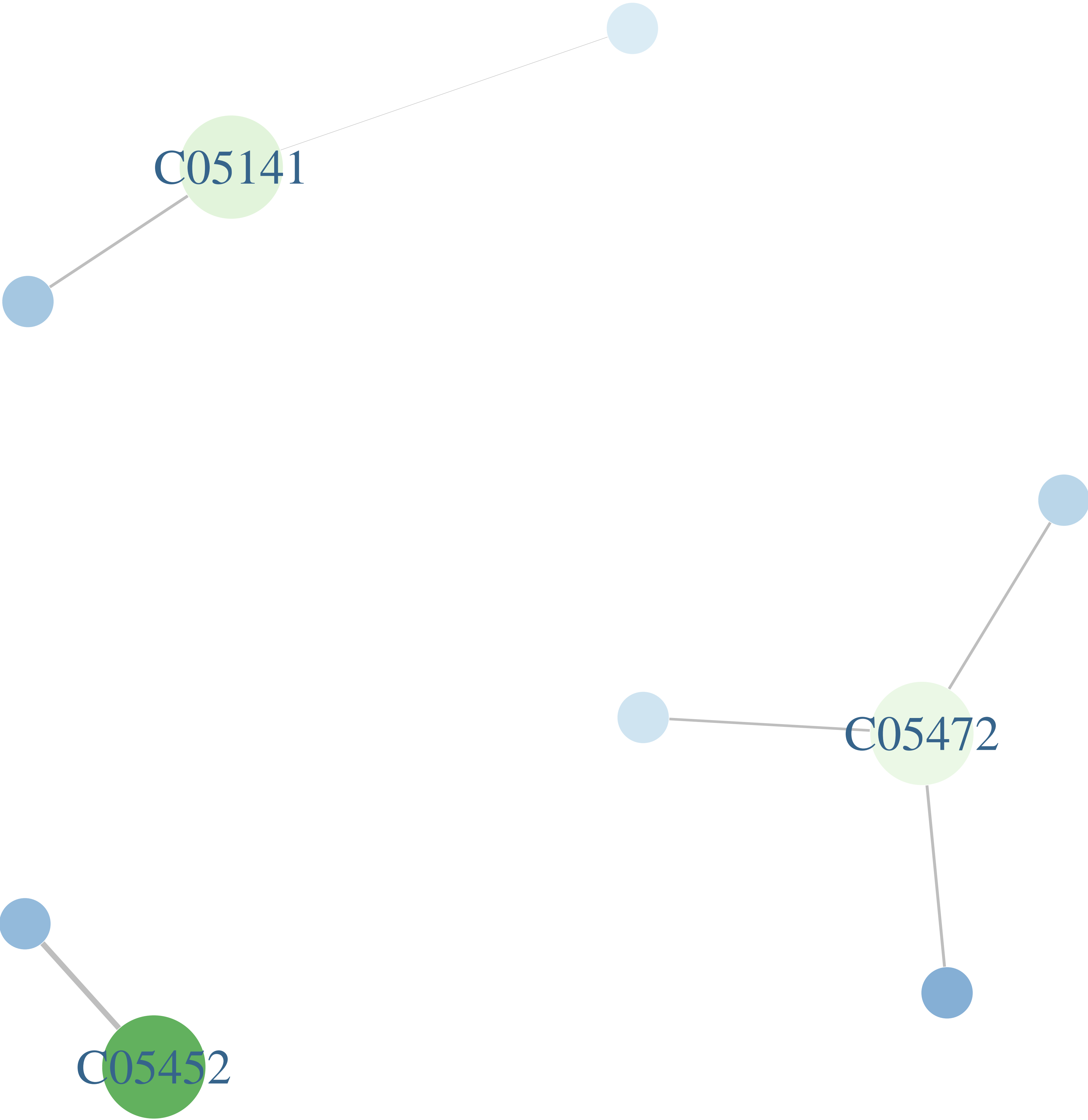
biosynthesis of plant secondary metabolites ; p-value: 0.752



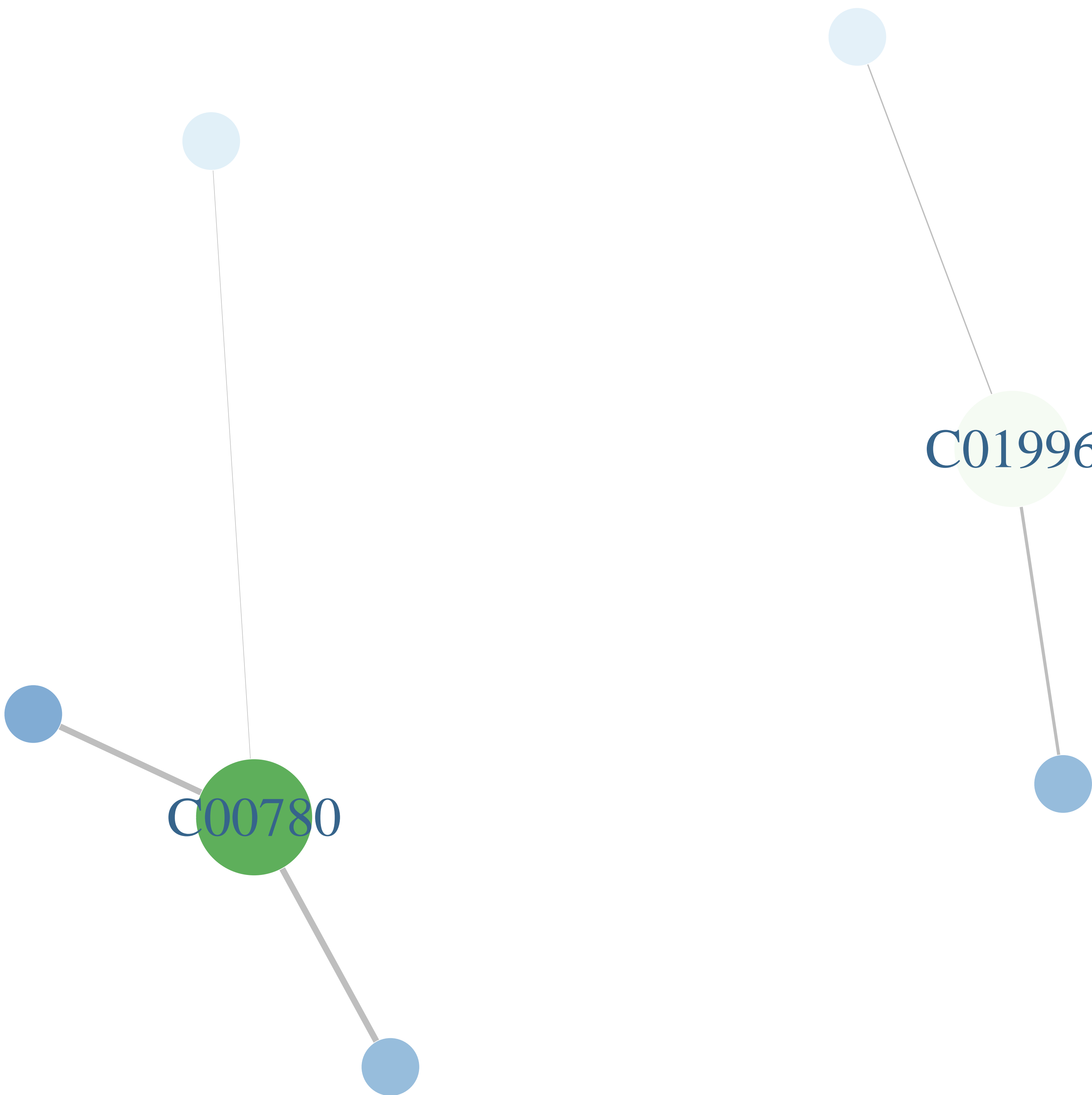
biosynthesis of unsaturated fatty acids ; p-value: 0.159



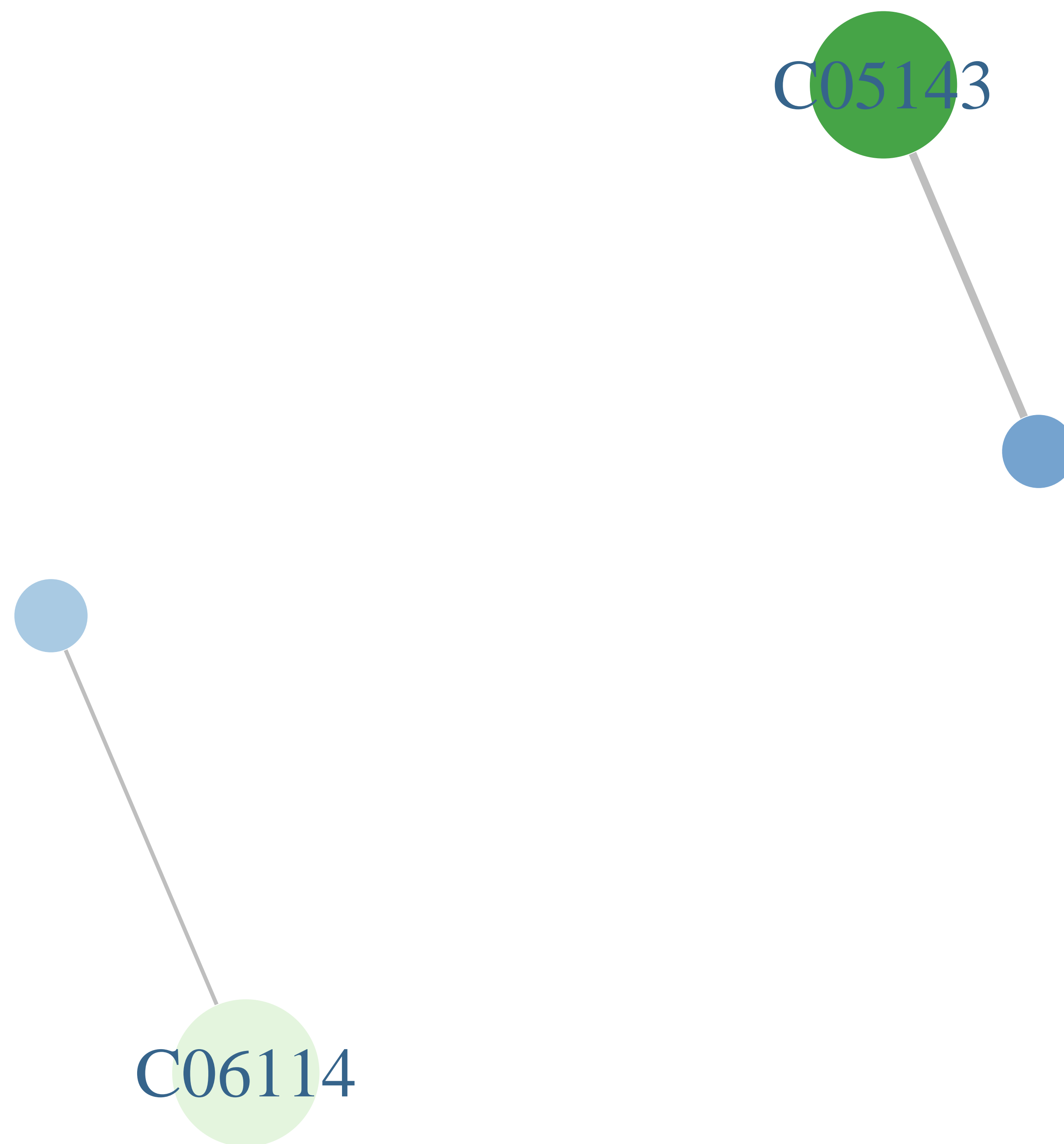
c21-steroid hormone biosynthesis and metabolism ; p-value: 0.407



camp signaling pathway ; p-value: 0.084

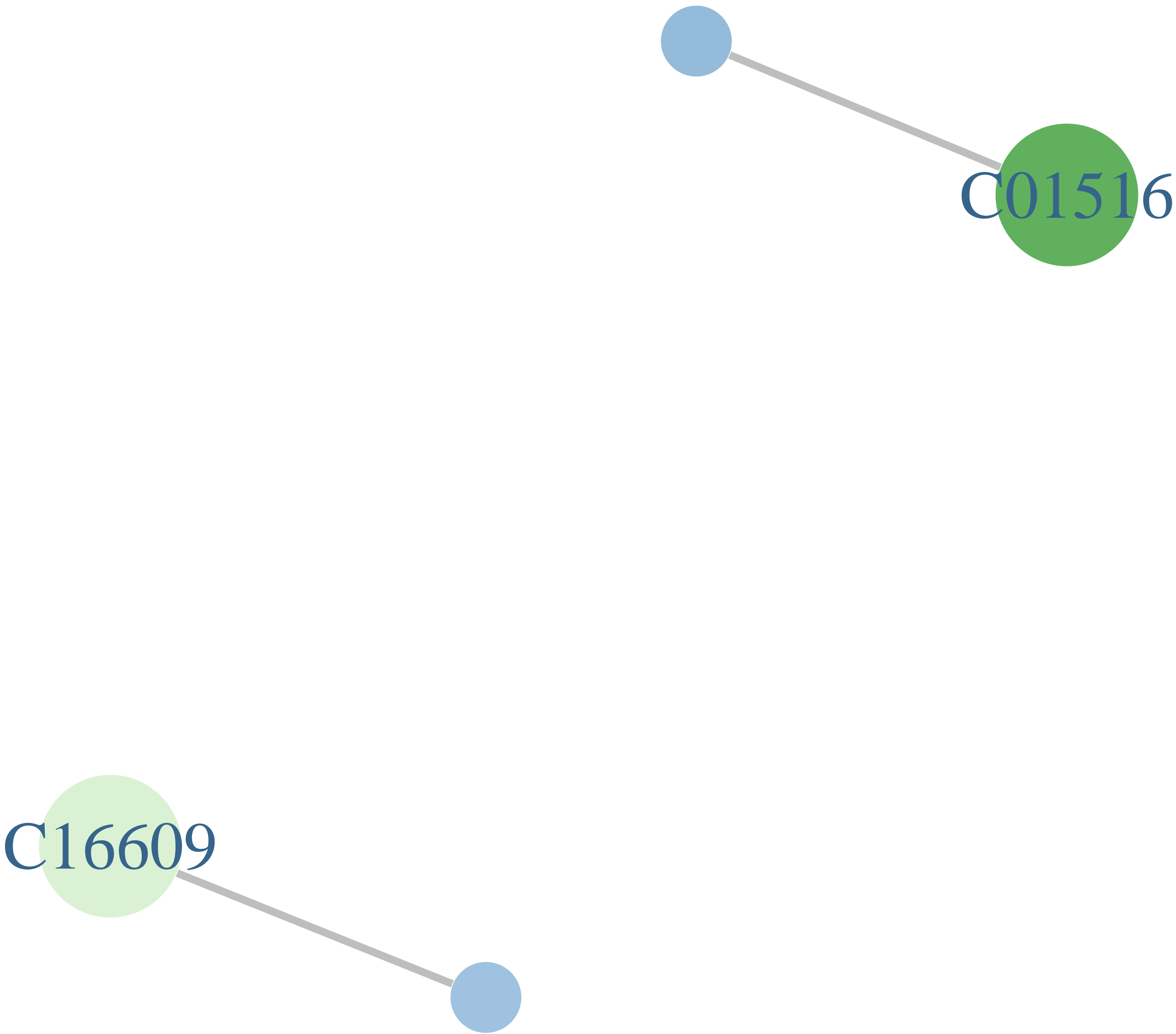


cyanoamino acid metabolism ; p-value: 0.12

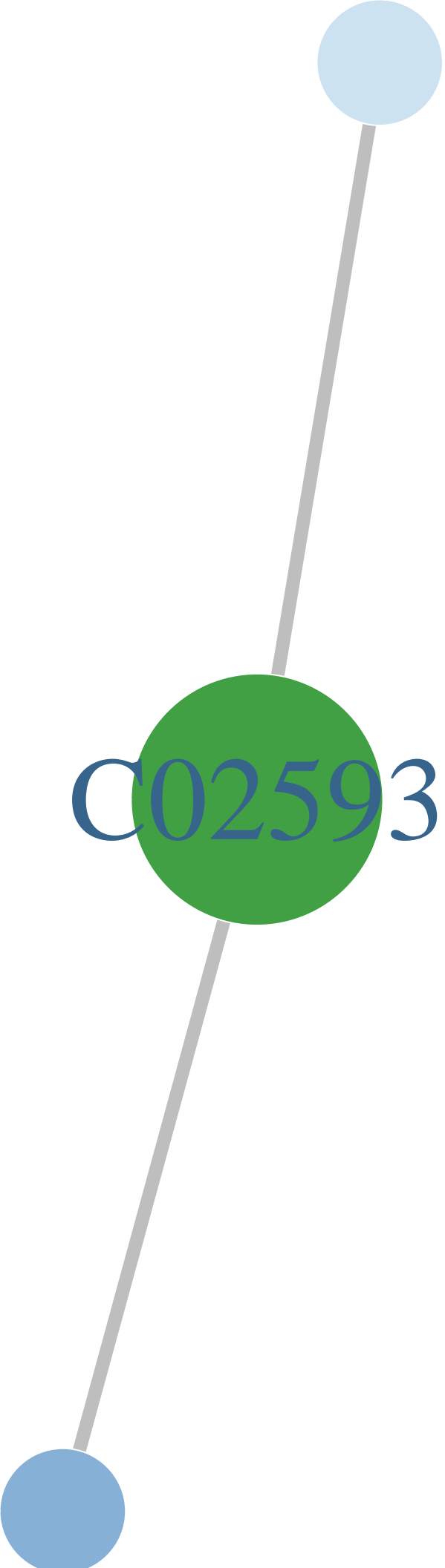


Mouse Brain Metabolomics Data
Olfactory Bulb Week 16 v.s. Week 59
Pathway Plots

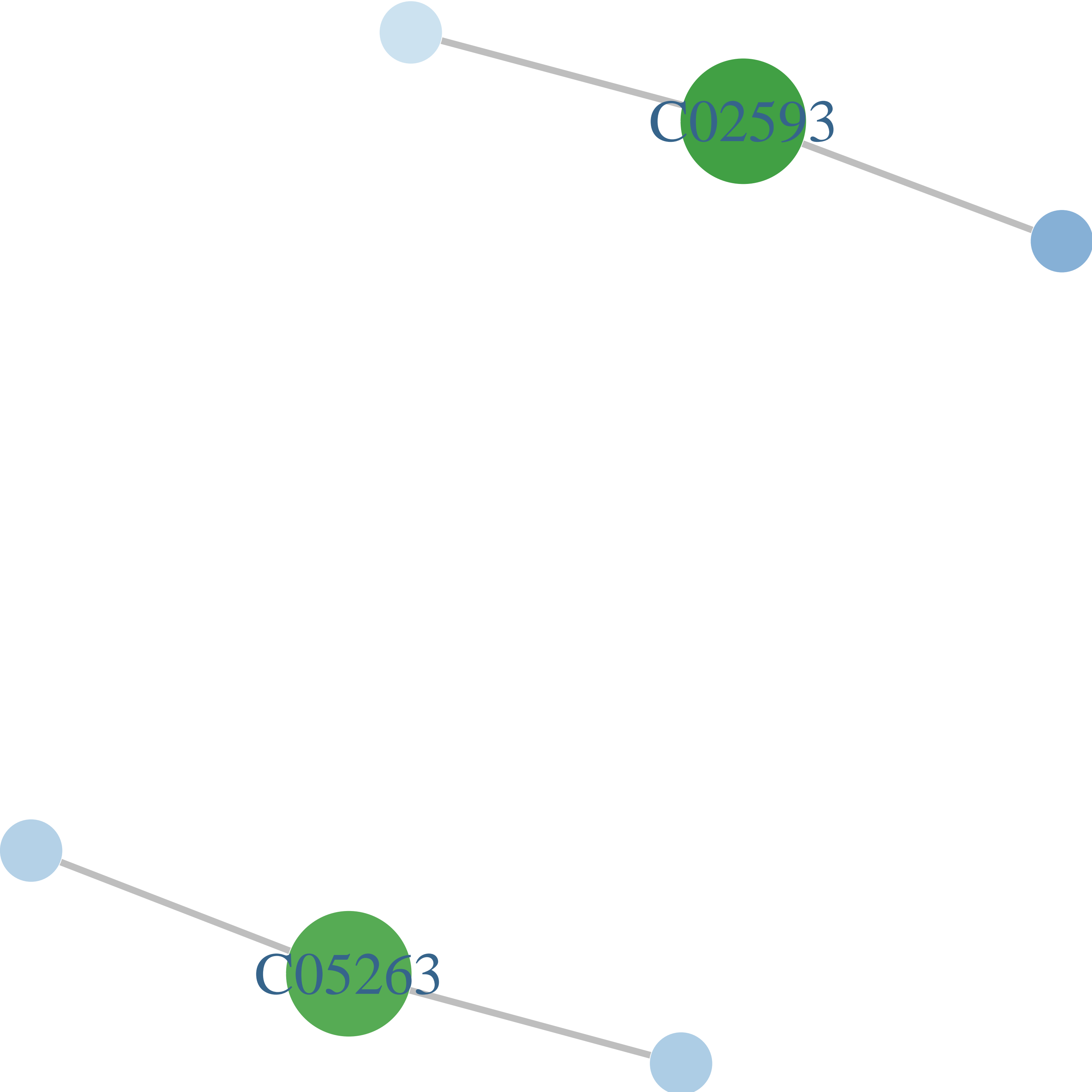
drug metabolism – cytochrome p450 ; p-value: 0.28



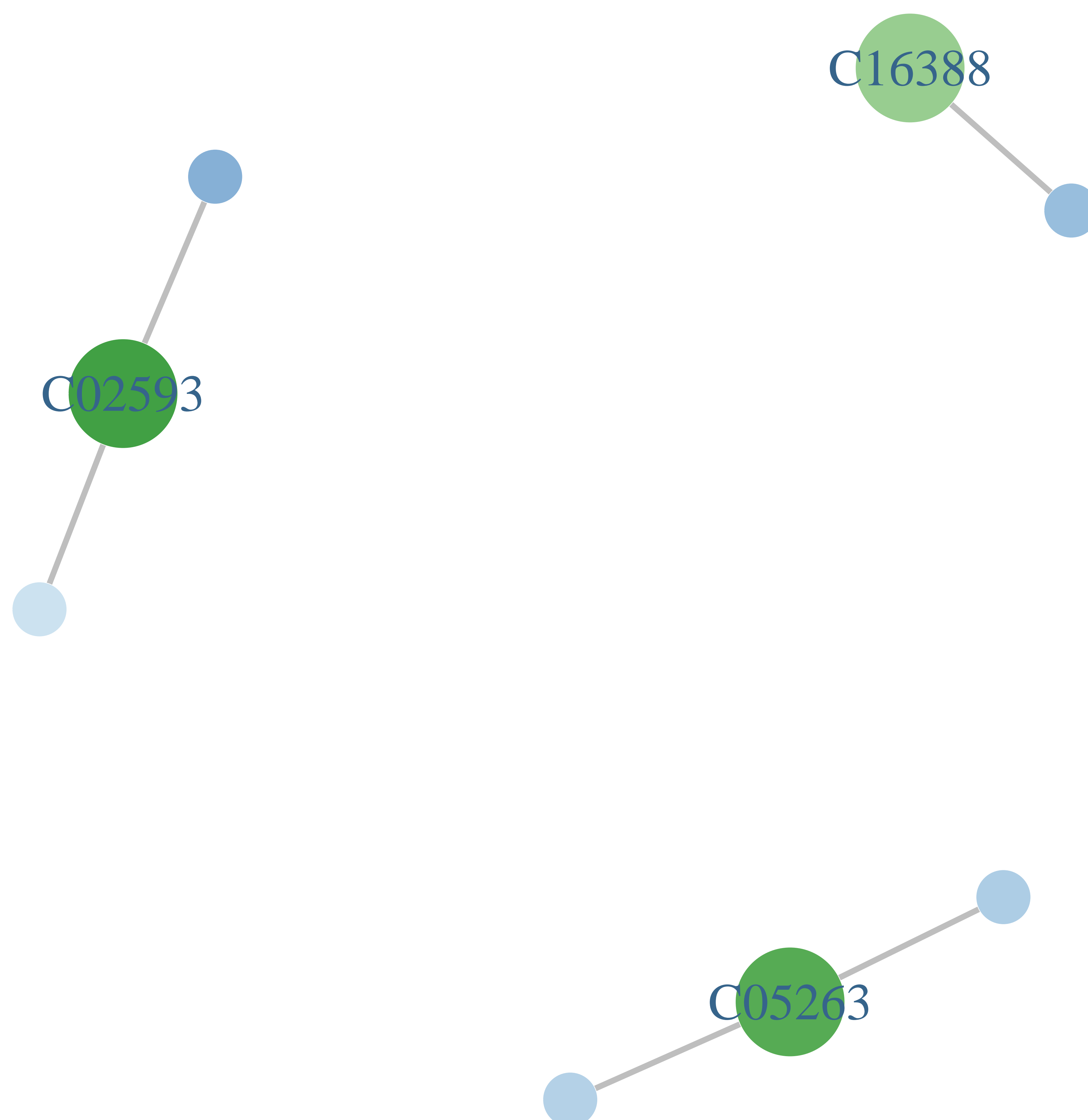
fatty acid degradation ; p-value: 0.384



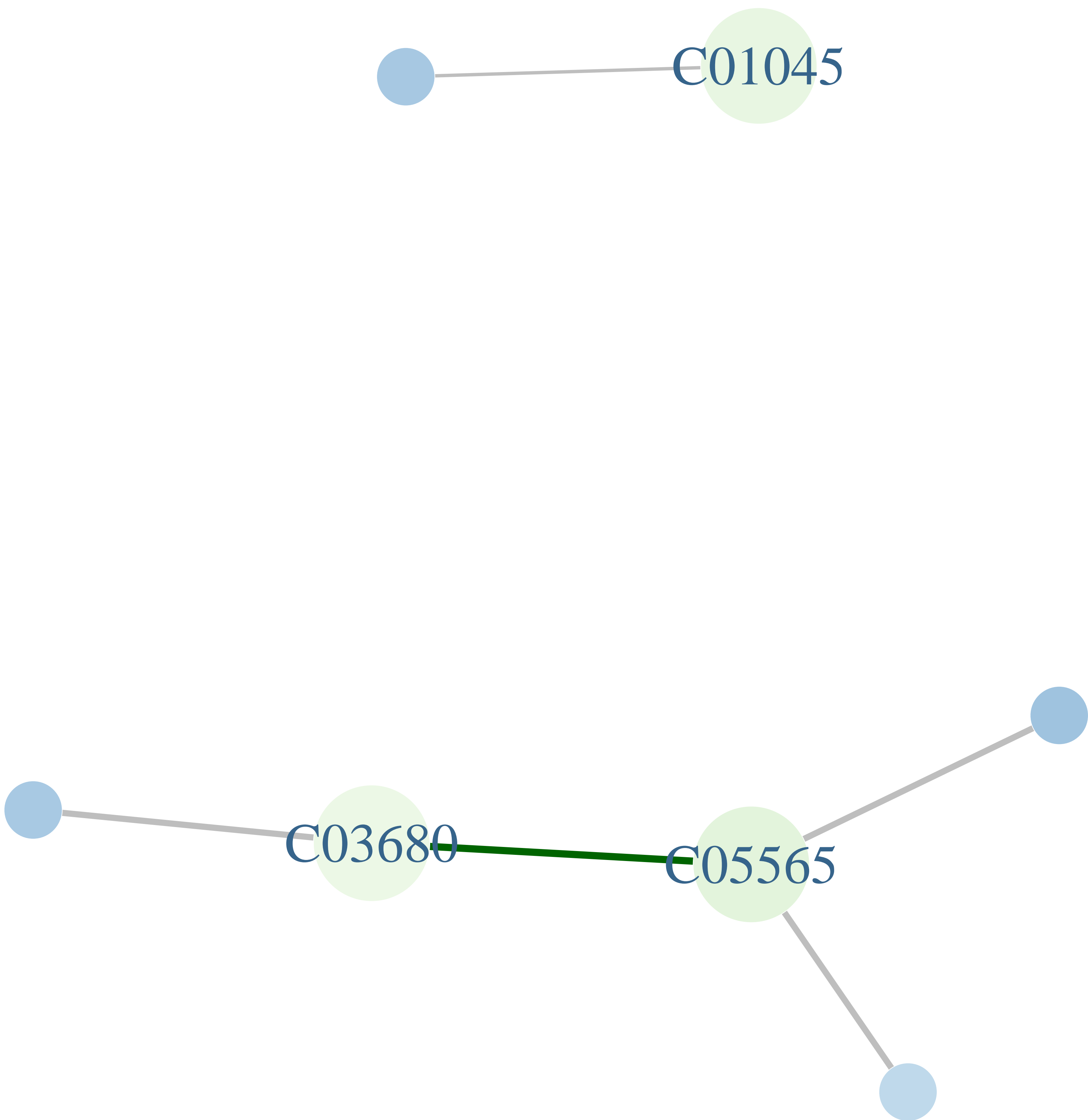
fatty acid elongation in mitochondria ; p-value: 0.28



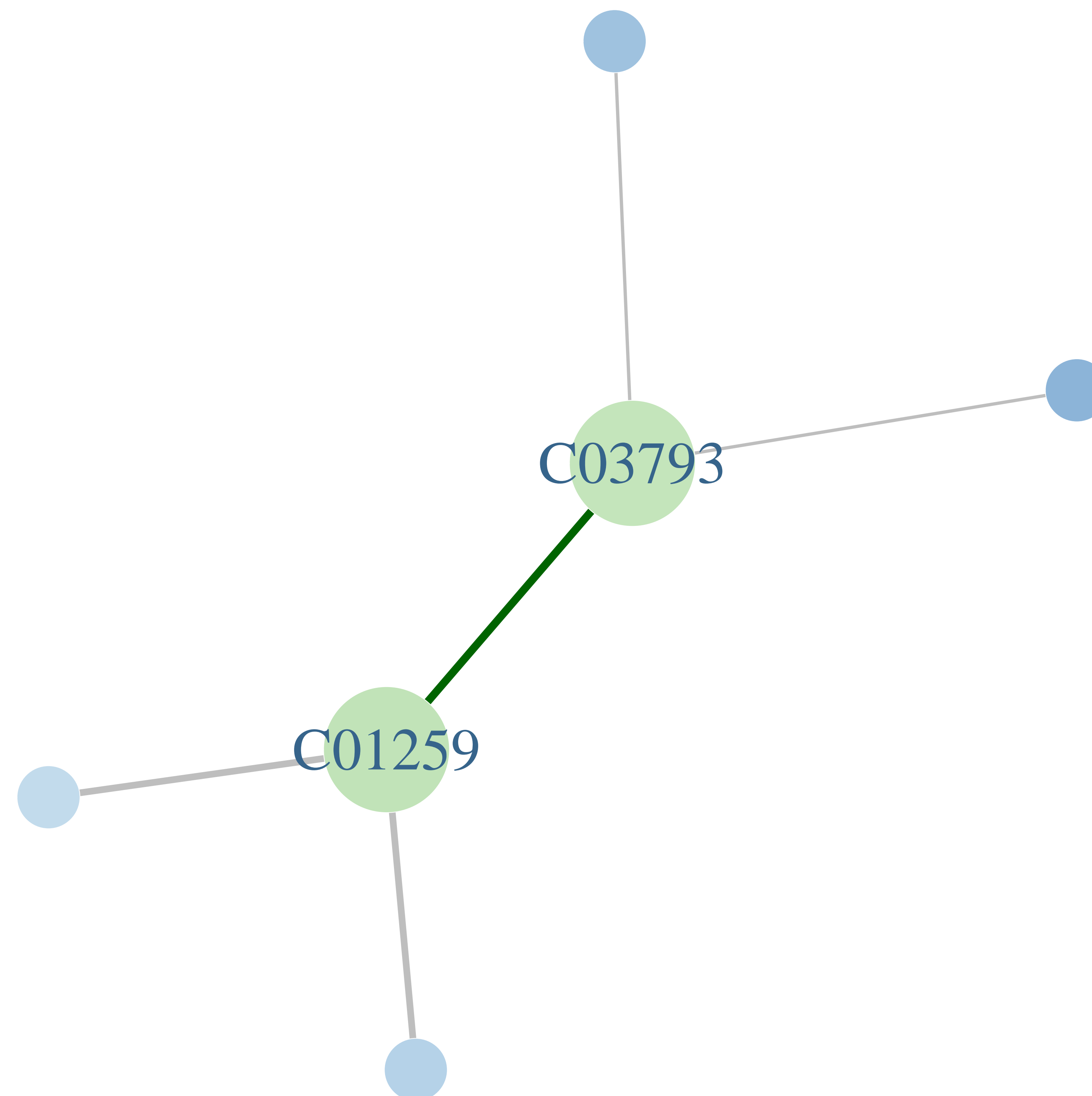
fatty acid metabolism ; p-value: 0.391



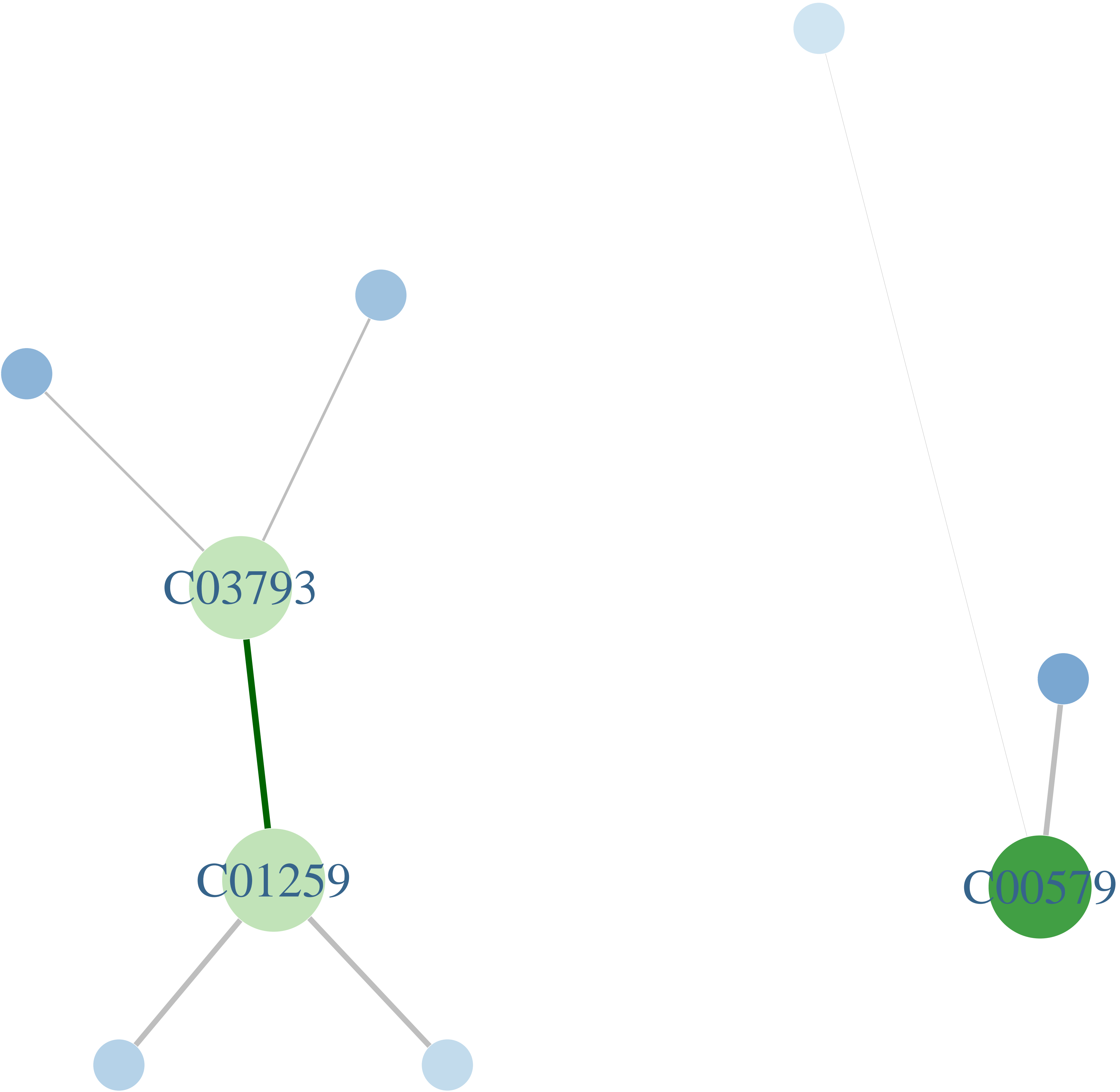
histidine metabolism ; p-value: 0.108



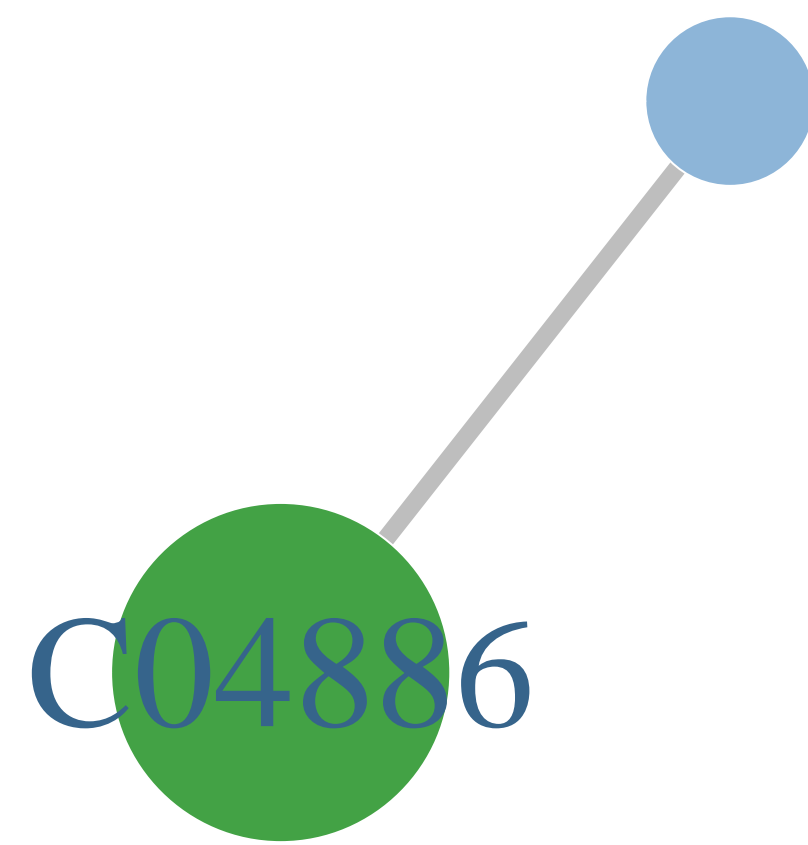
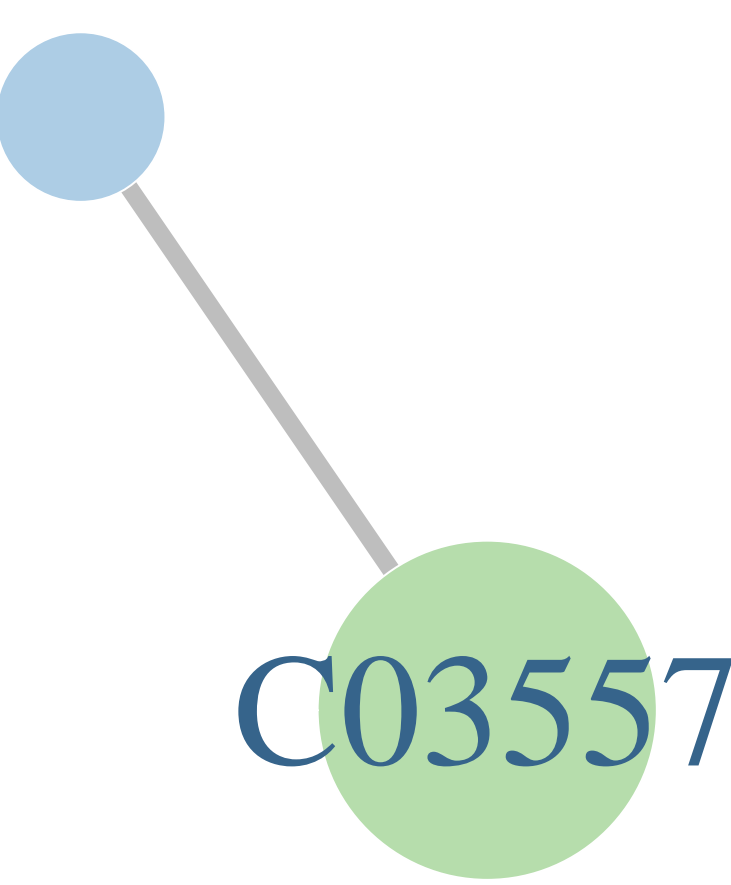
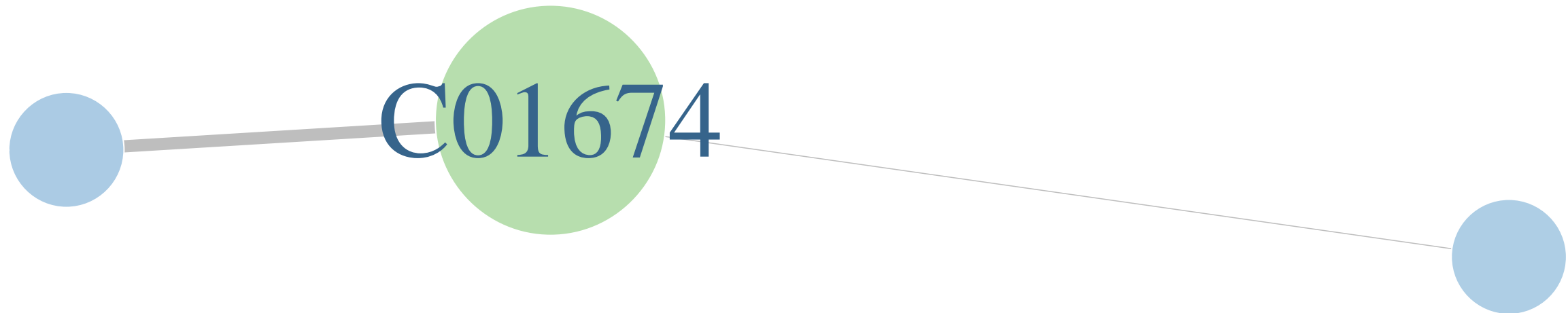
lysine degradation ; p-value: 0.19



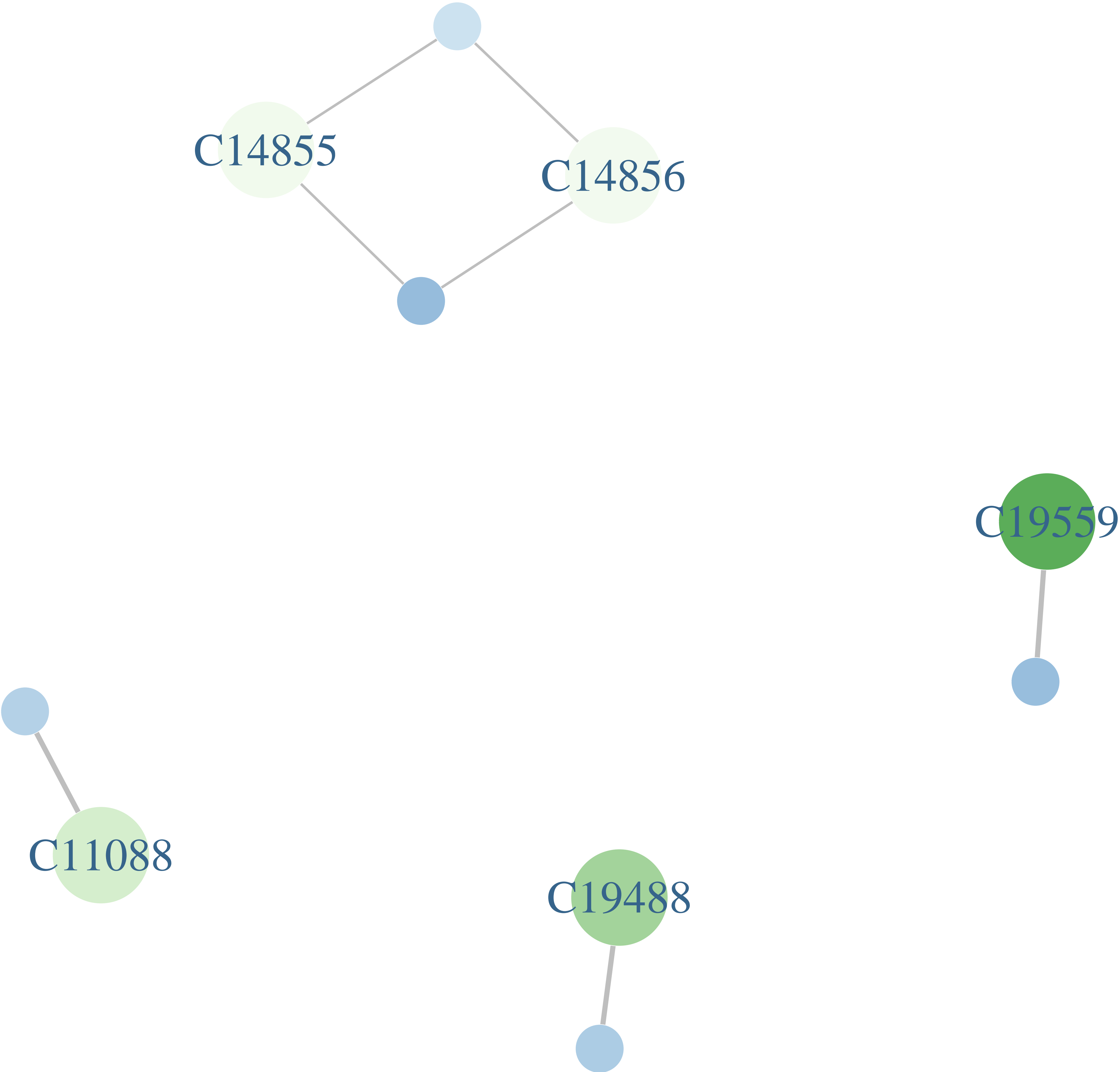
lysine metabolism ; p-value: 0.016



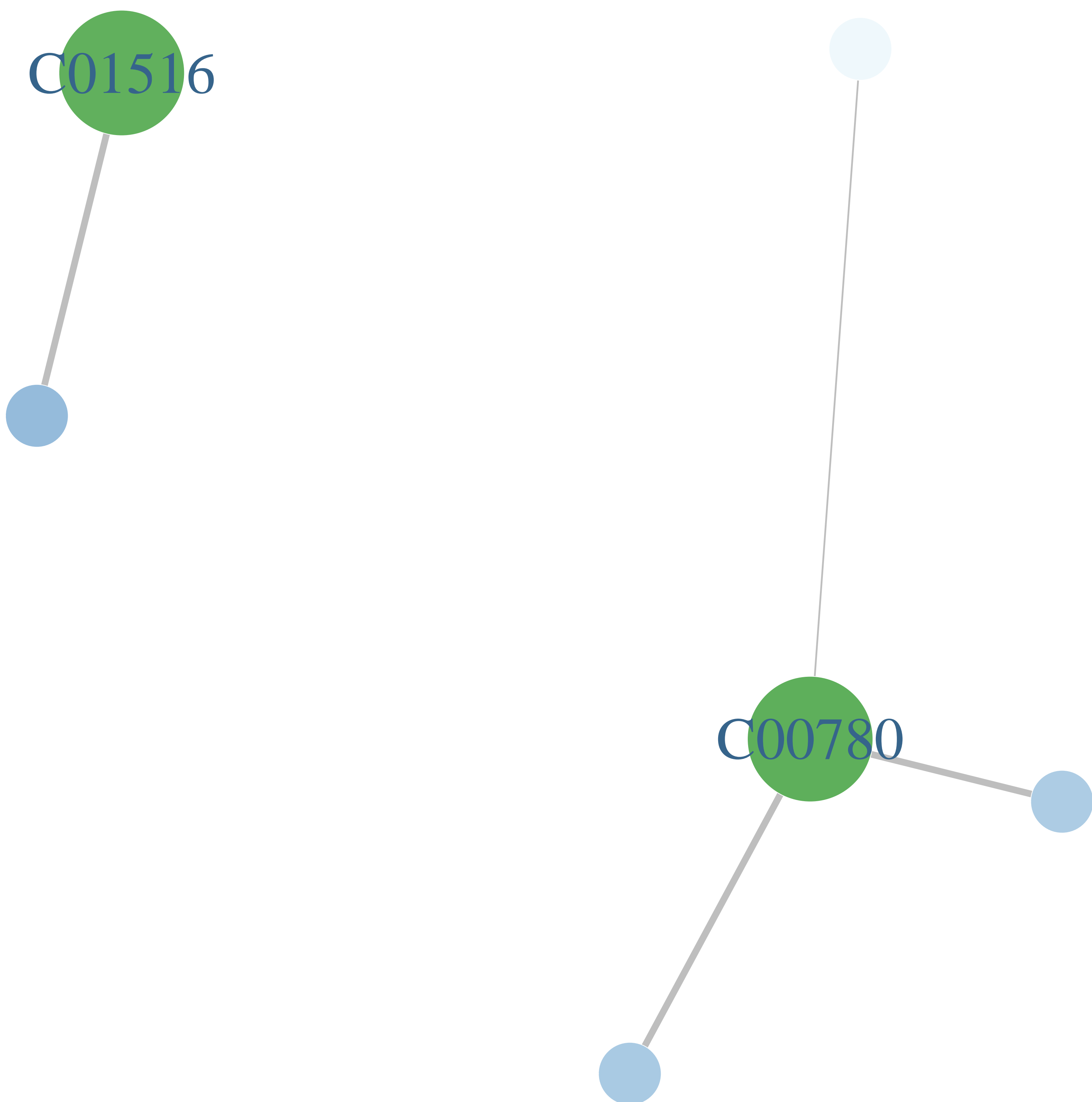
amino sugar metabolism ; p-value: 0.076



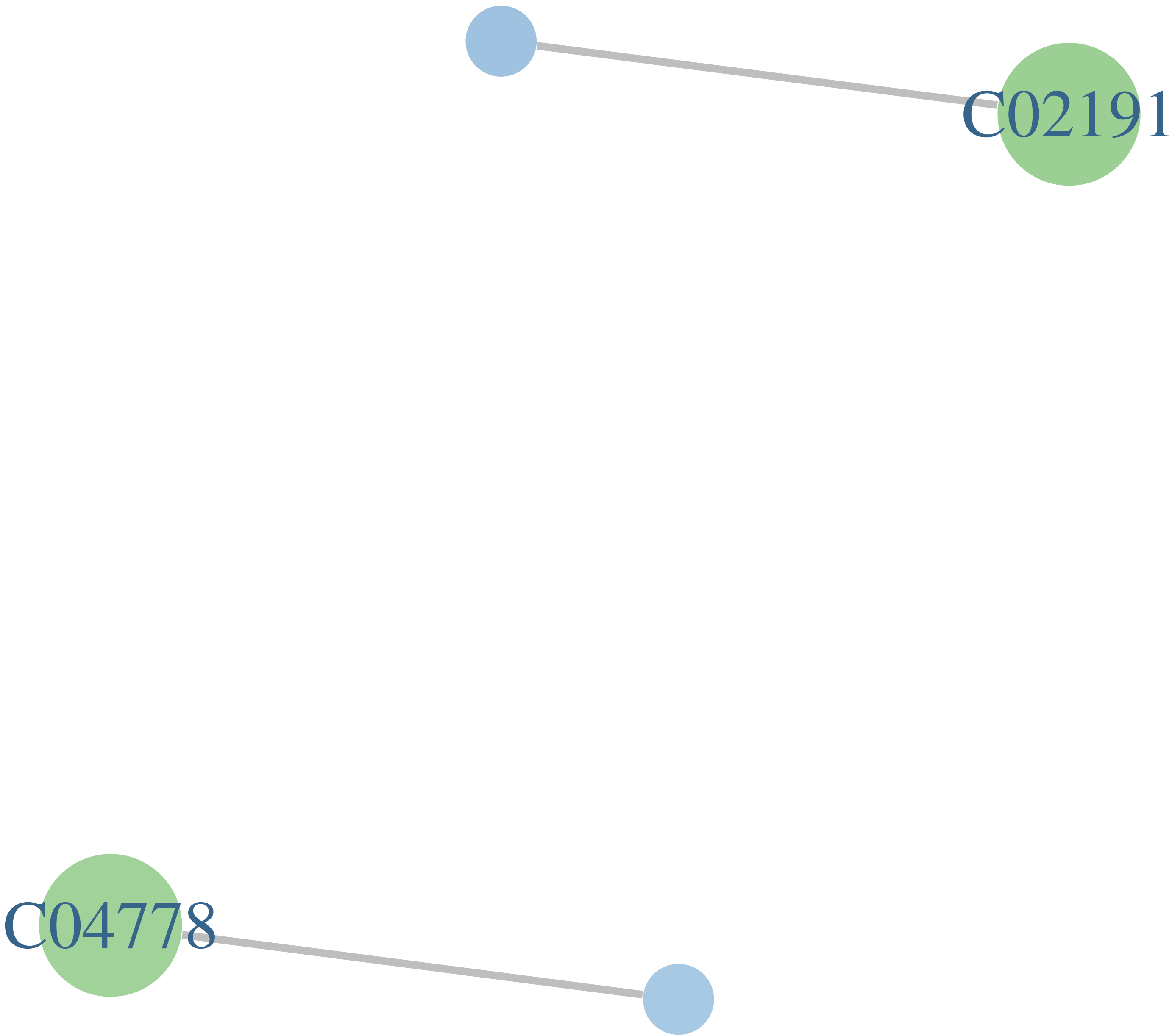
metabolism of xenobiotics by cytochrome p450 ; p-value: 0.062



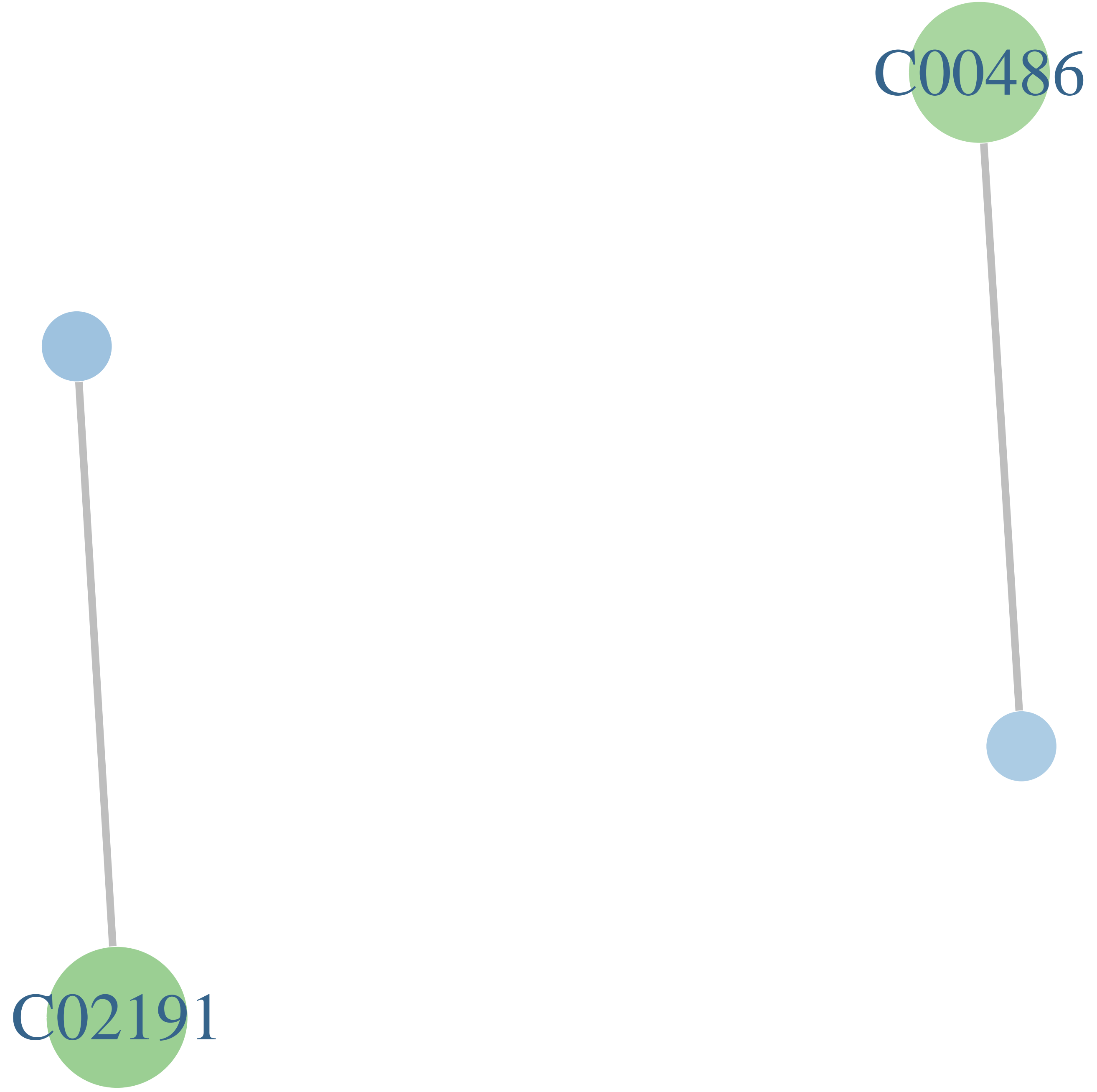
neuroactive ligand–receptor interaction ; p–value: 0.355



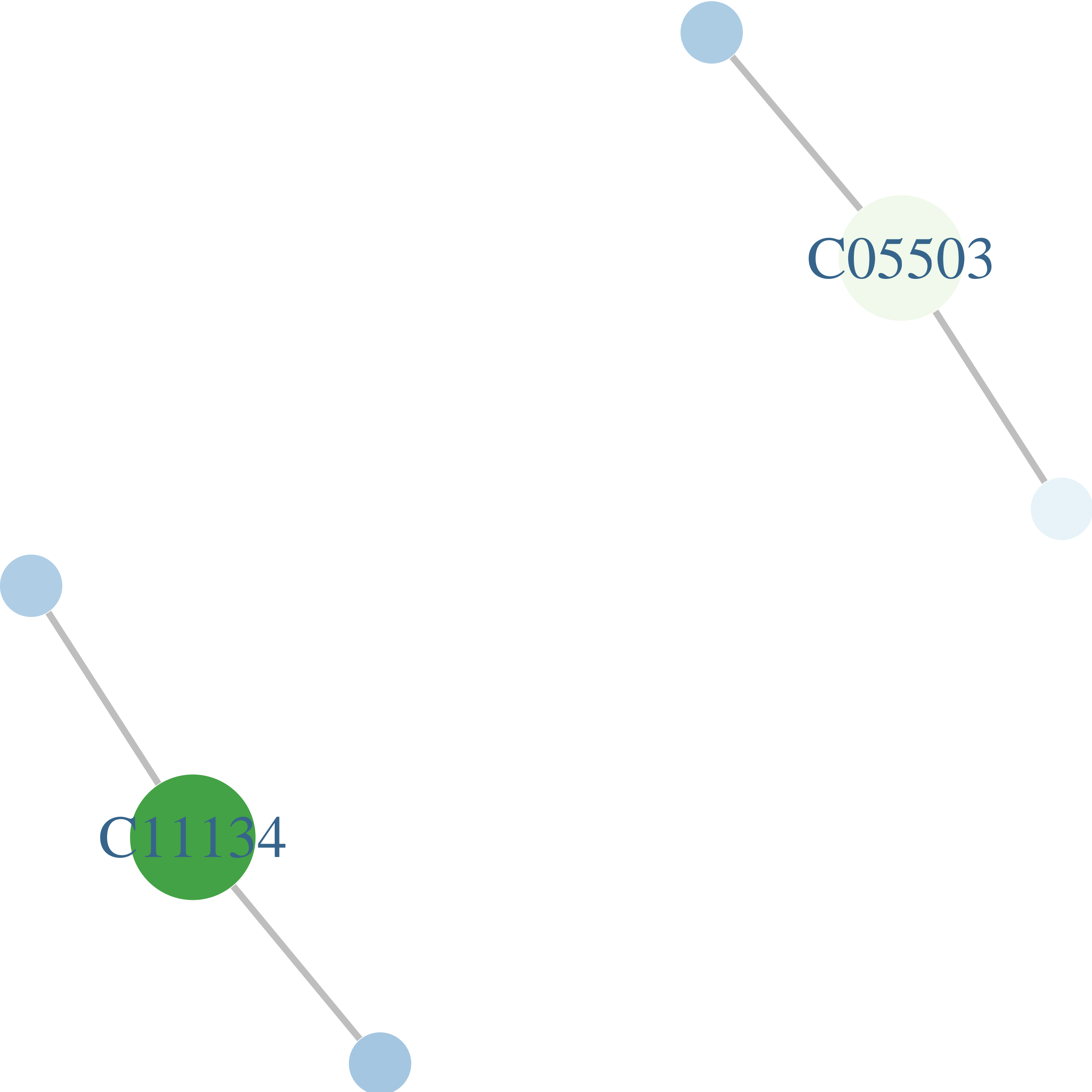
porphyrin and chlorophyll metabolism ; p-value: 0.235



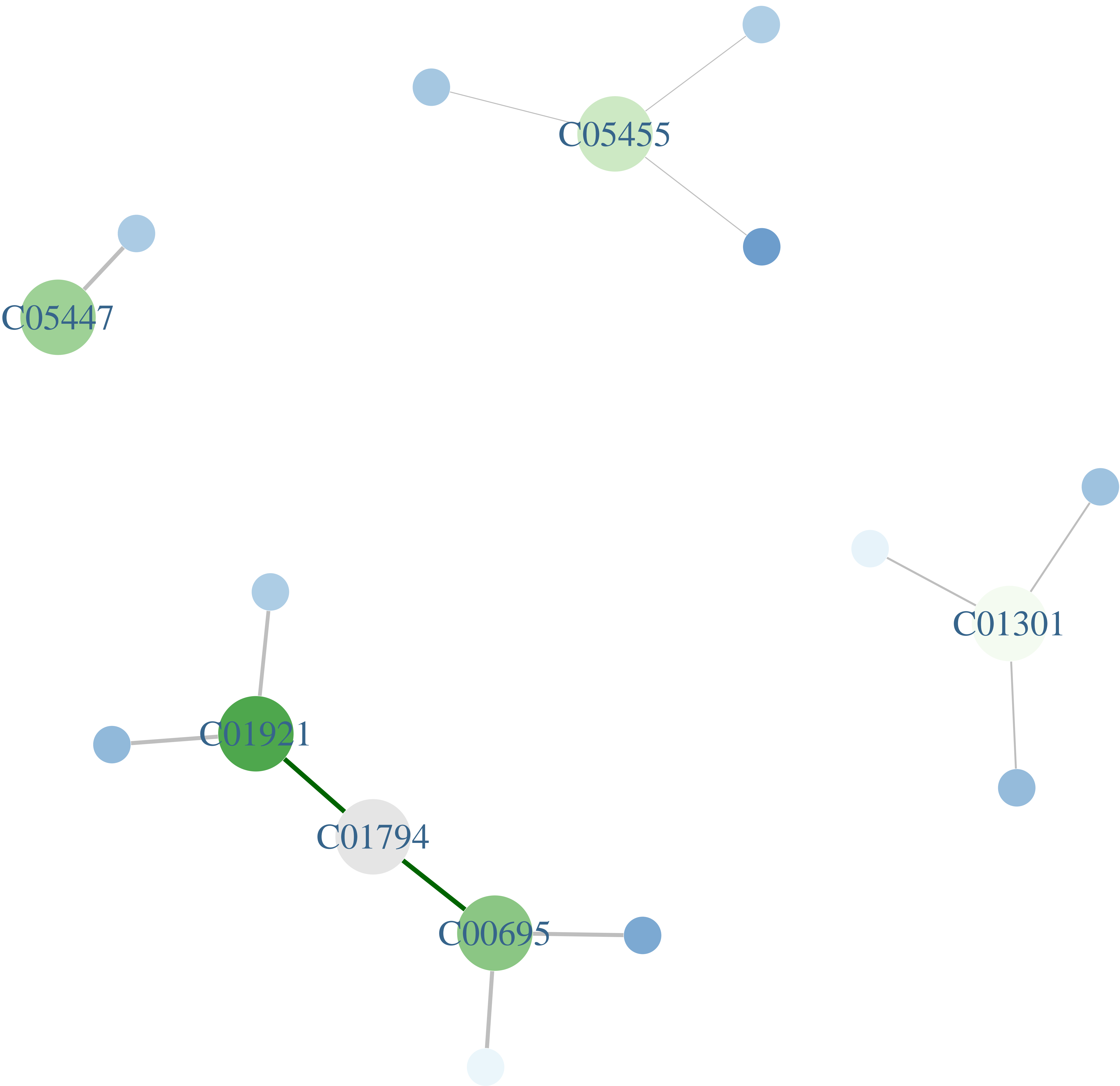
porphyrin metabolism ; p-value: 0.22



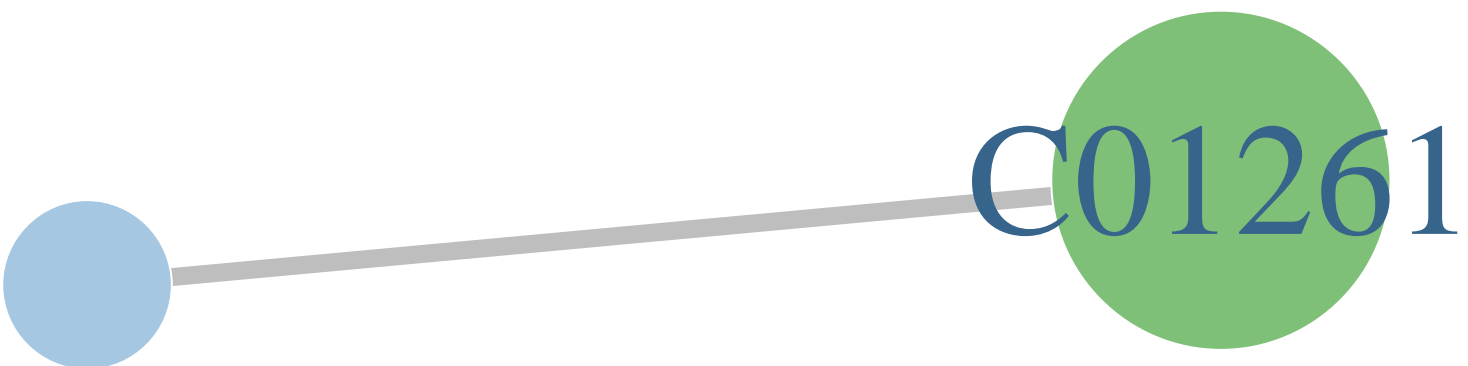
androgen and estrogen metabolism ; p-value: 0.469



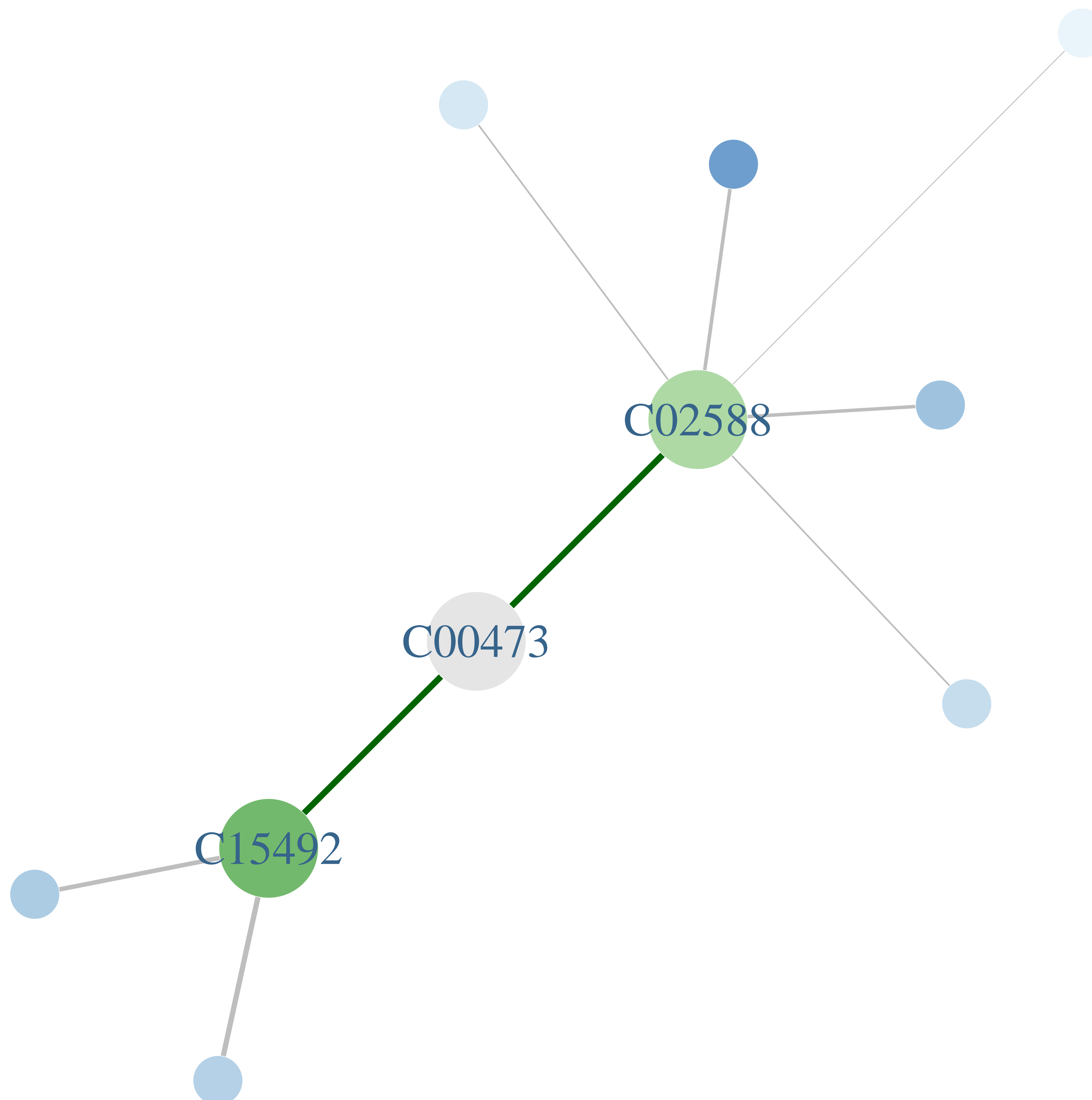
primary bile acid biosynthesis ; p-value: 0.013



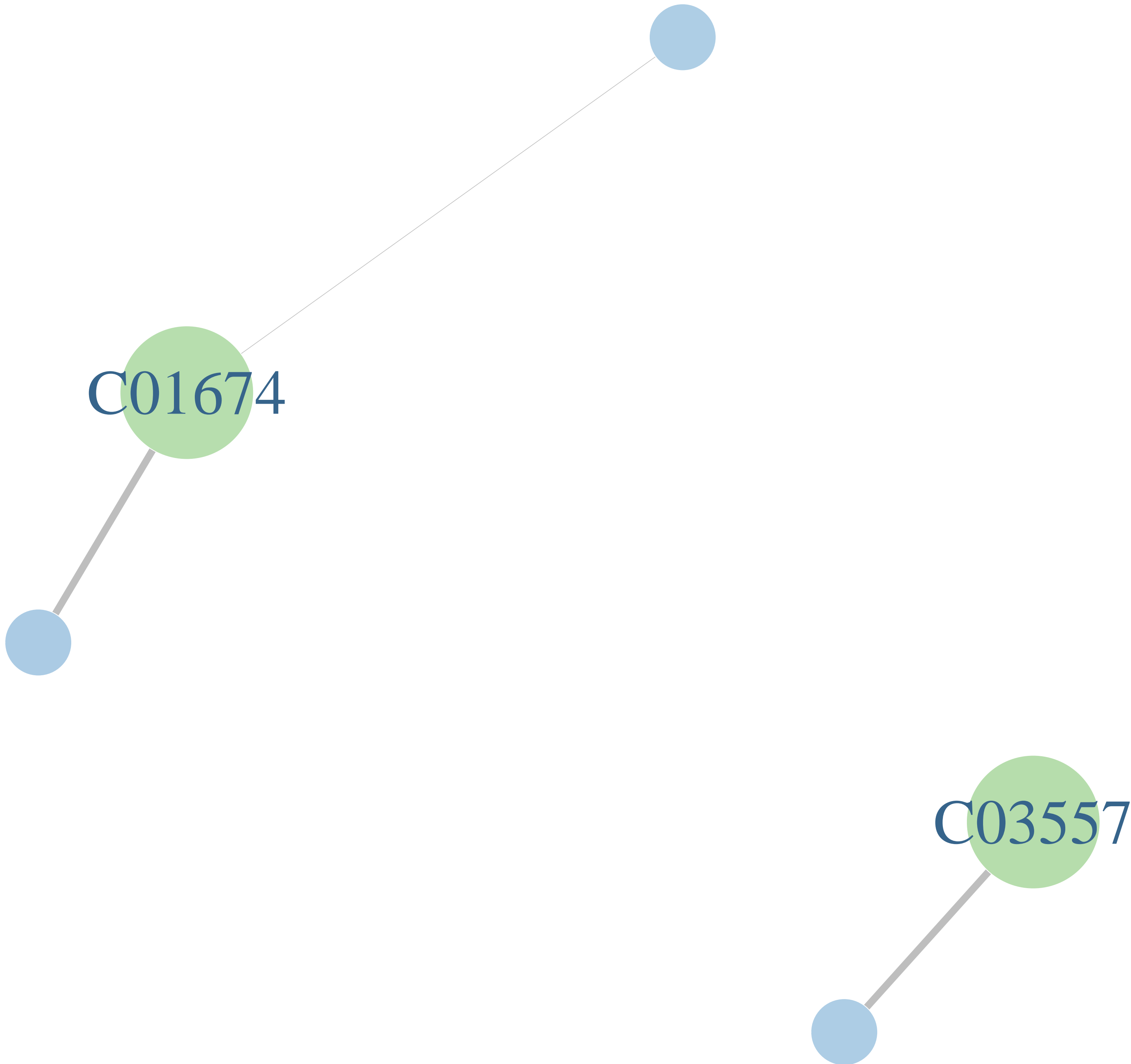
purine metabolism ; p-value: 0.752



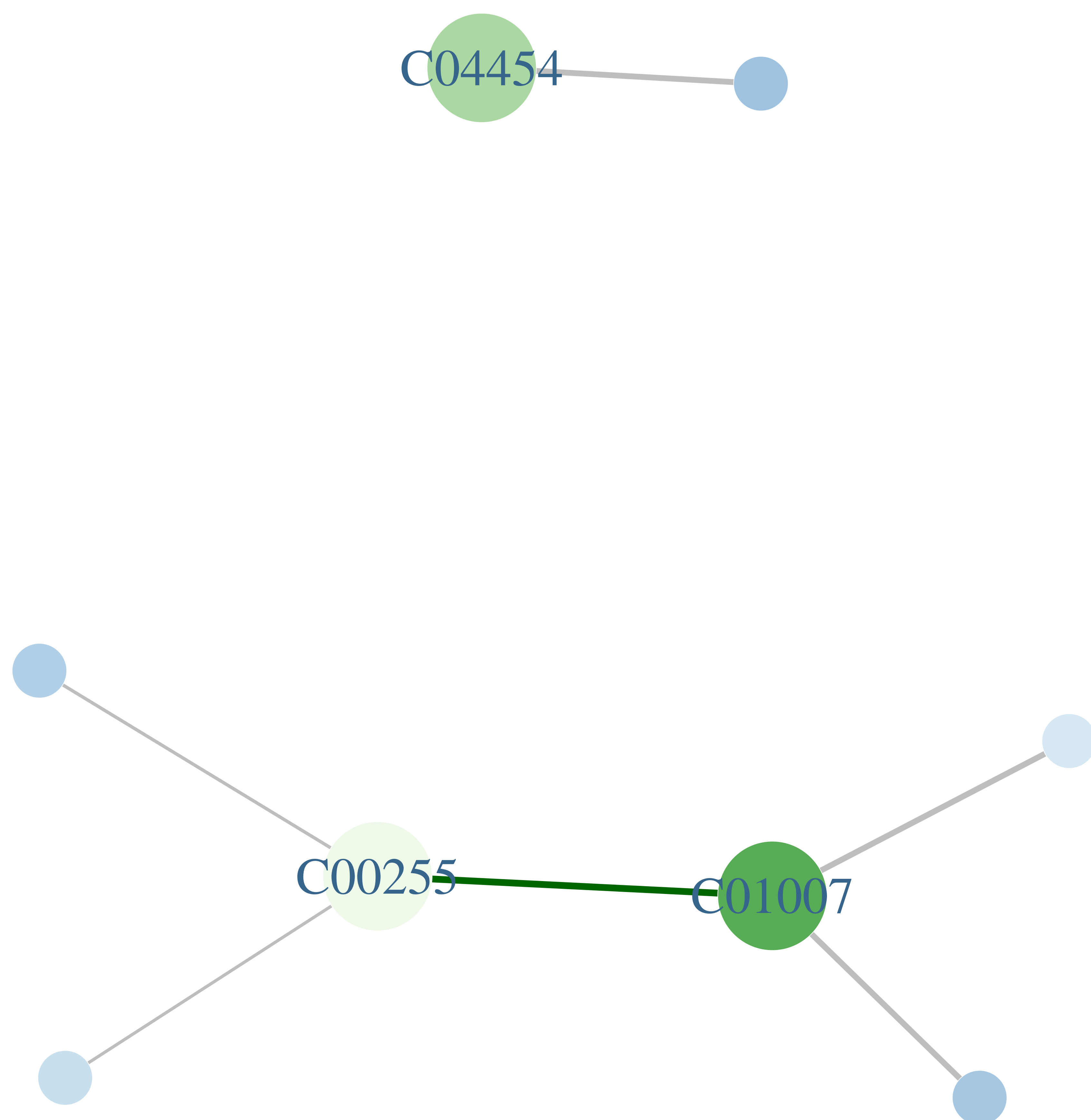
retinol metabolism ; p-value: 0.19



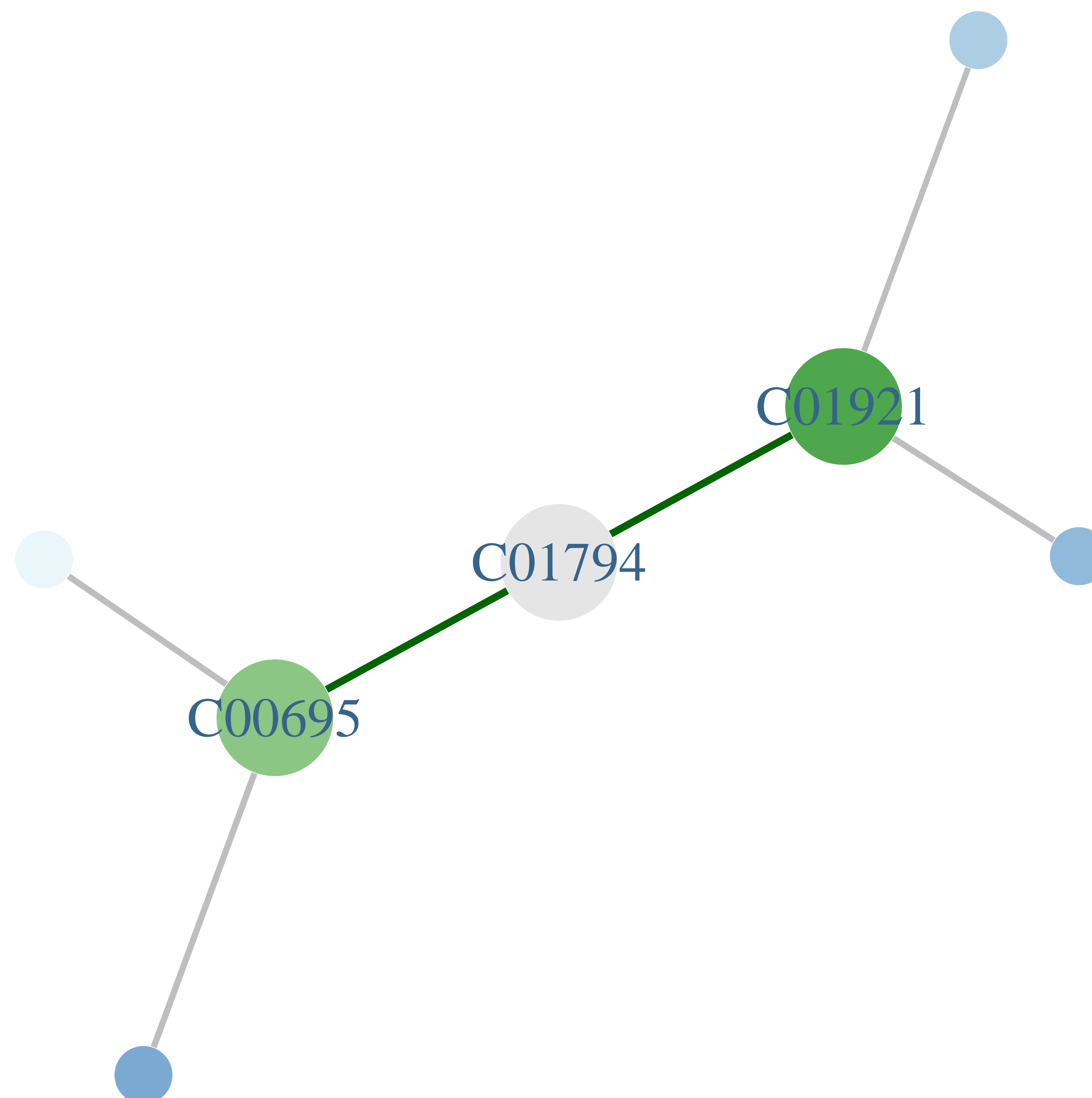
abc transporters ; p-value: 0.533



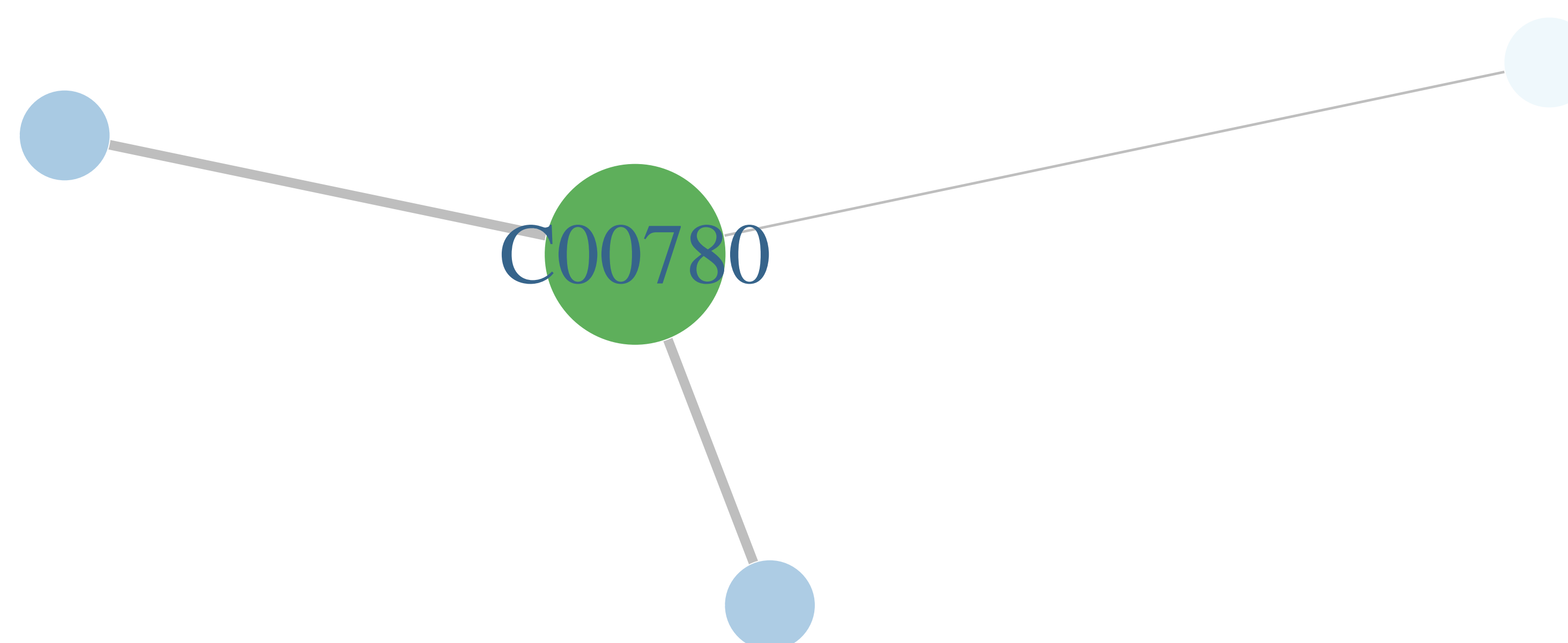
riboflavin metabolism ; p-value: 0.008



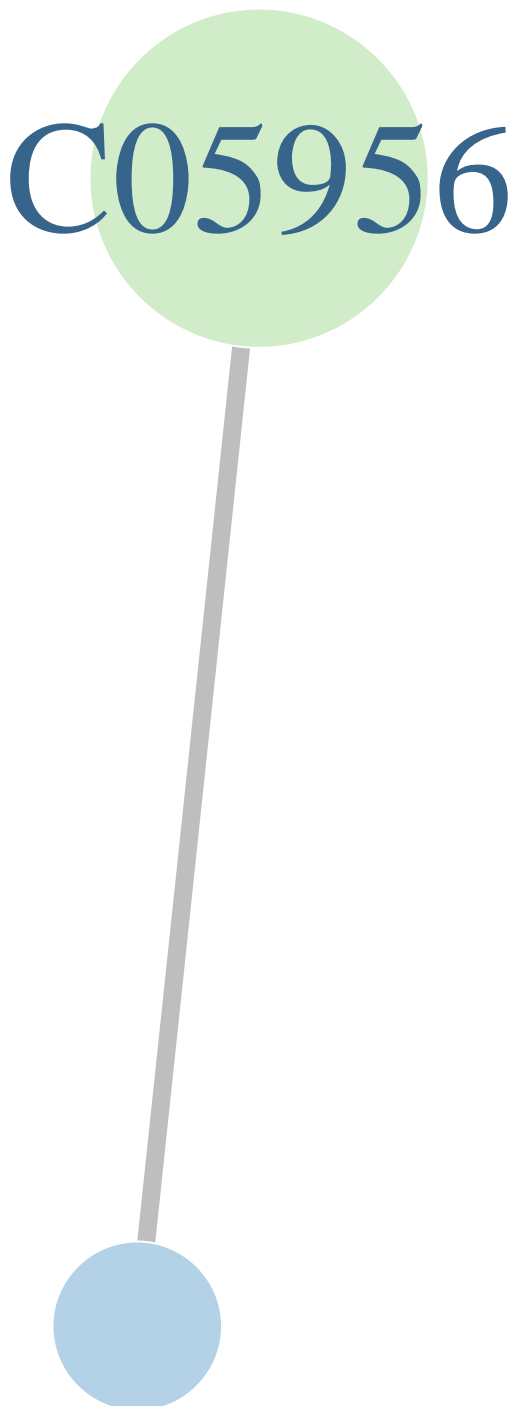
secondary bile acid biosynthesis ; p-value: 0.038



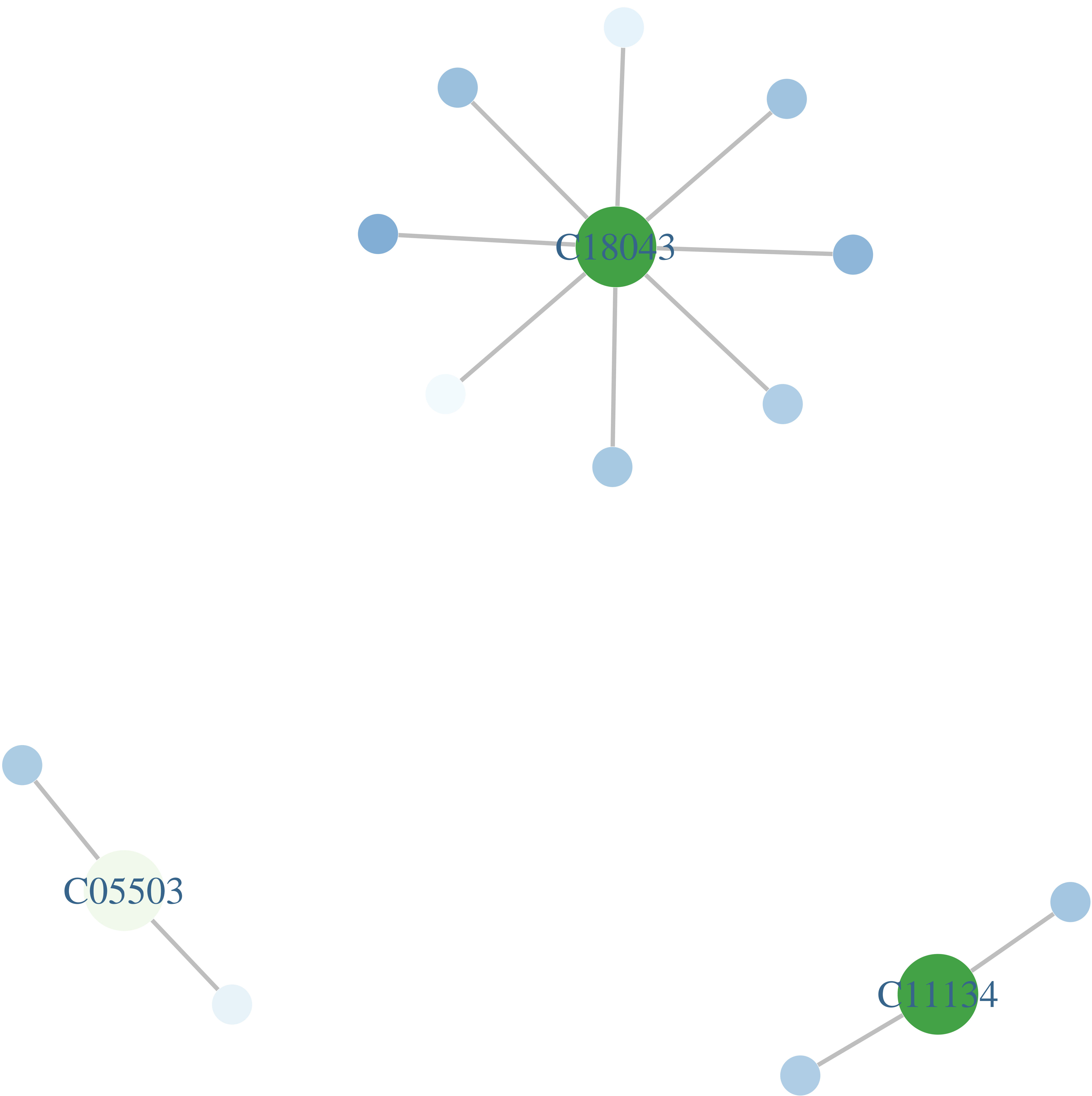
serotonergic synapse ; p-value: 0.205



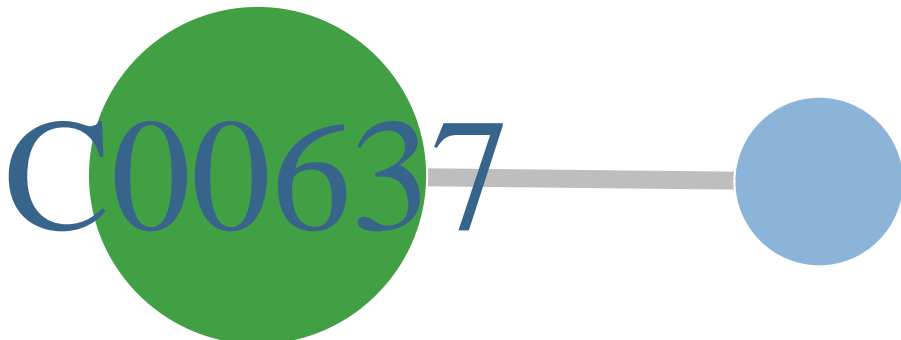
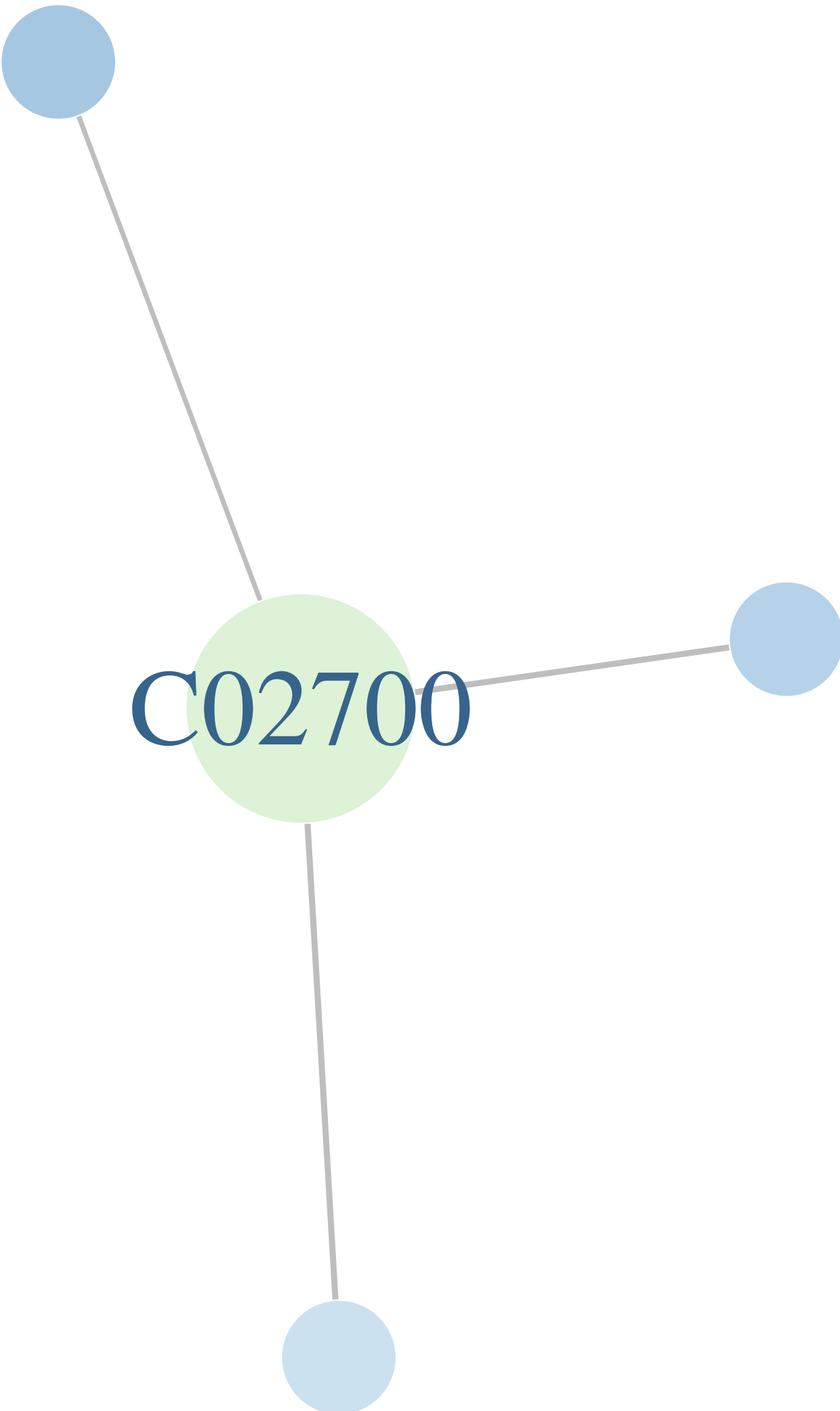
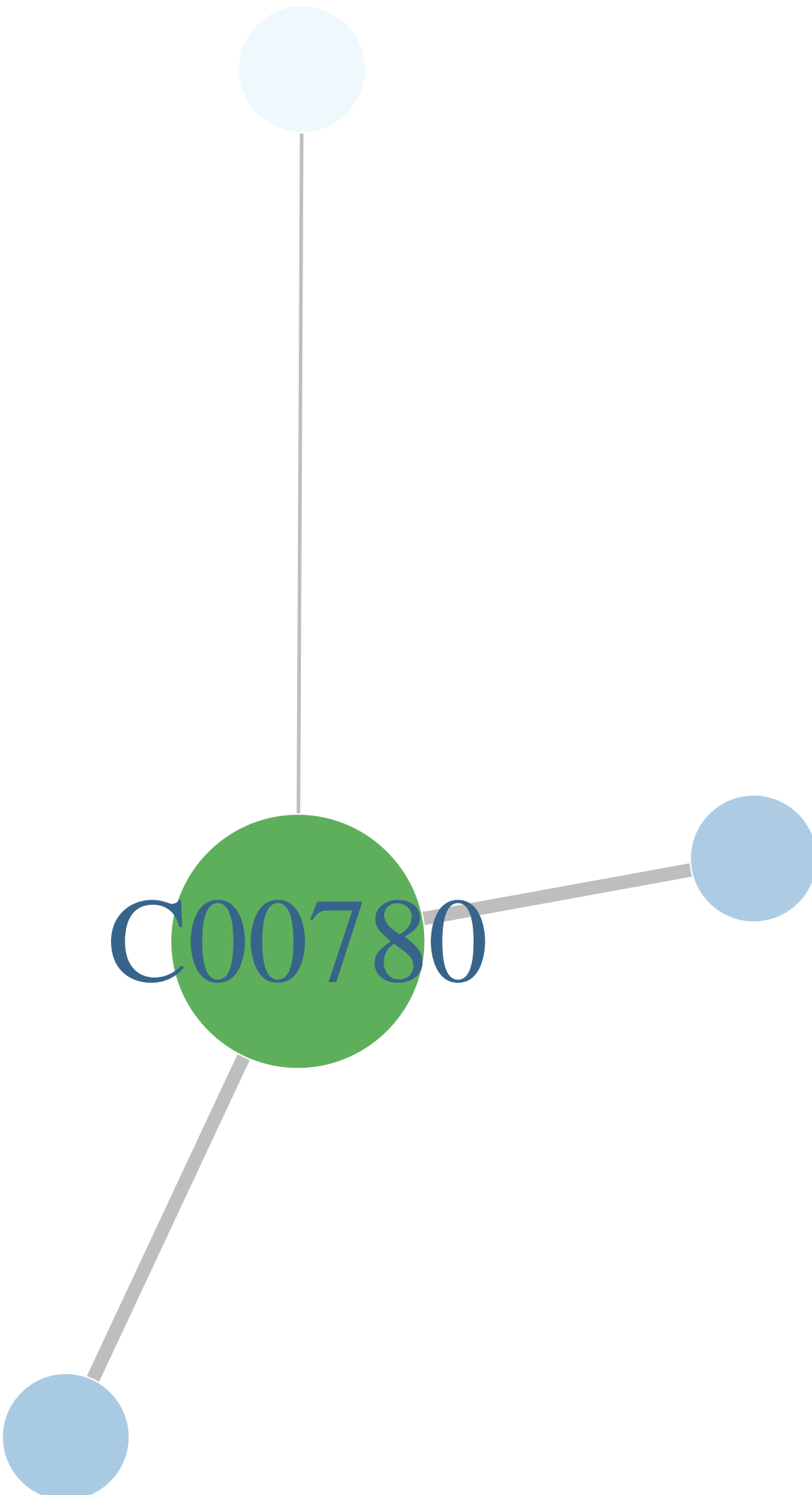
arachidonic acid metabolism ; p-value: 0.495



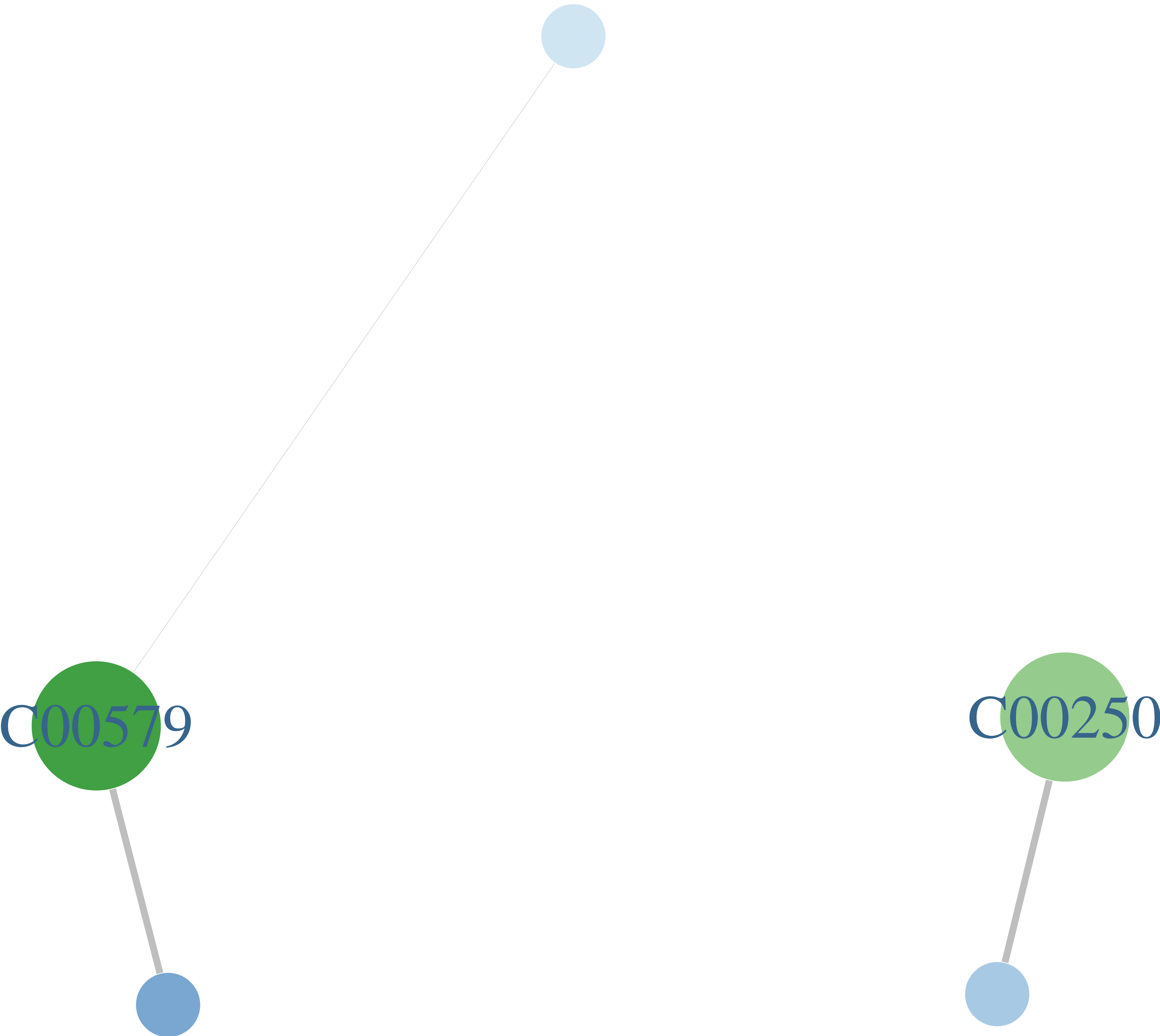
steroid hormone biosynthesis ; p-value: 0.559



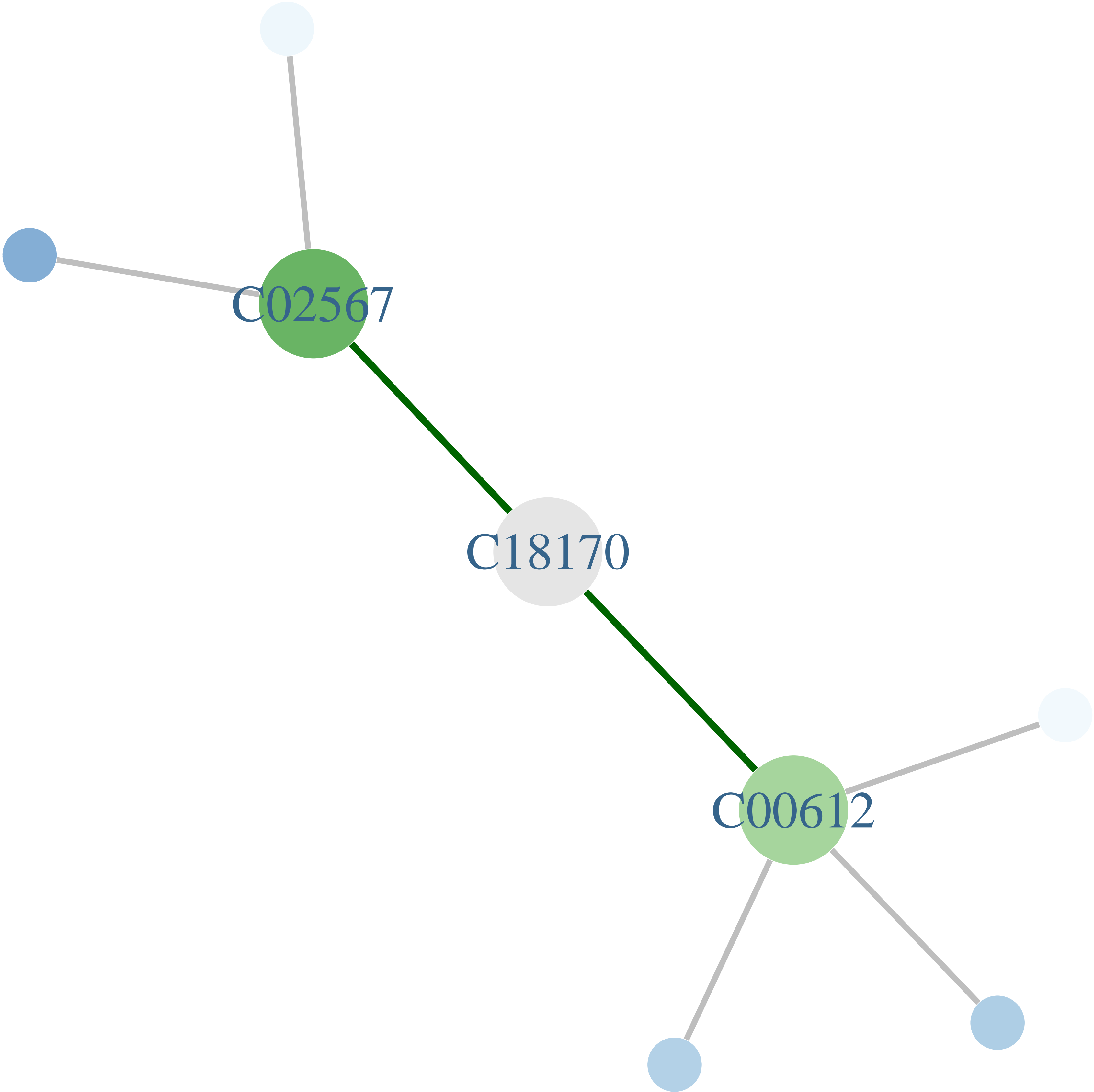
tryptophan metabolism ; p-value: 0.324



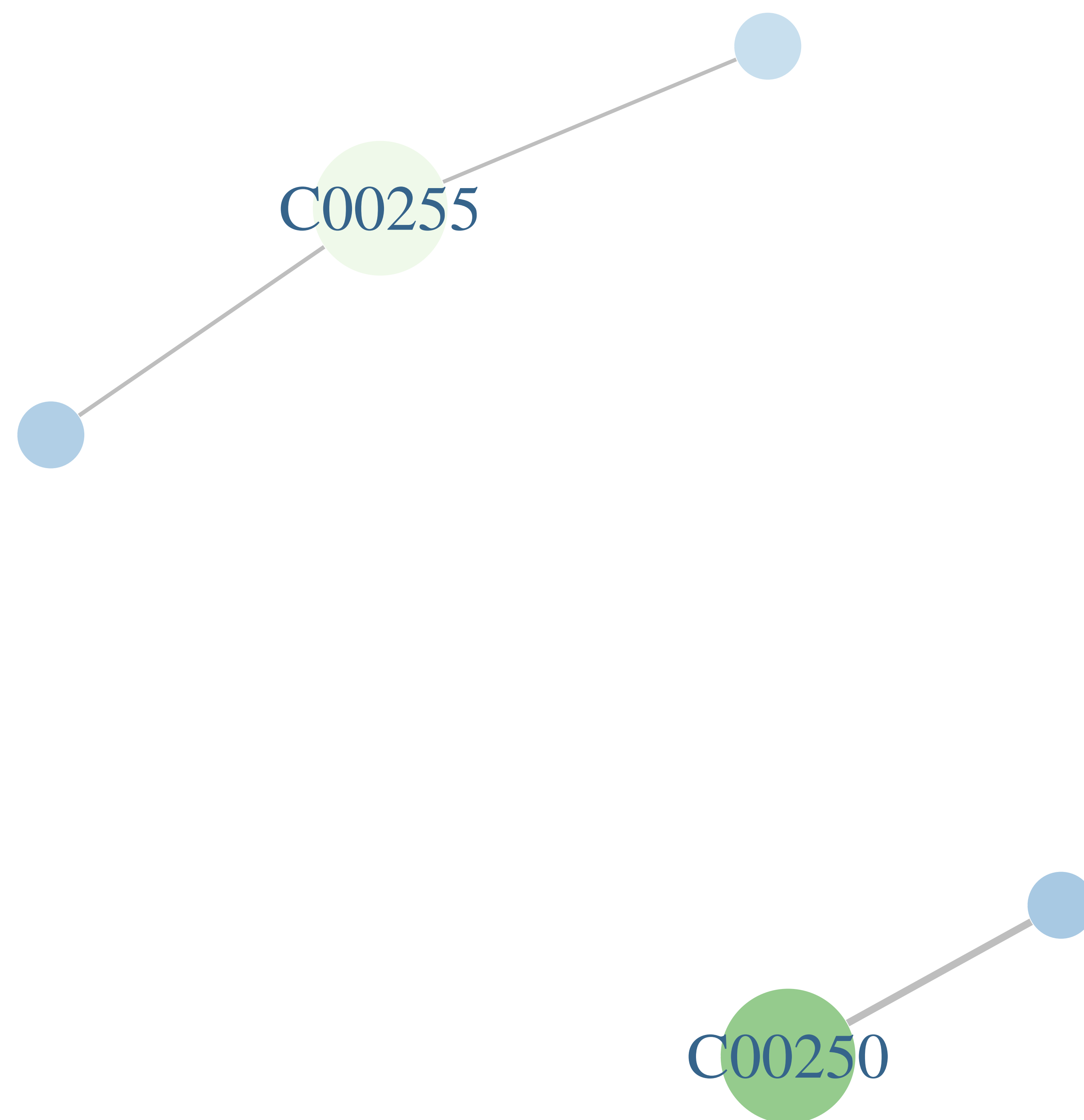
valine, leucine, and isoleucine degradation ; p-value: 0.427



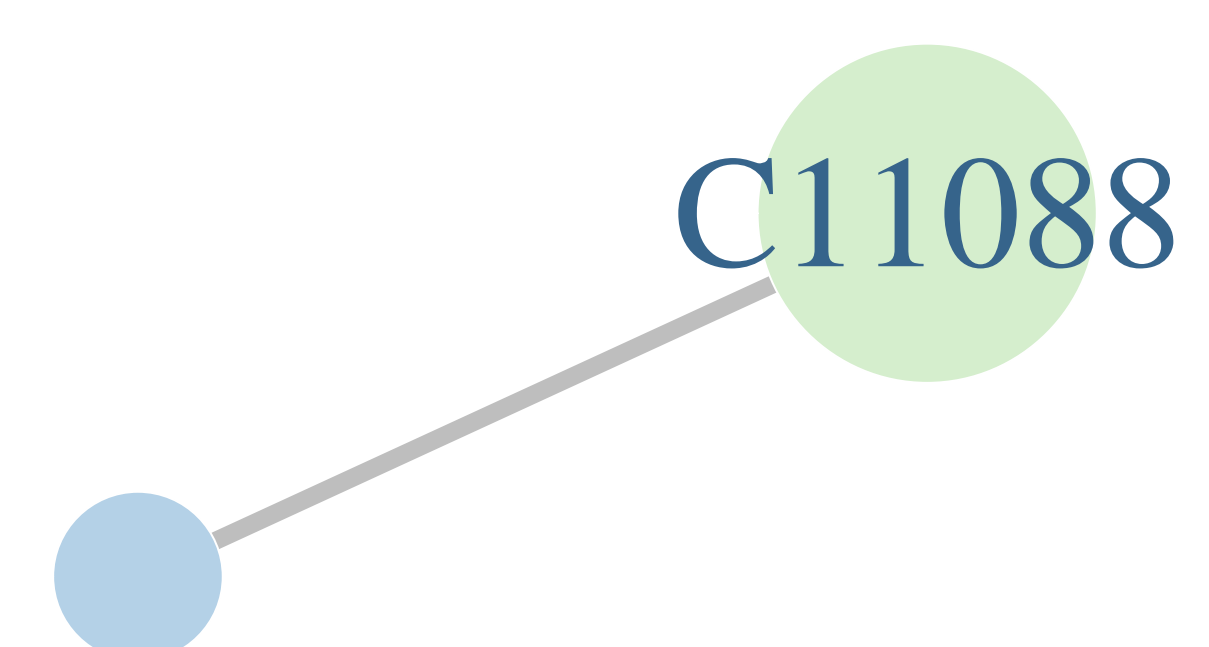
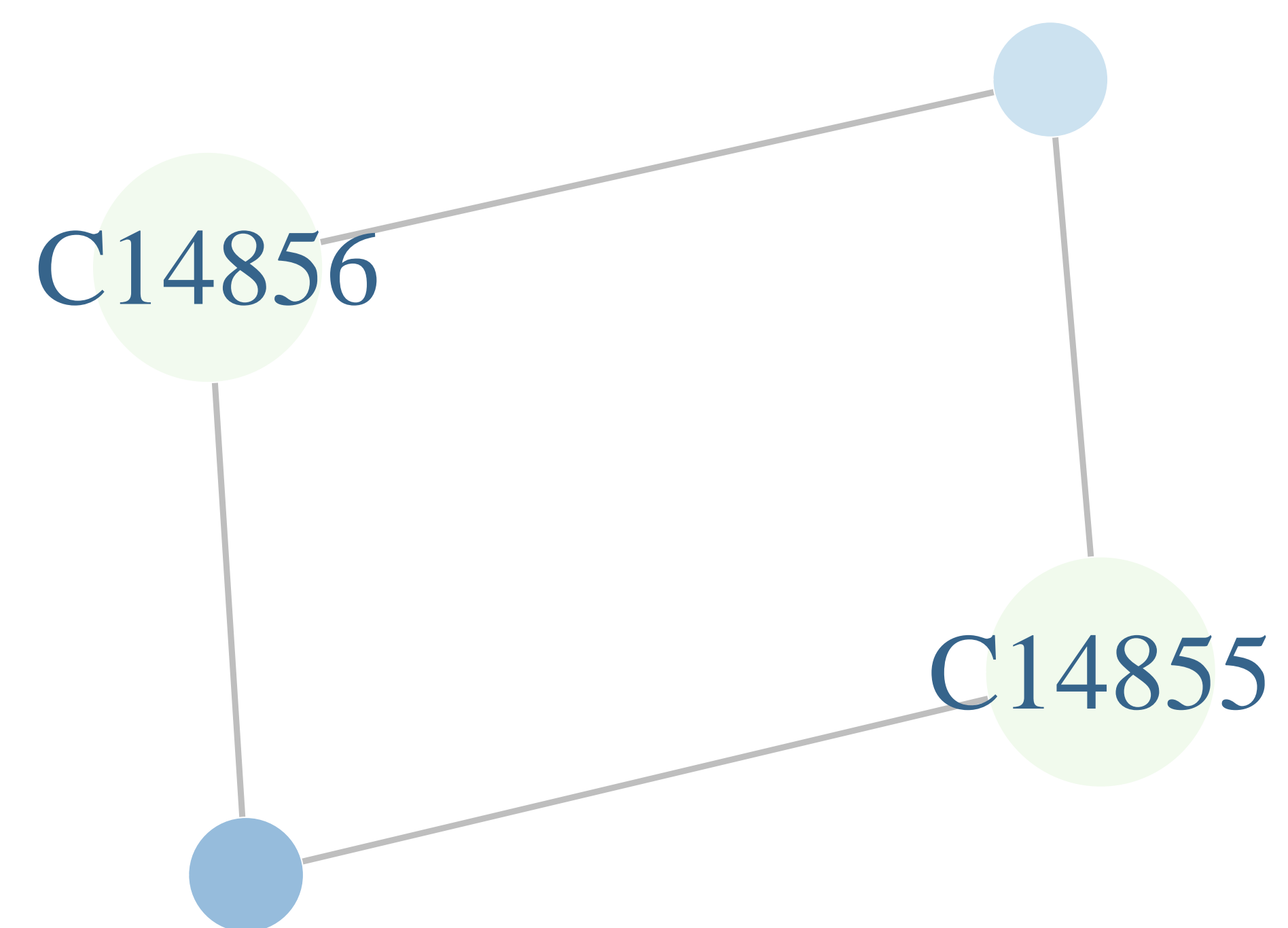
aspartate and asparagine metabolism ; p-value: 0.521



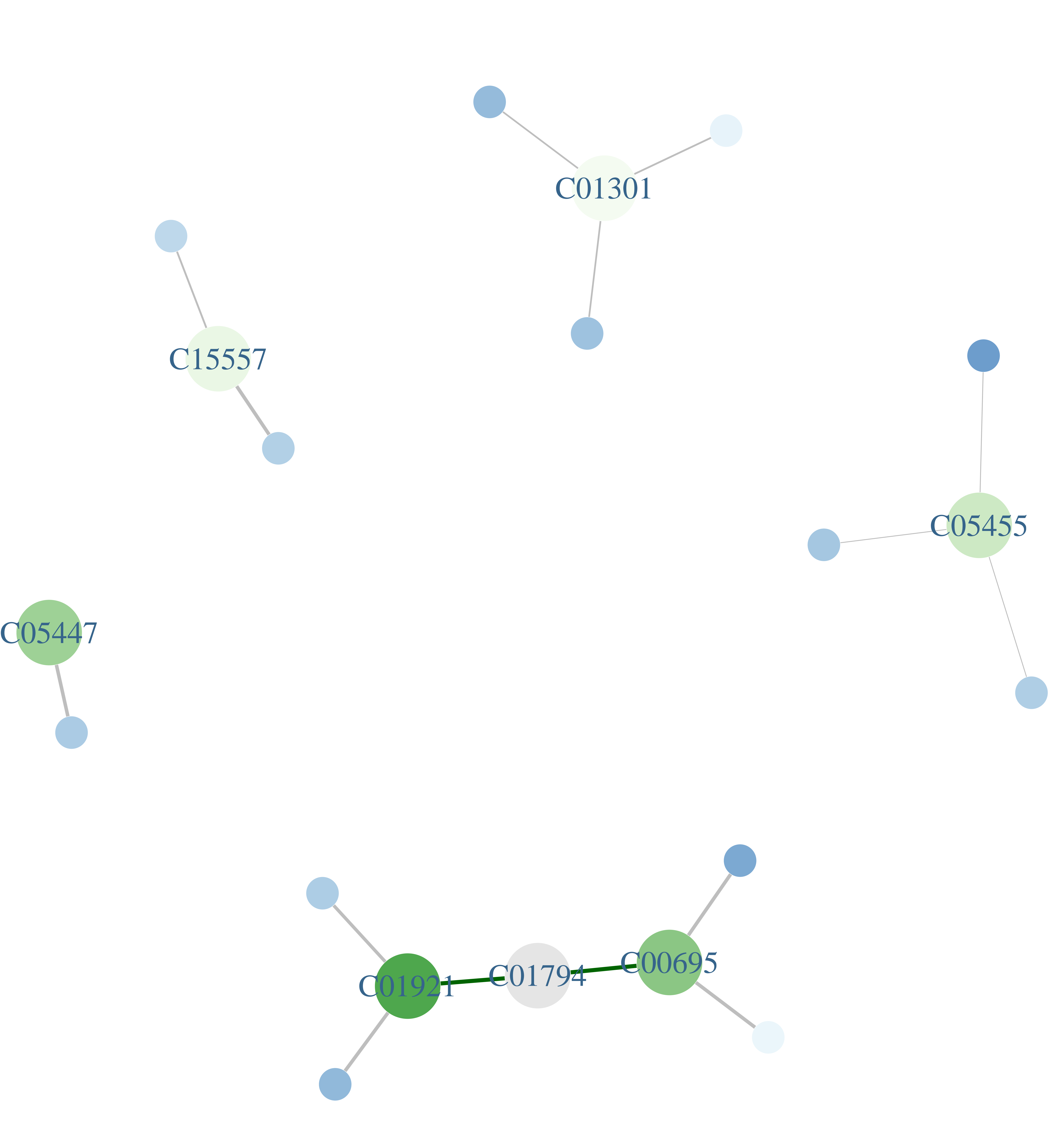
vitamin digestion and absorption ; p-value: 0.147



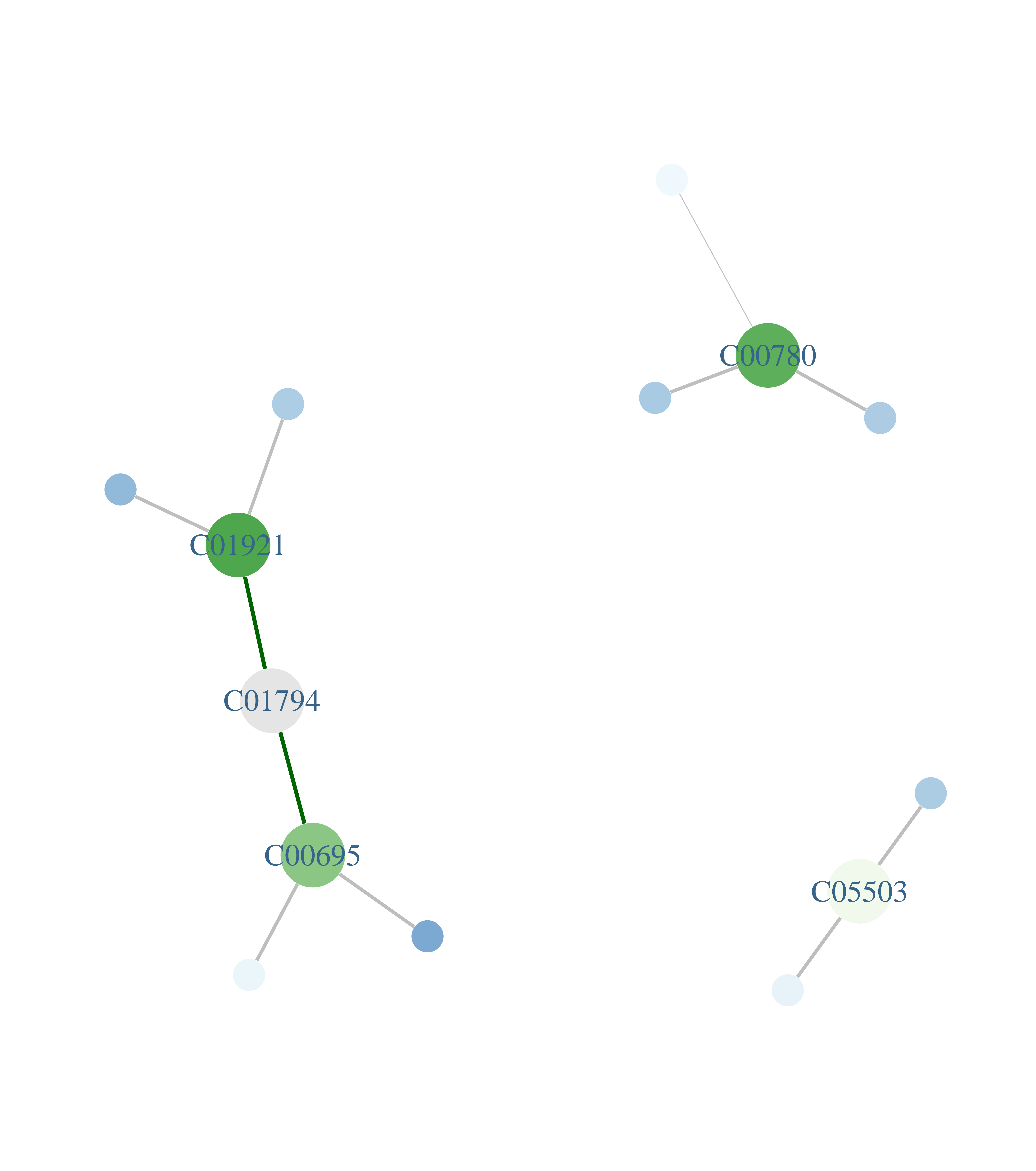
xenobiotics metabolism ; p-value: 0.258



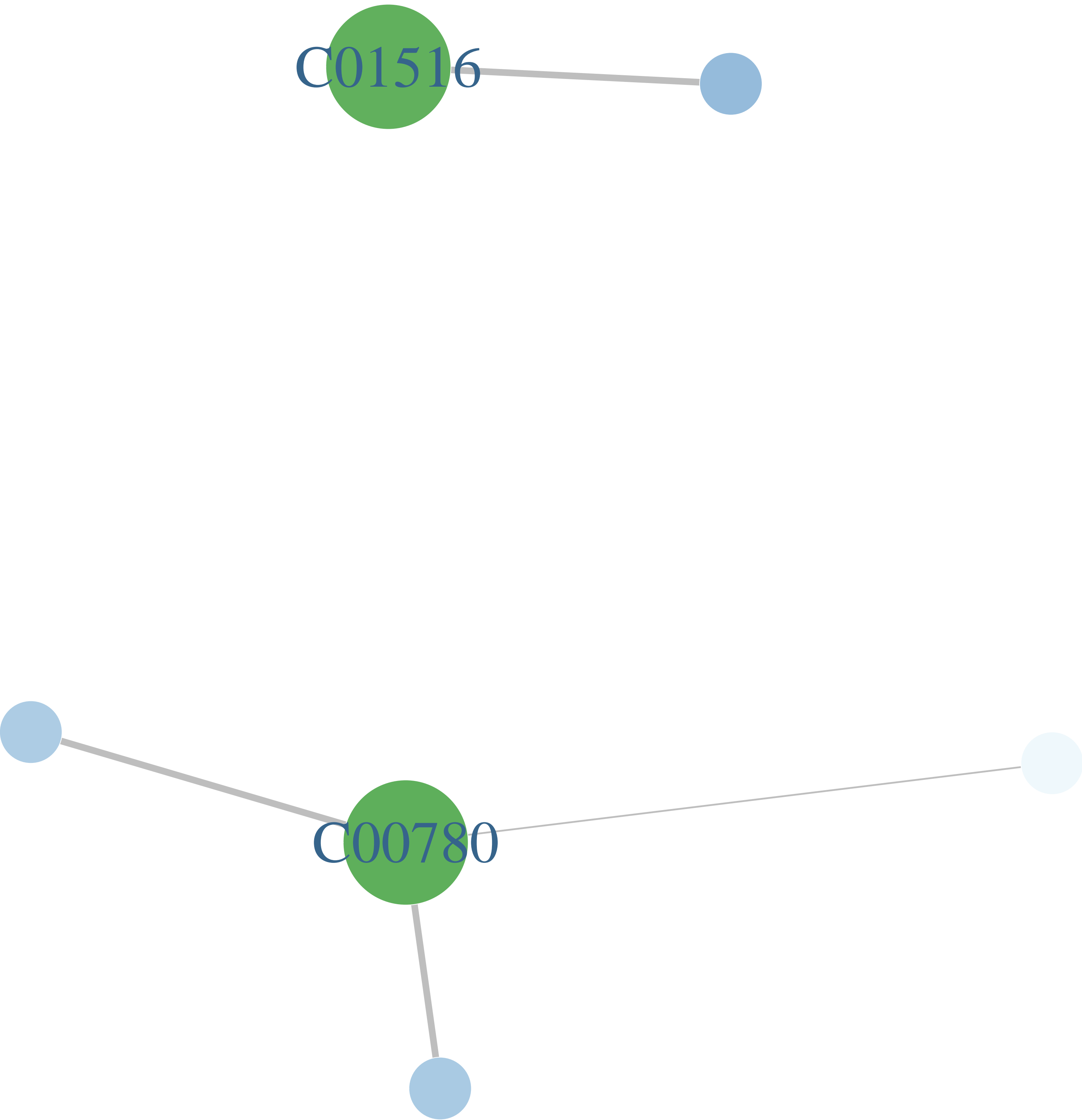
bile acid biosynthesis ; p-value: 0.009



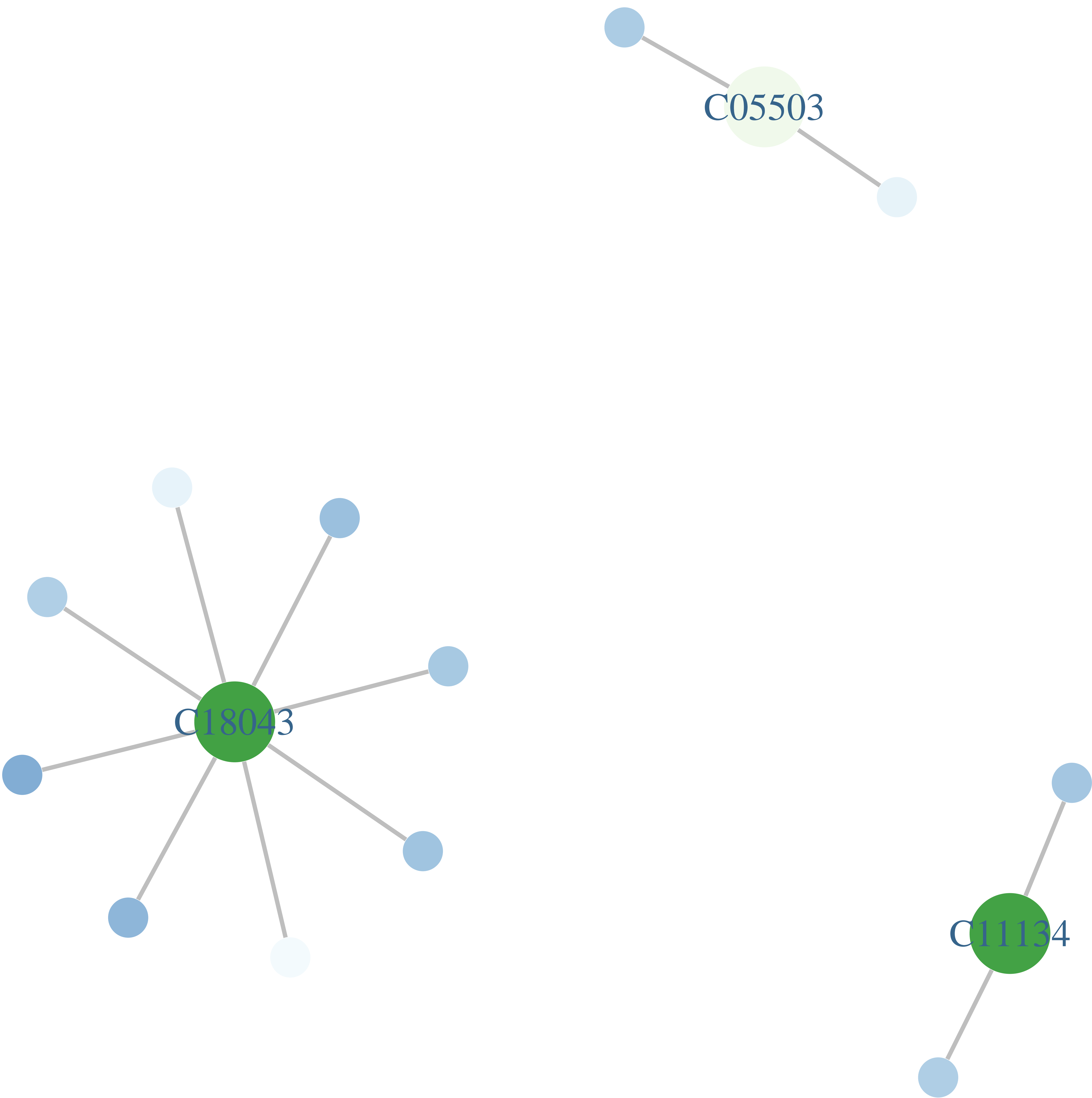
bile secretion ; p-value: 0.053



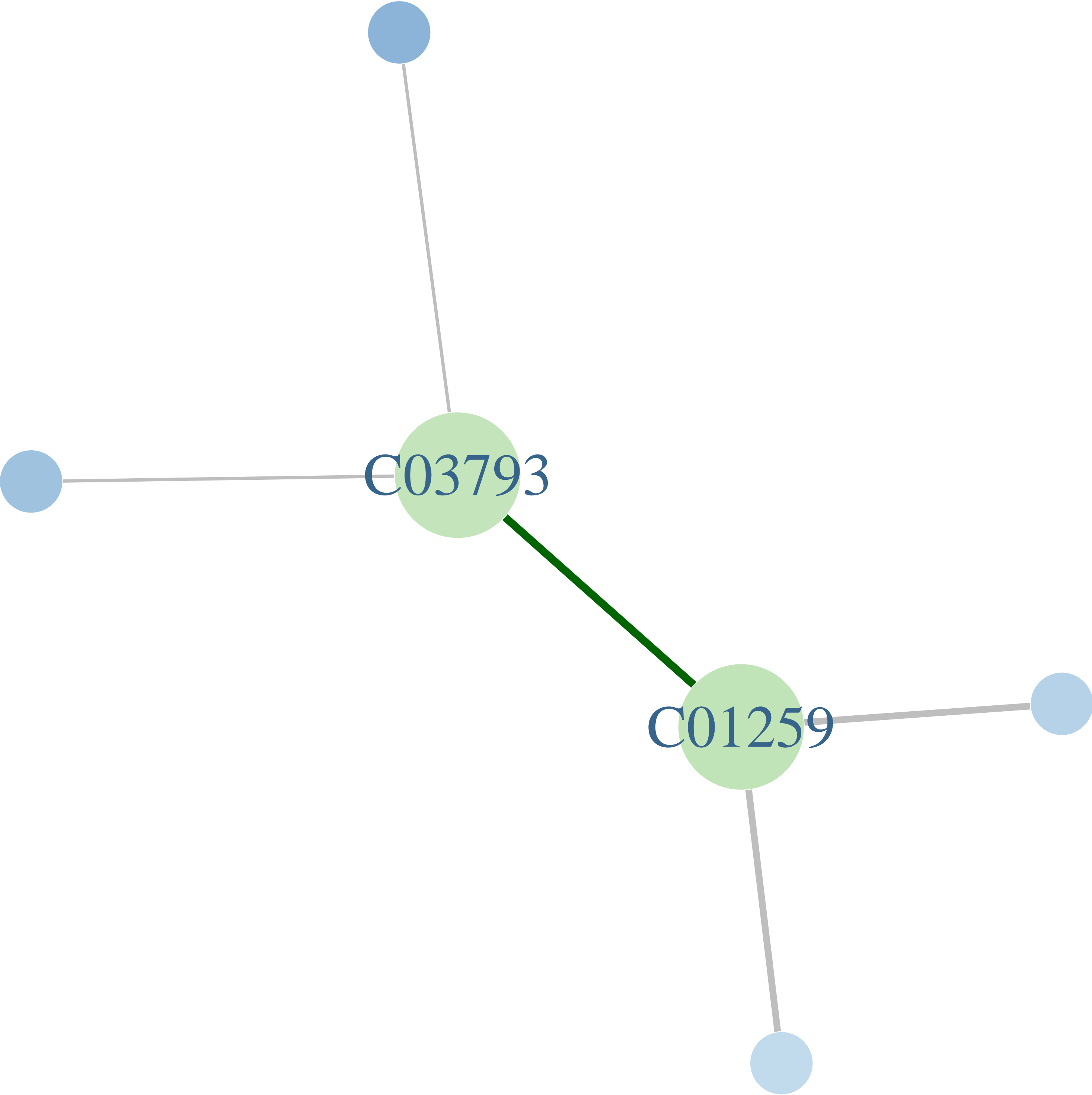
biosynthesis of alkaloids derived from shikimate pathway ; p-value: 0.355



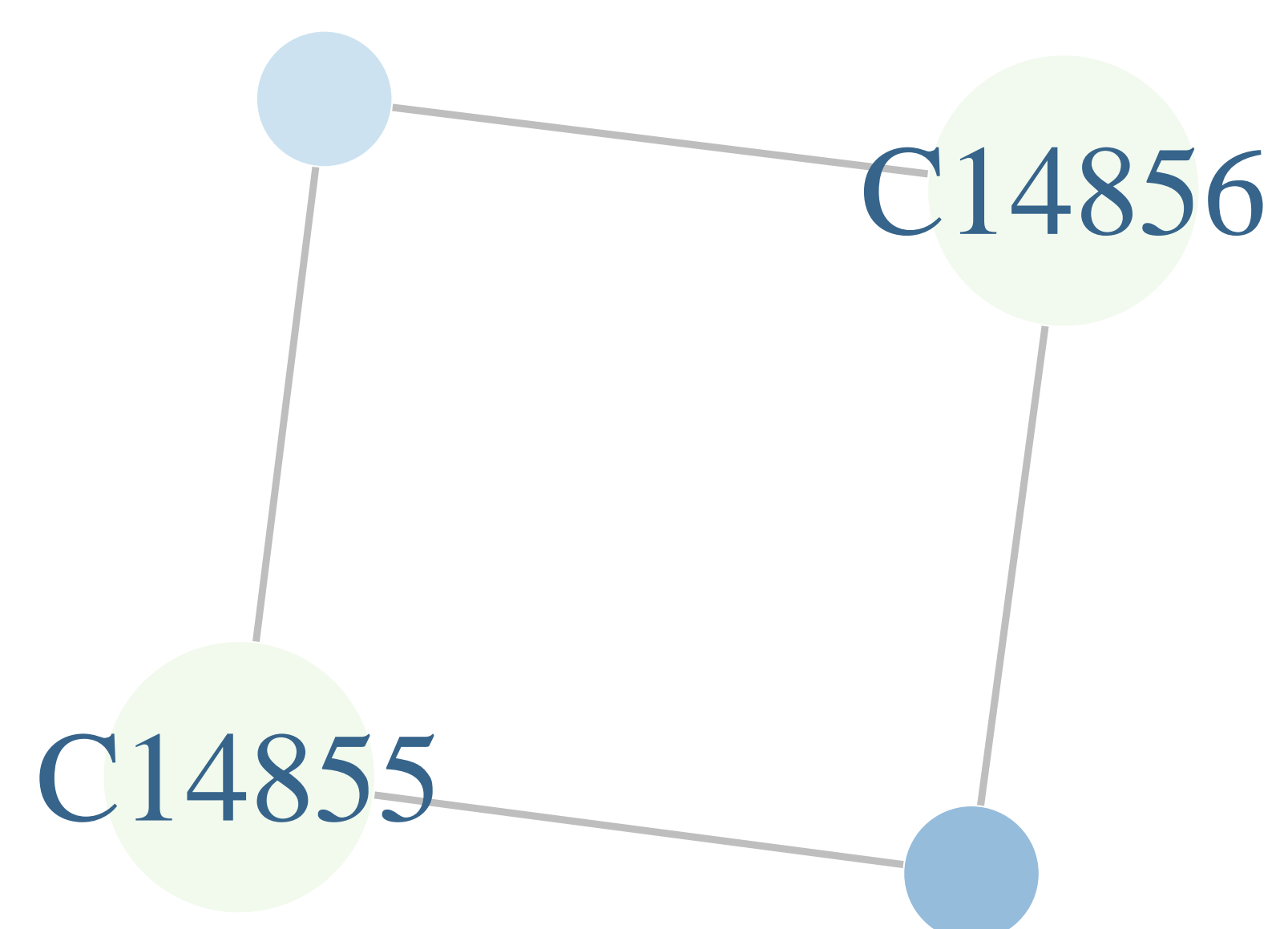
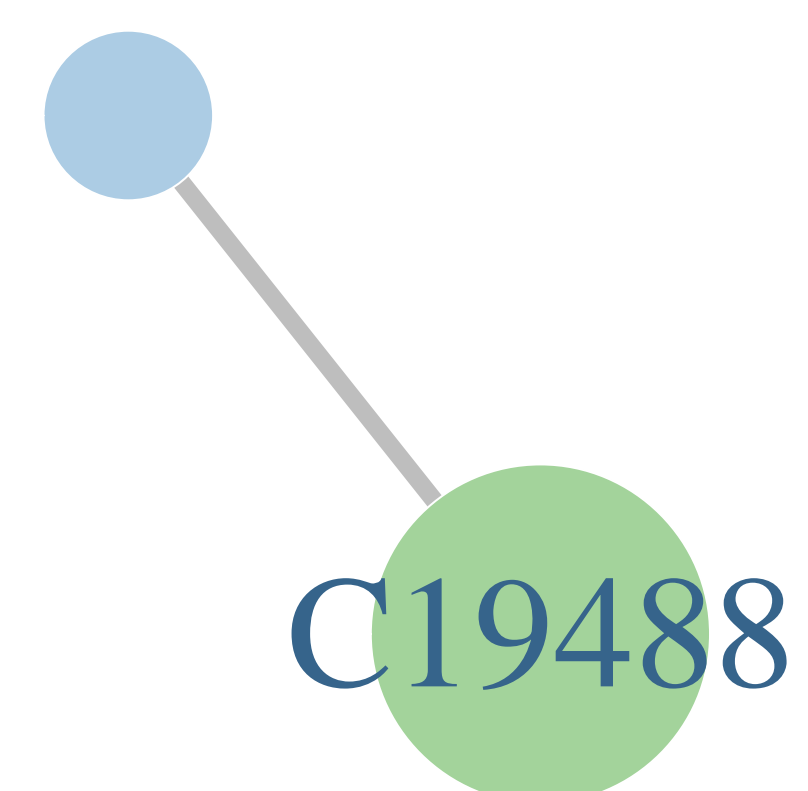
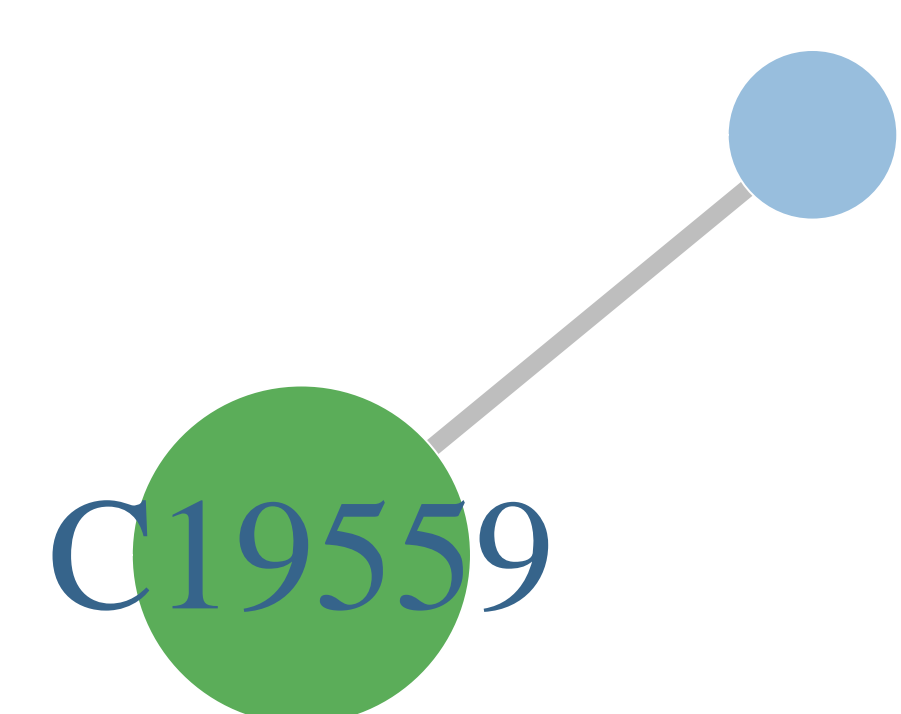
c21-steroid hormone biosynthesis and metabolism ; p-value: 0.446



carnitine synthesis ; p-value: 0.038

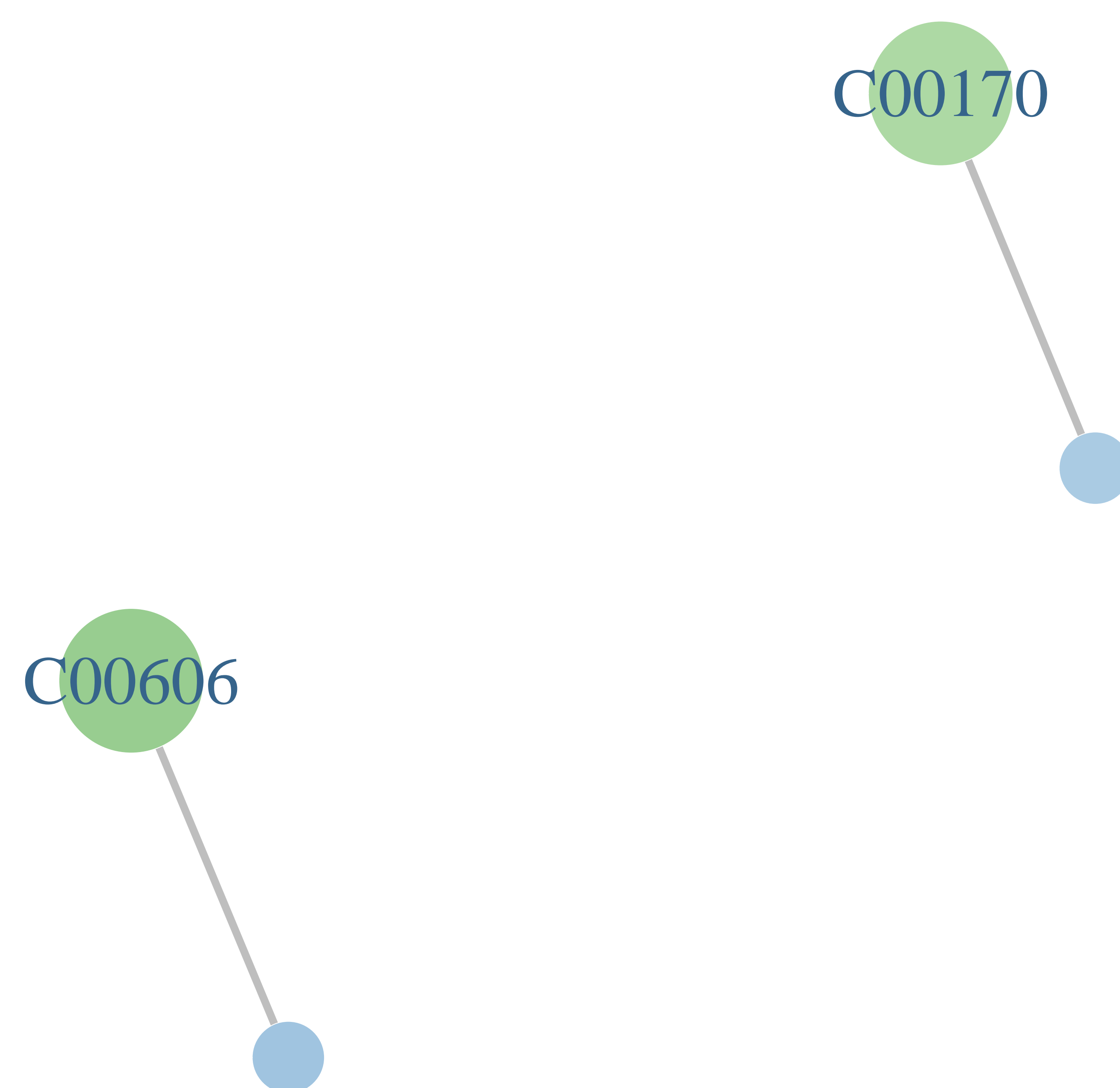


chemical carcinogenesis ; p-value: 0.03

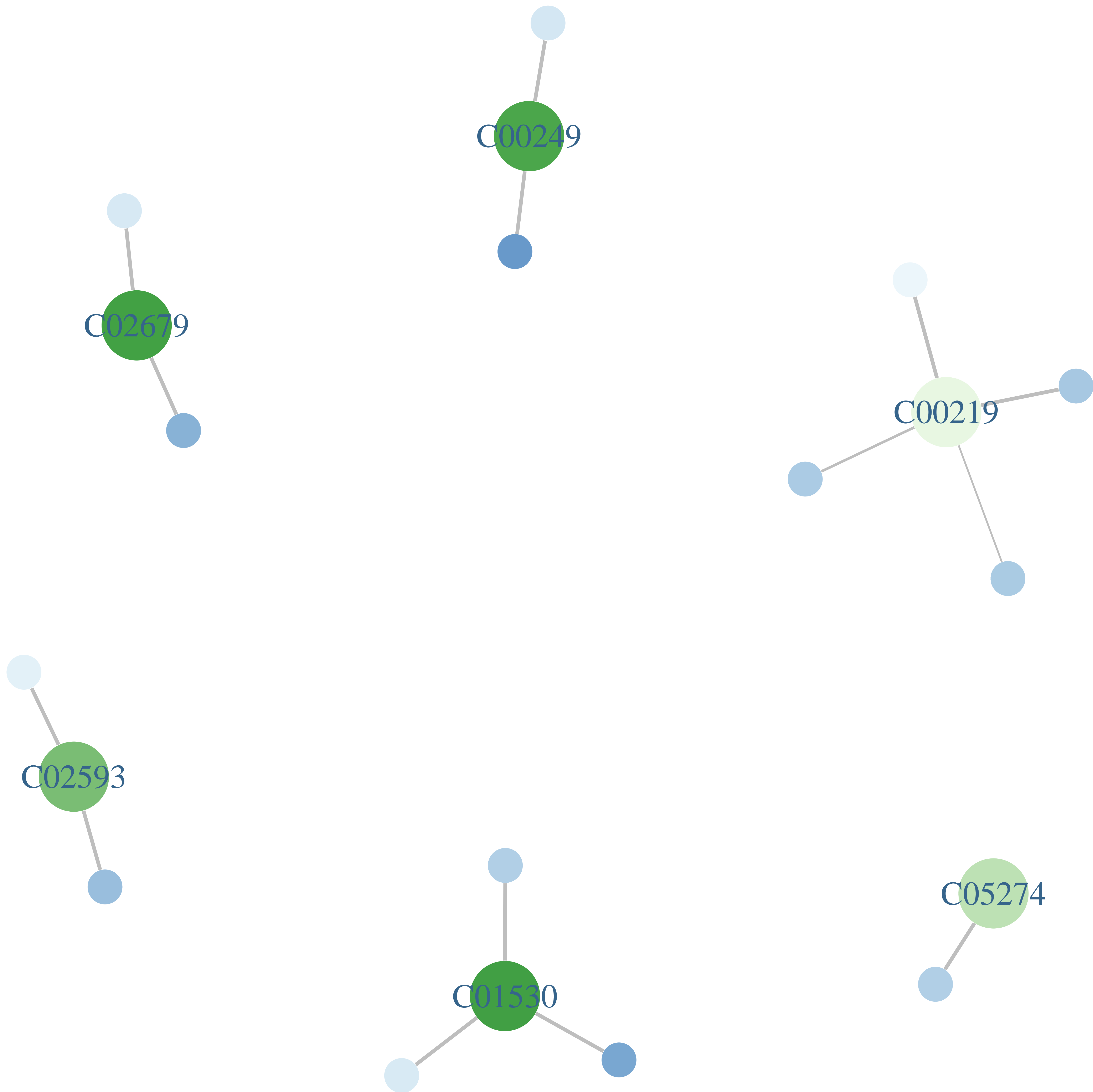


Mouse Brain Metabolomics Data
Thalamus Week 3 v.s. Week 16
Pathway Plots

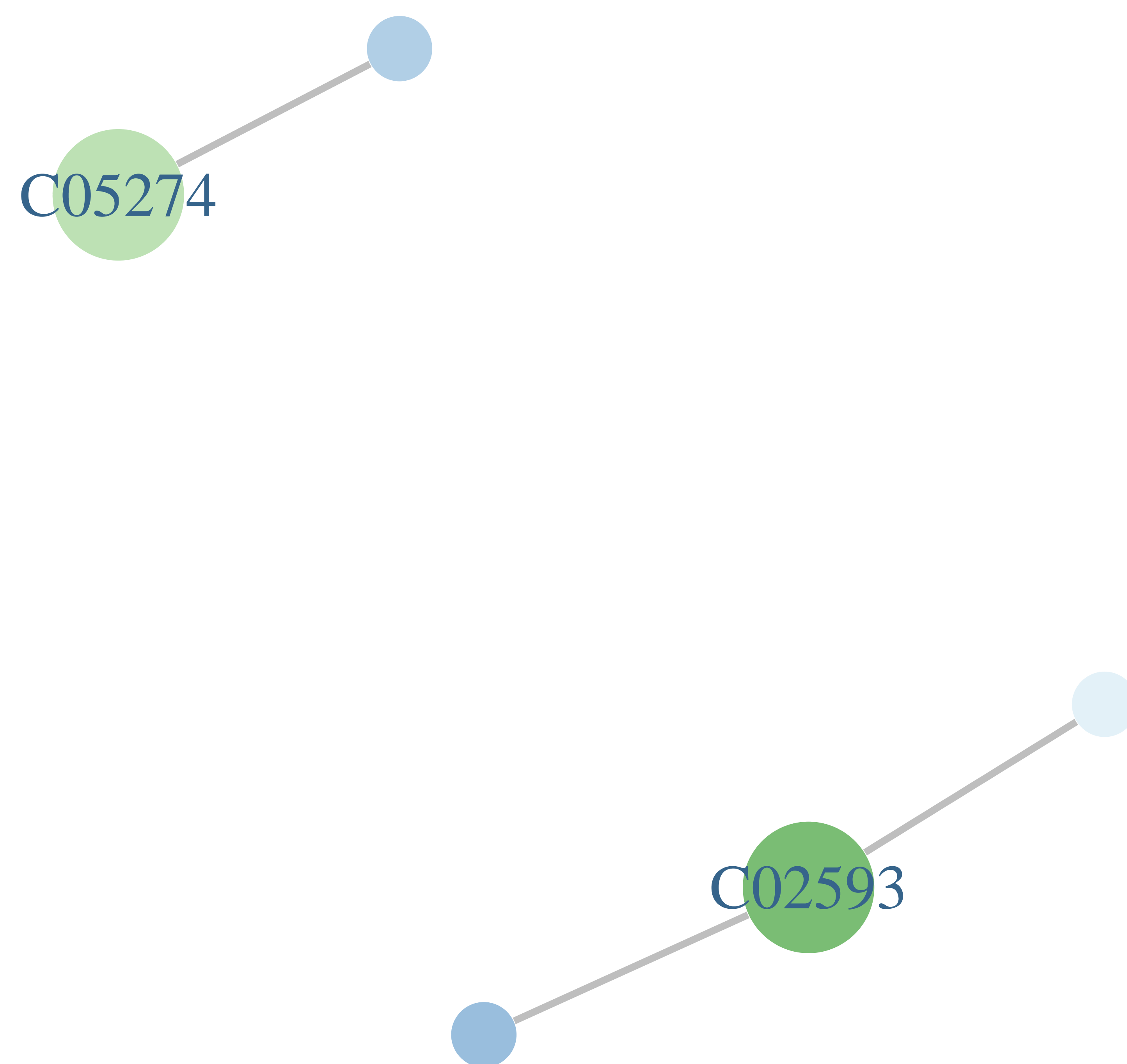
cysteine and methionine metabolism ; p-value: 0.364



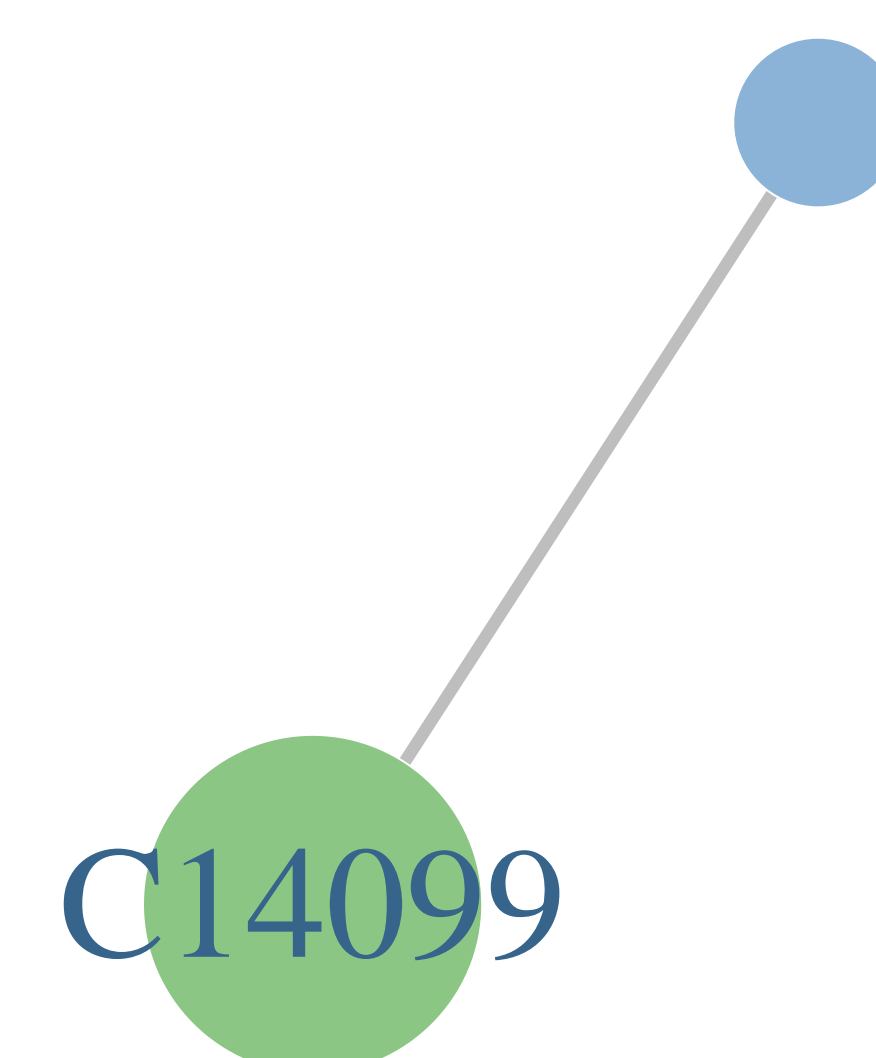
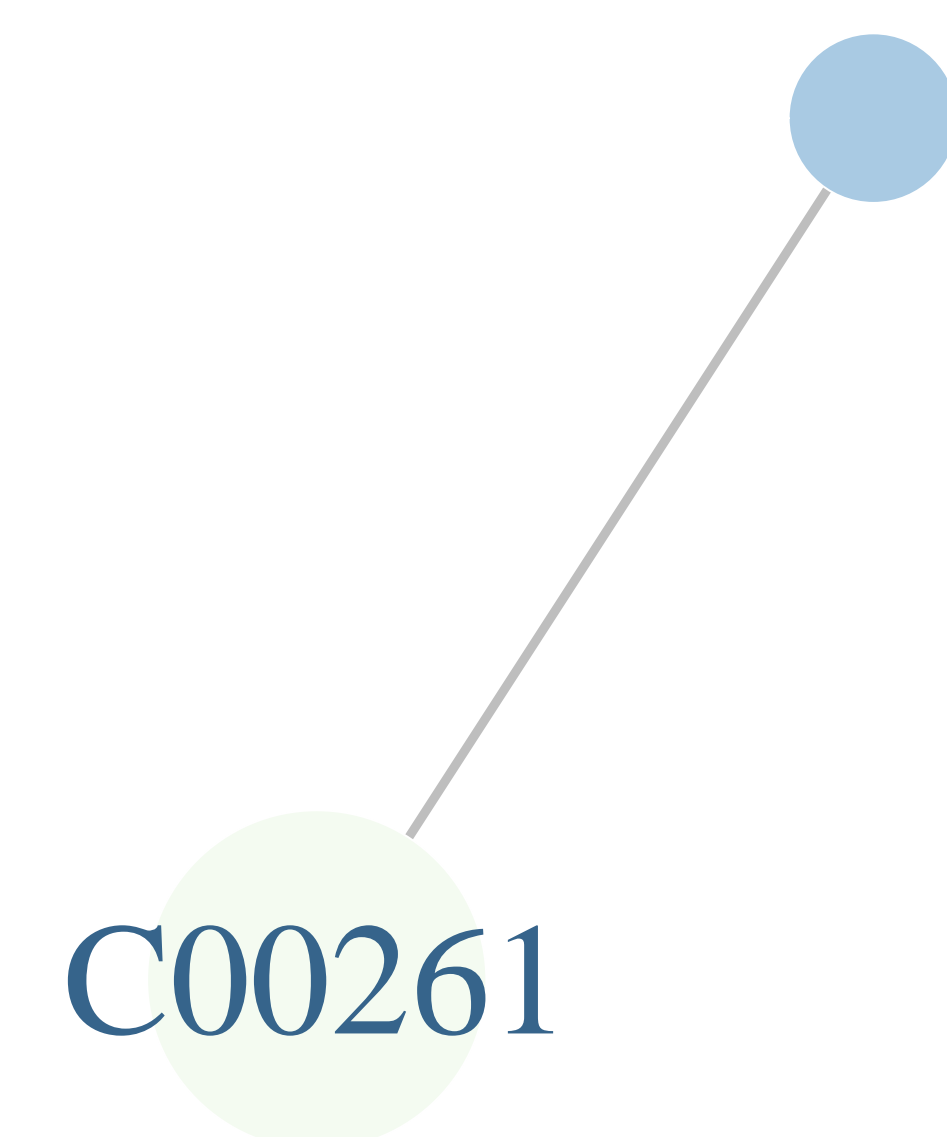
de novo fatty acid biosynthesis ; p-value: 0.002



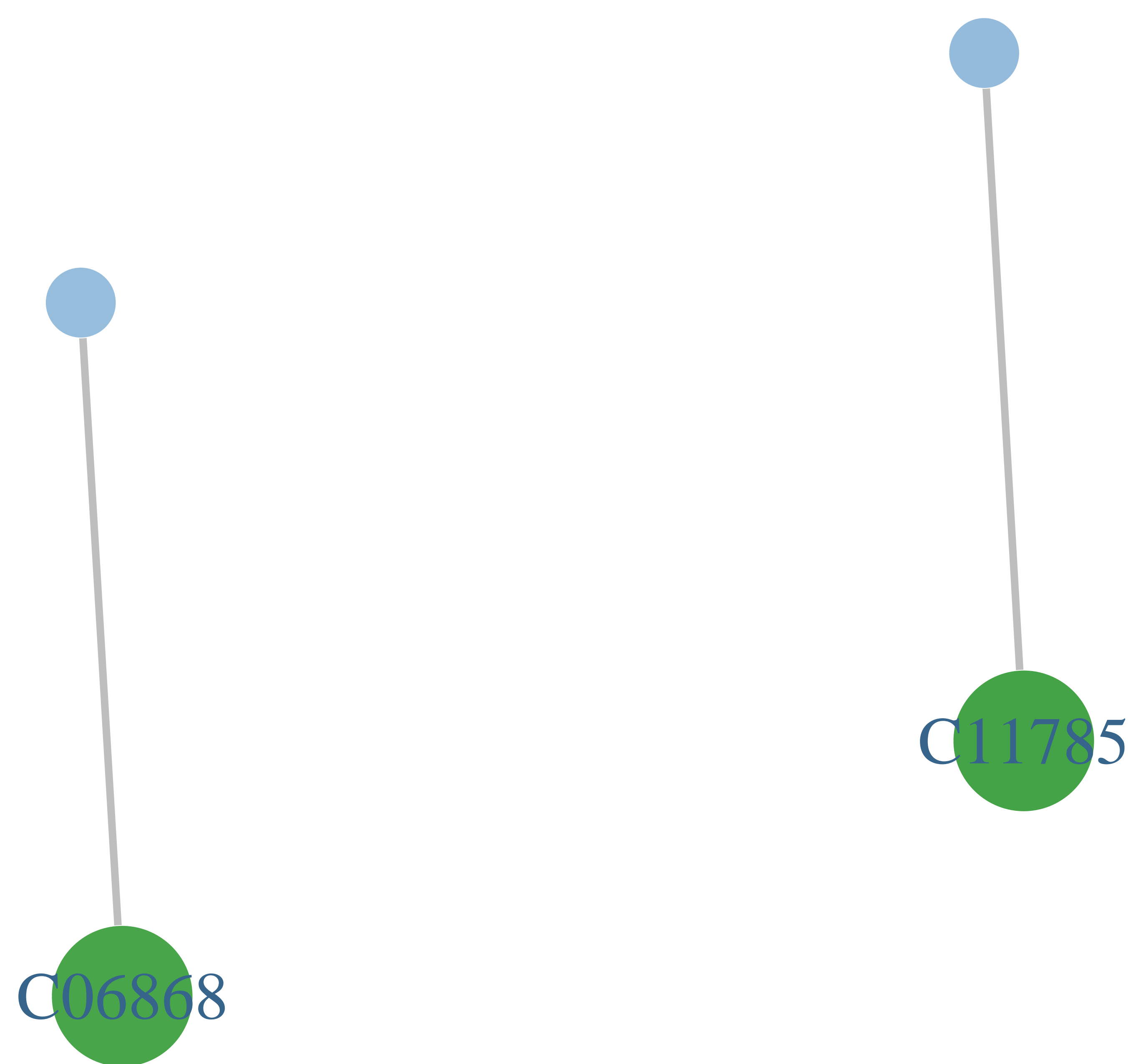
de novo triacylglycerol biosynthesis tg ; p-value: 0.26



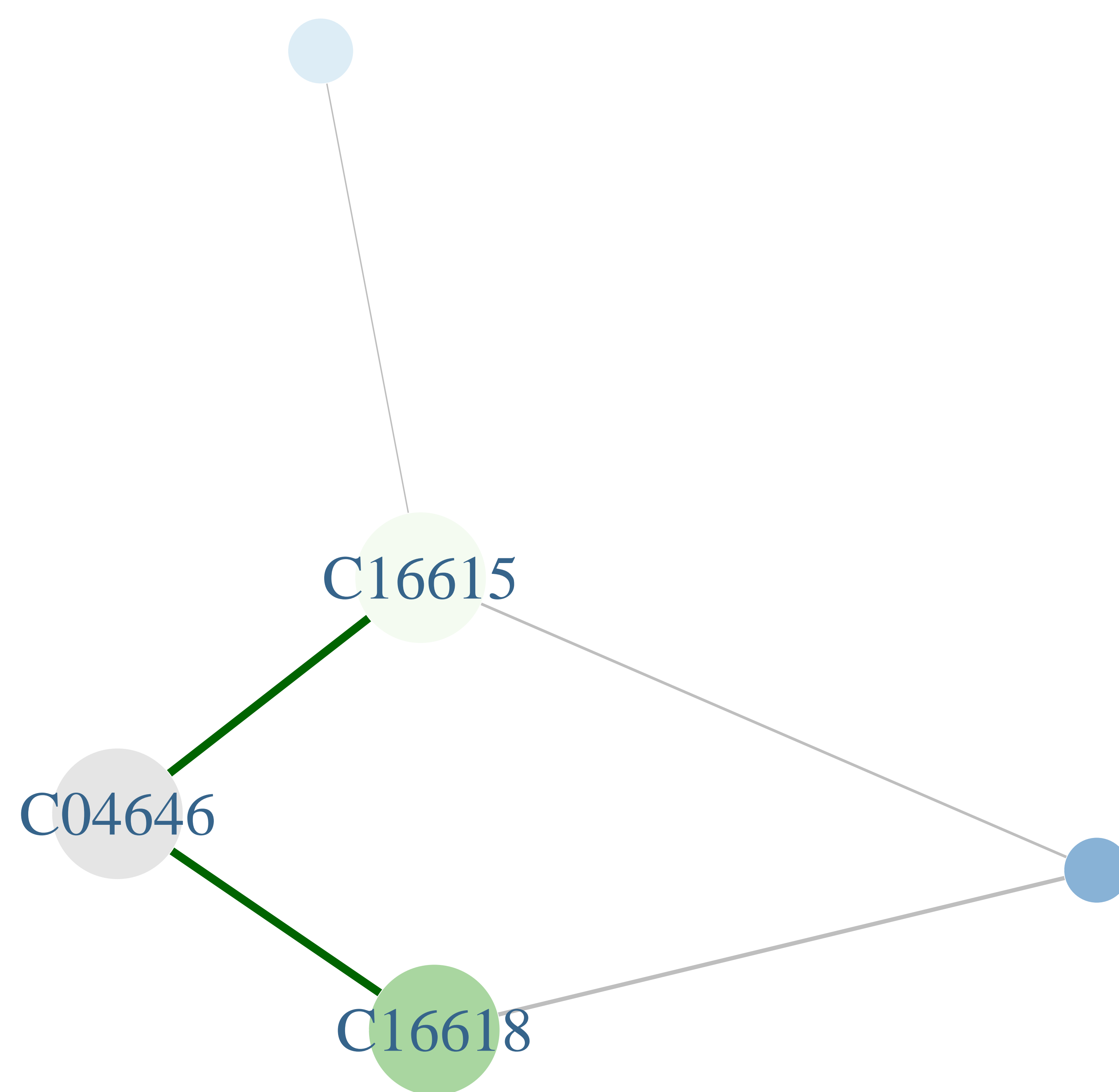
degradation of aromatic compounds ; p-value: 0.443



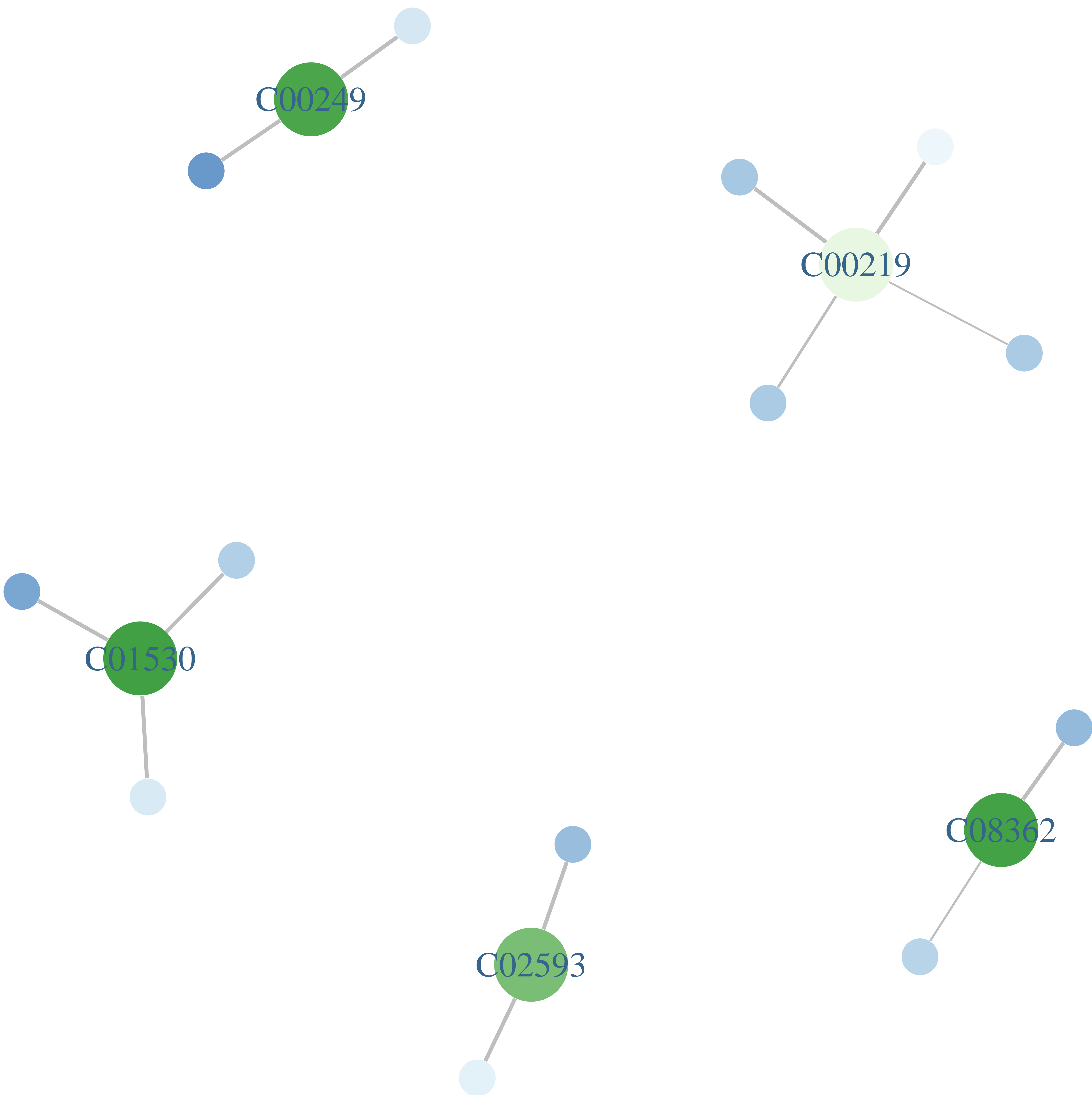
drug metabolism – cytochrome p450 ; p-value: 0.424



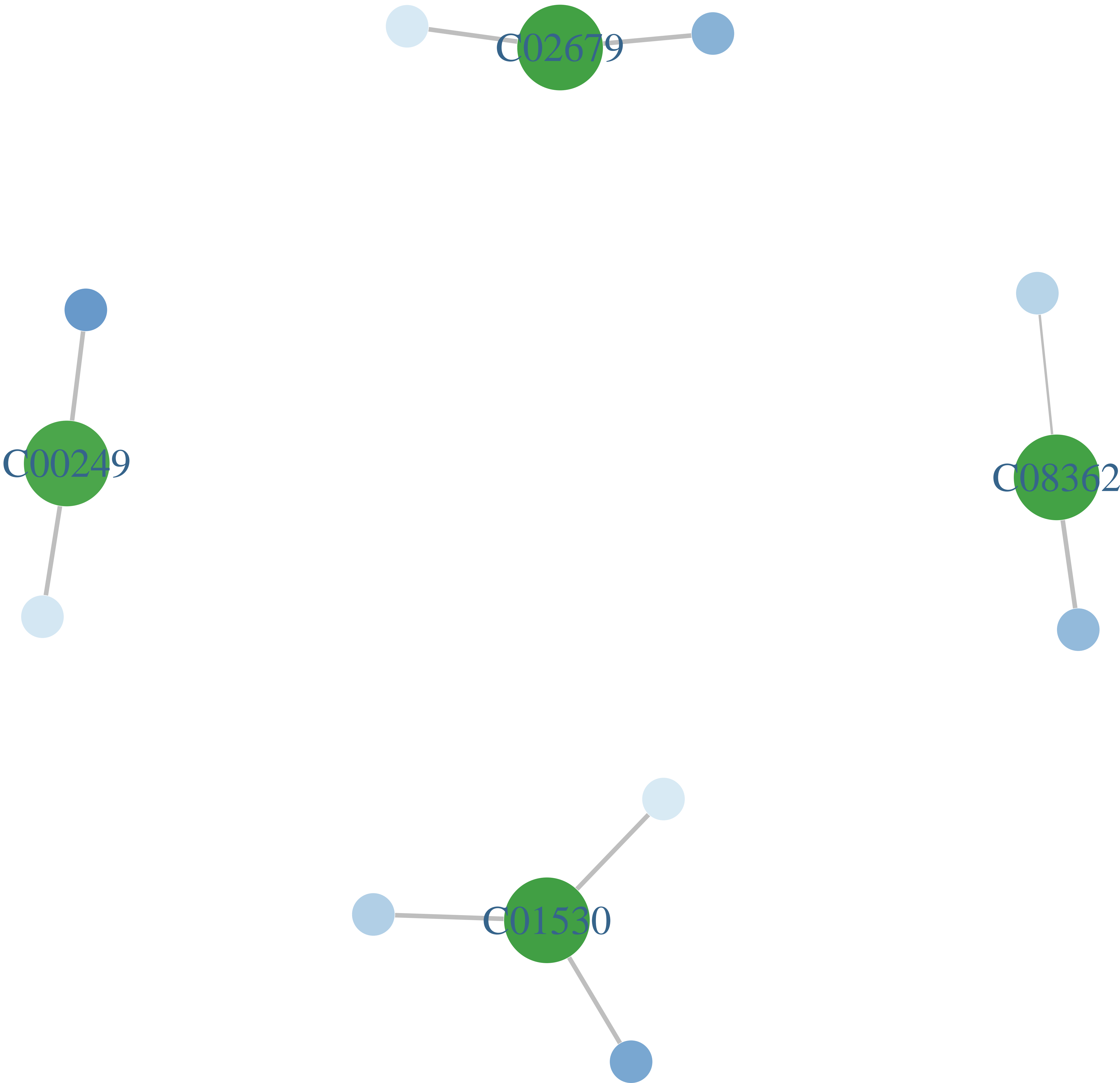
drug metabolism – other enzymes ; p-value: 0.424



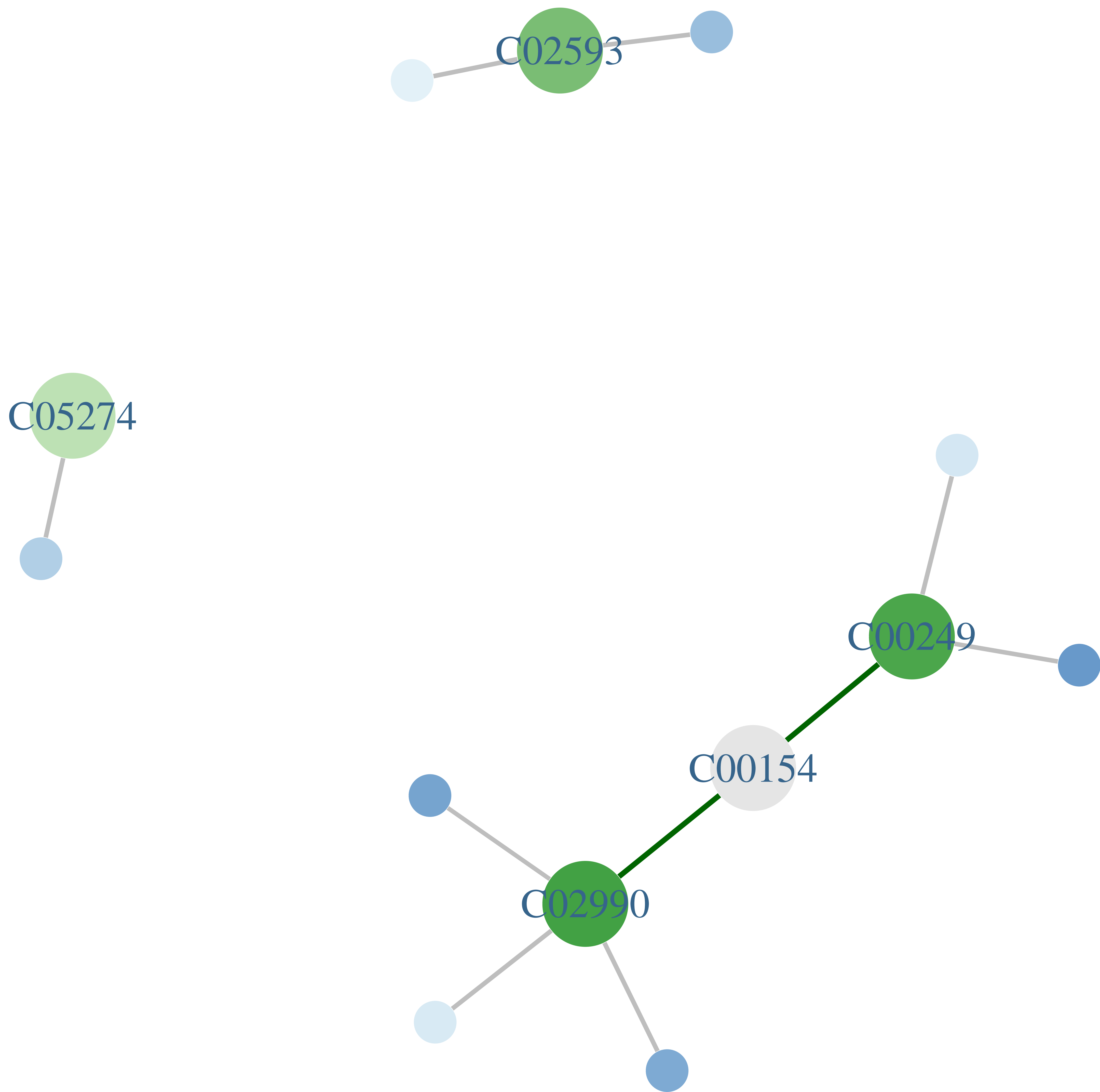
fatty acid activation ; p-value: 0.01



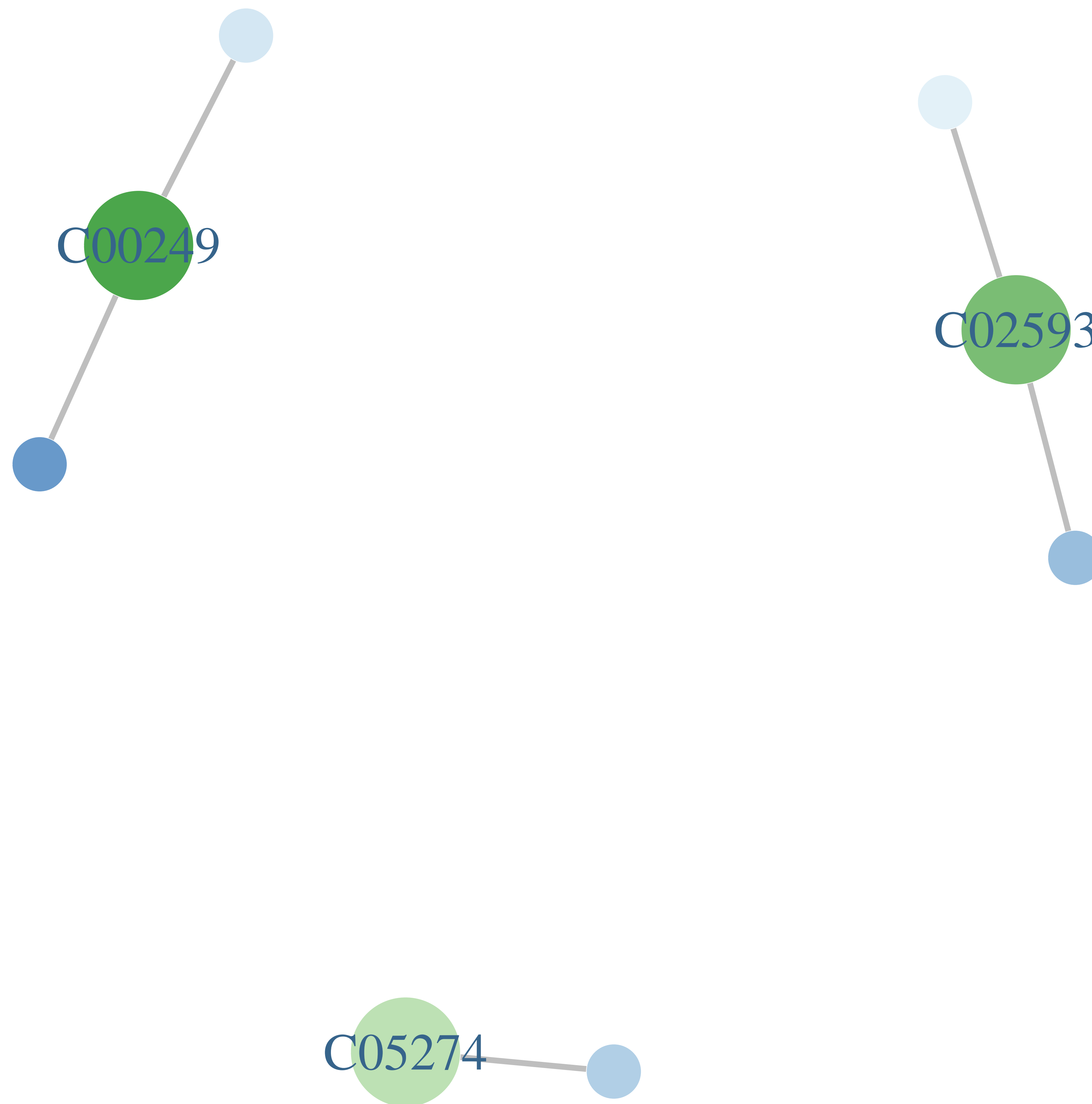
fatty acid biosynthesis ; p-value: 0.001



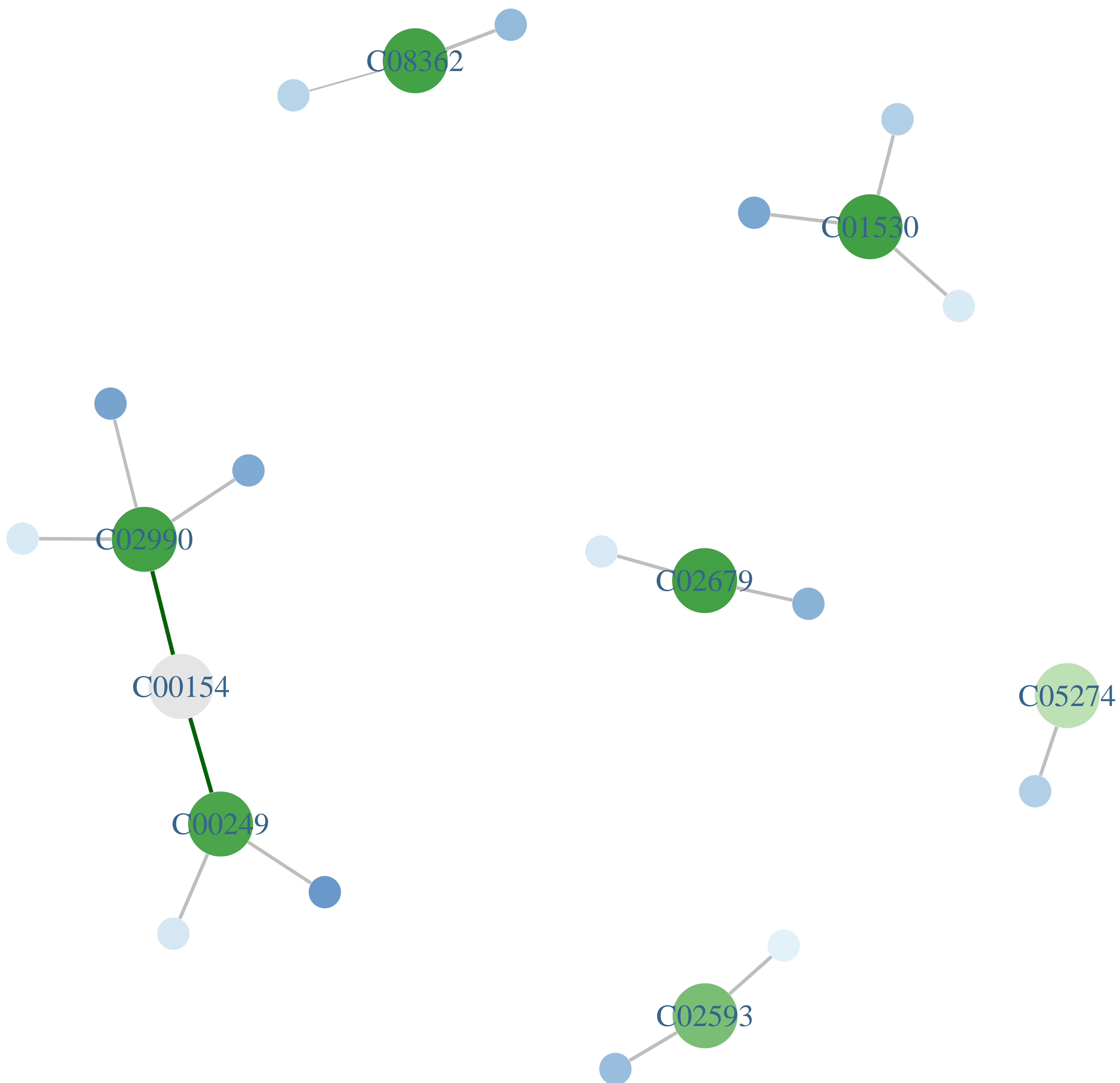
fatty acid degradation ; p-value: 0.104



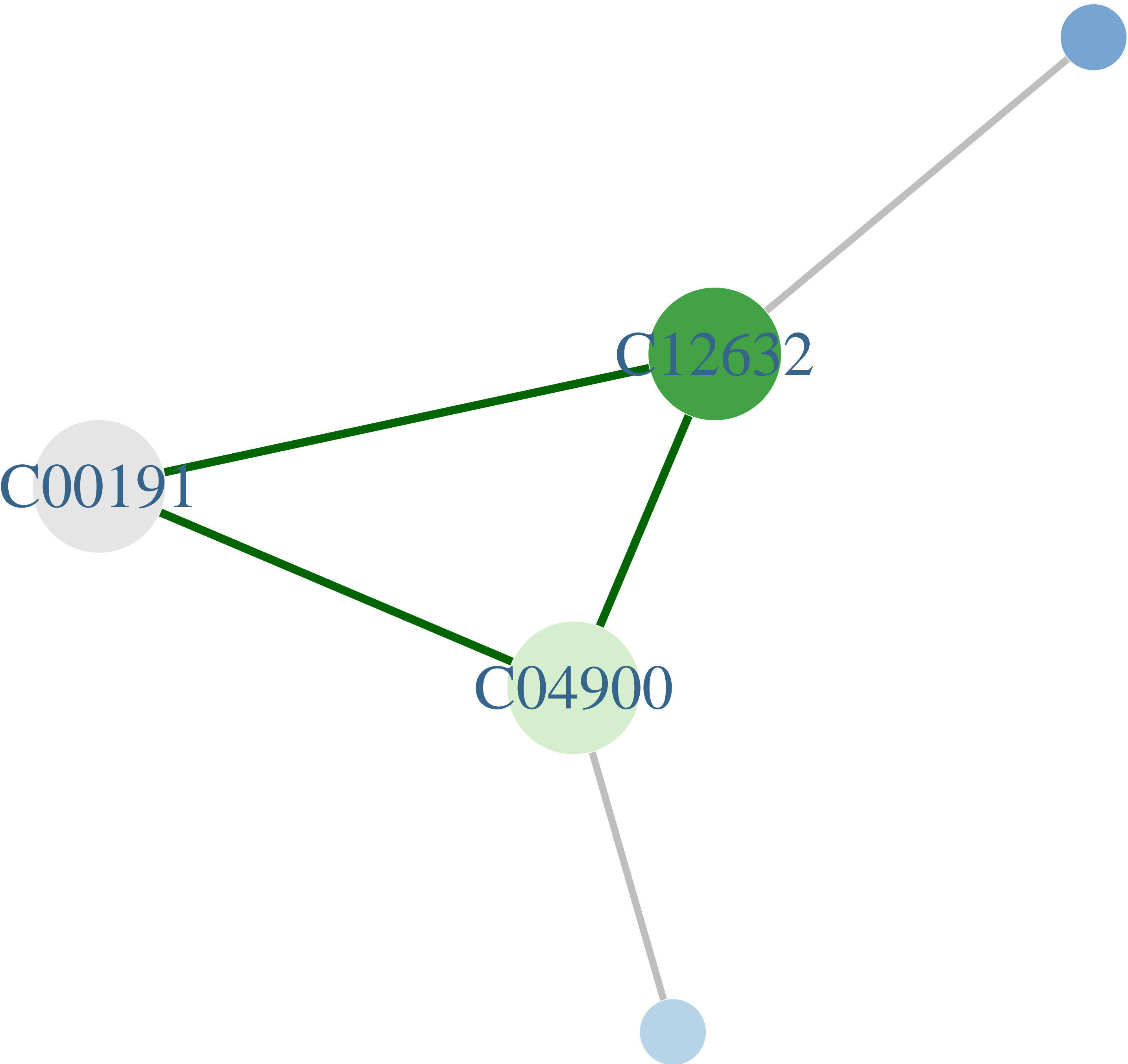
fatty acid elongation in mitochondria ; p-value: 0.169



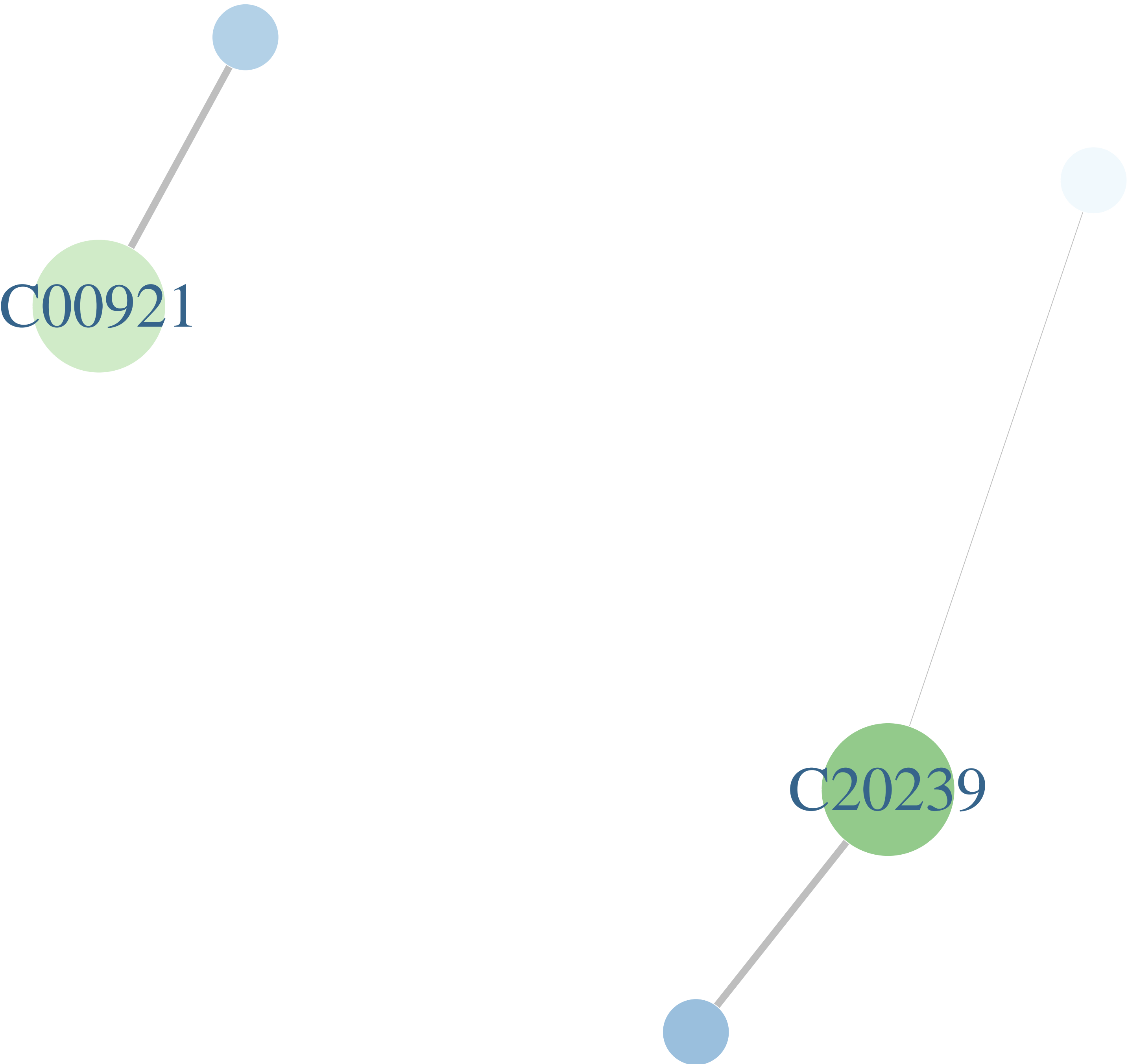
fatty acid metabolism ; p-value: 0.031



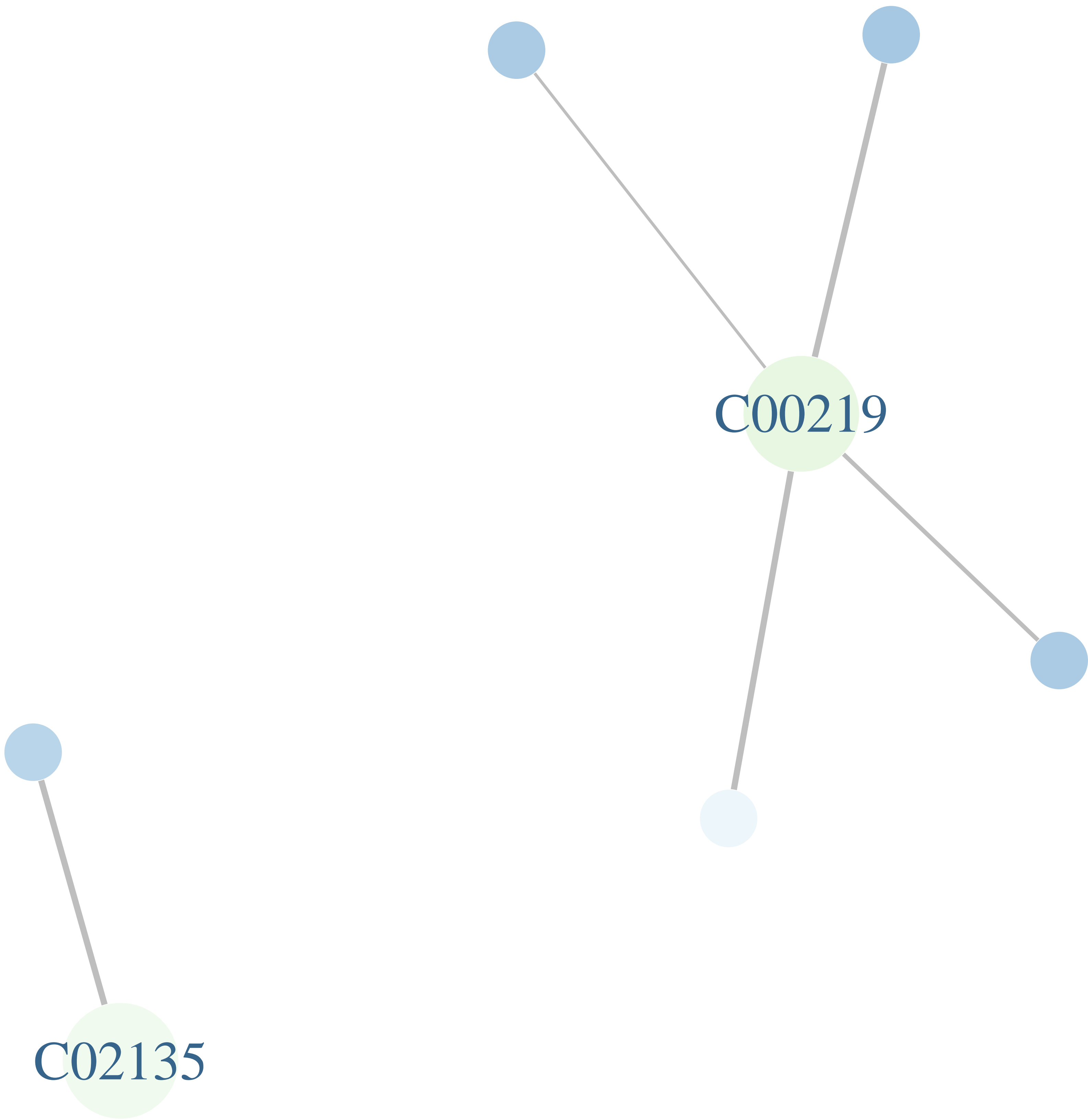
flavone and flavonol biosynthesis ; p-value: 0.009



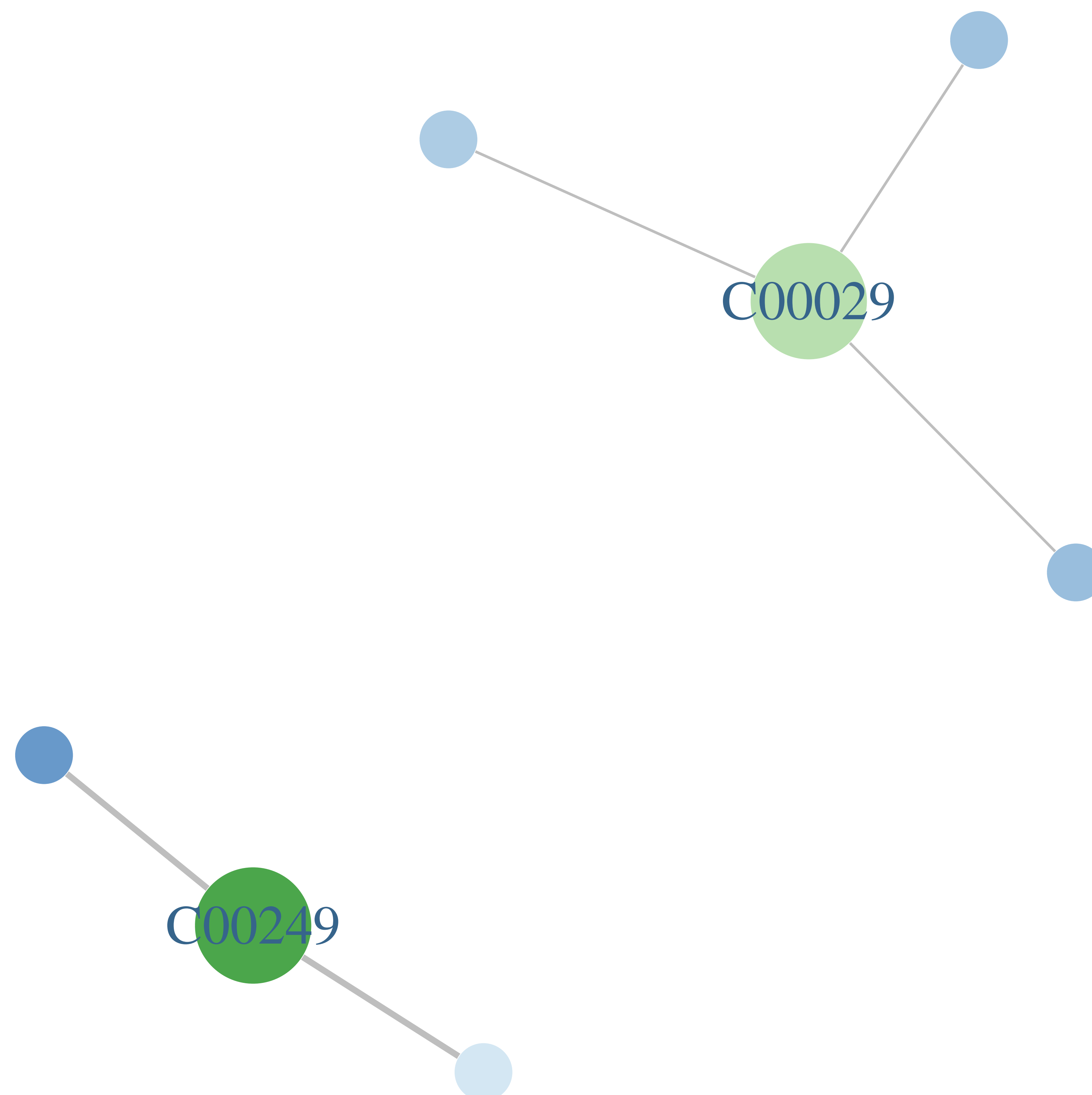
folate biosynthesis ; p-value: 0.239



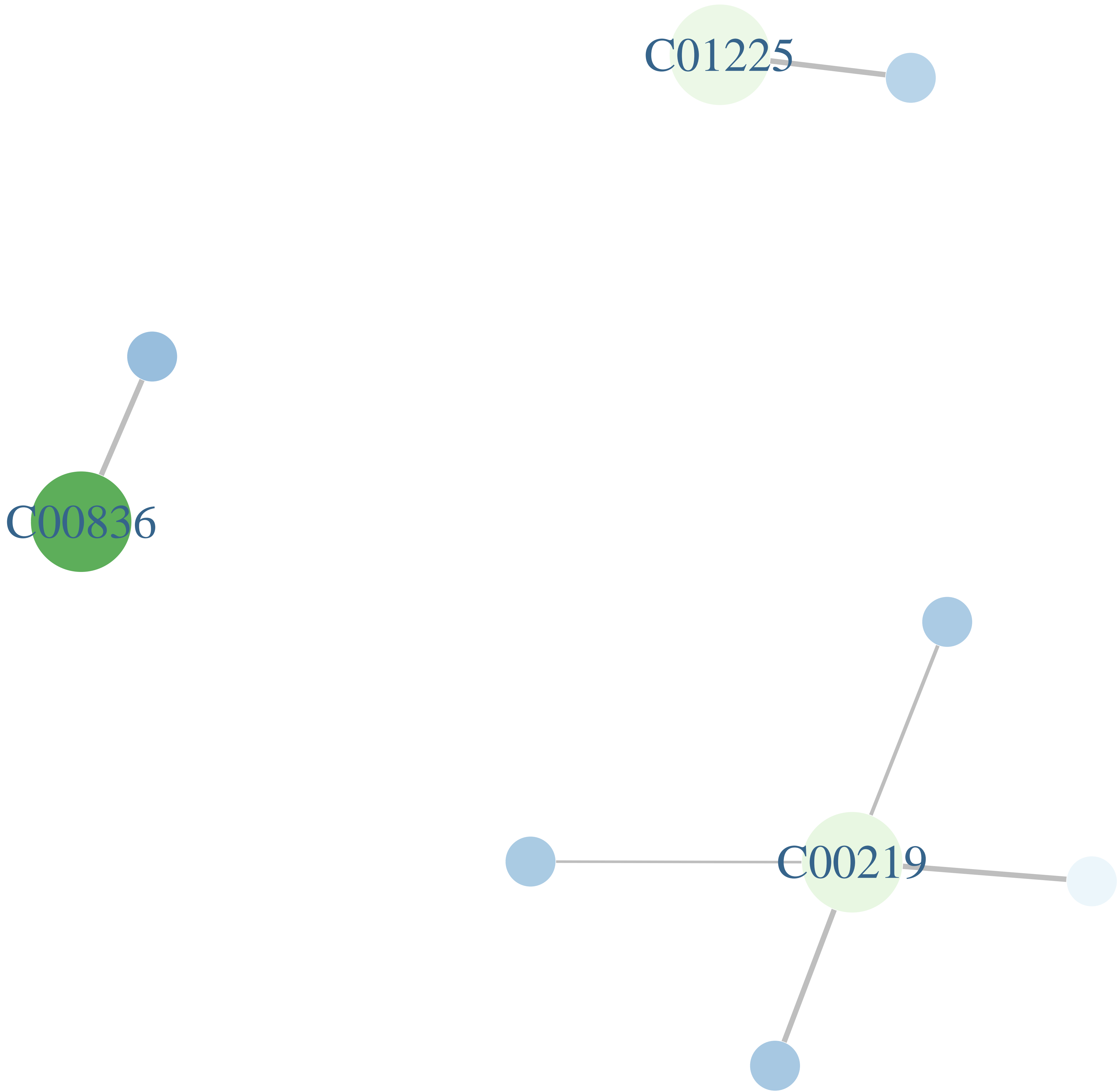
aldosterone synthesis and secretion ; p-value: 0.138



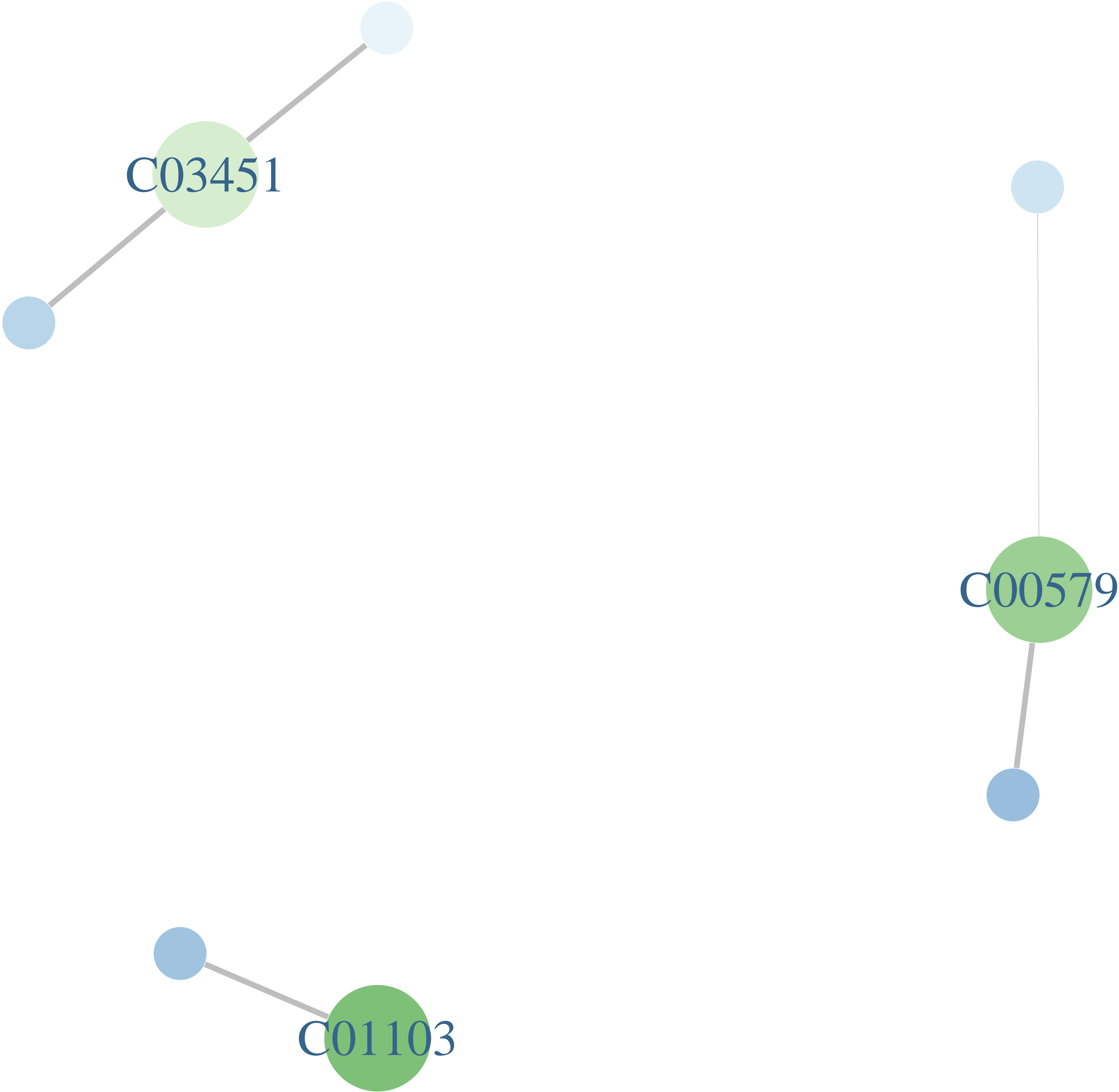
glycerolipid metabolism ; p-value: 0.178



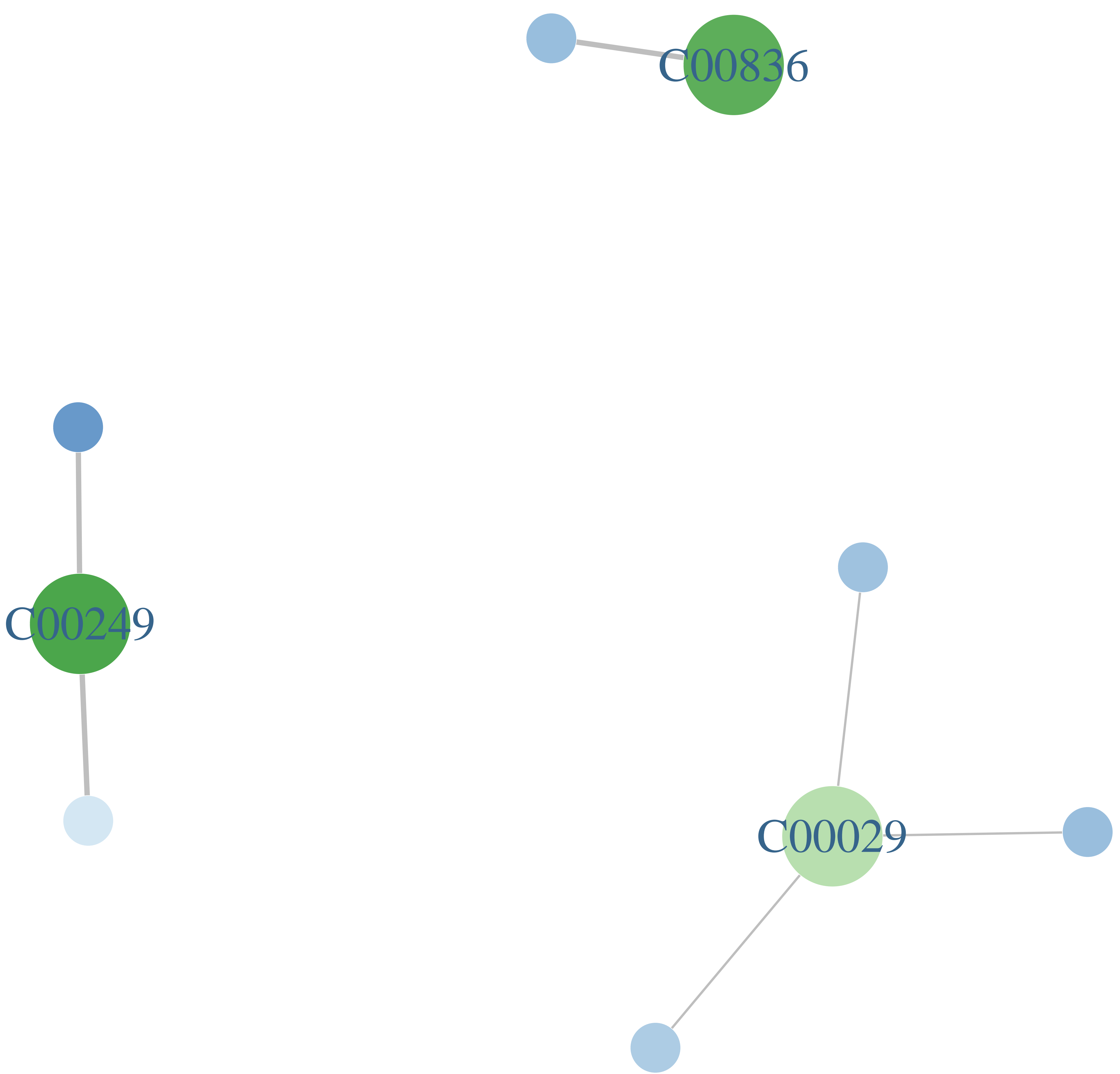
glycerophospholipid metabolism ; p-value: 0.553



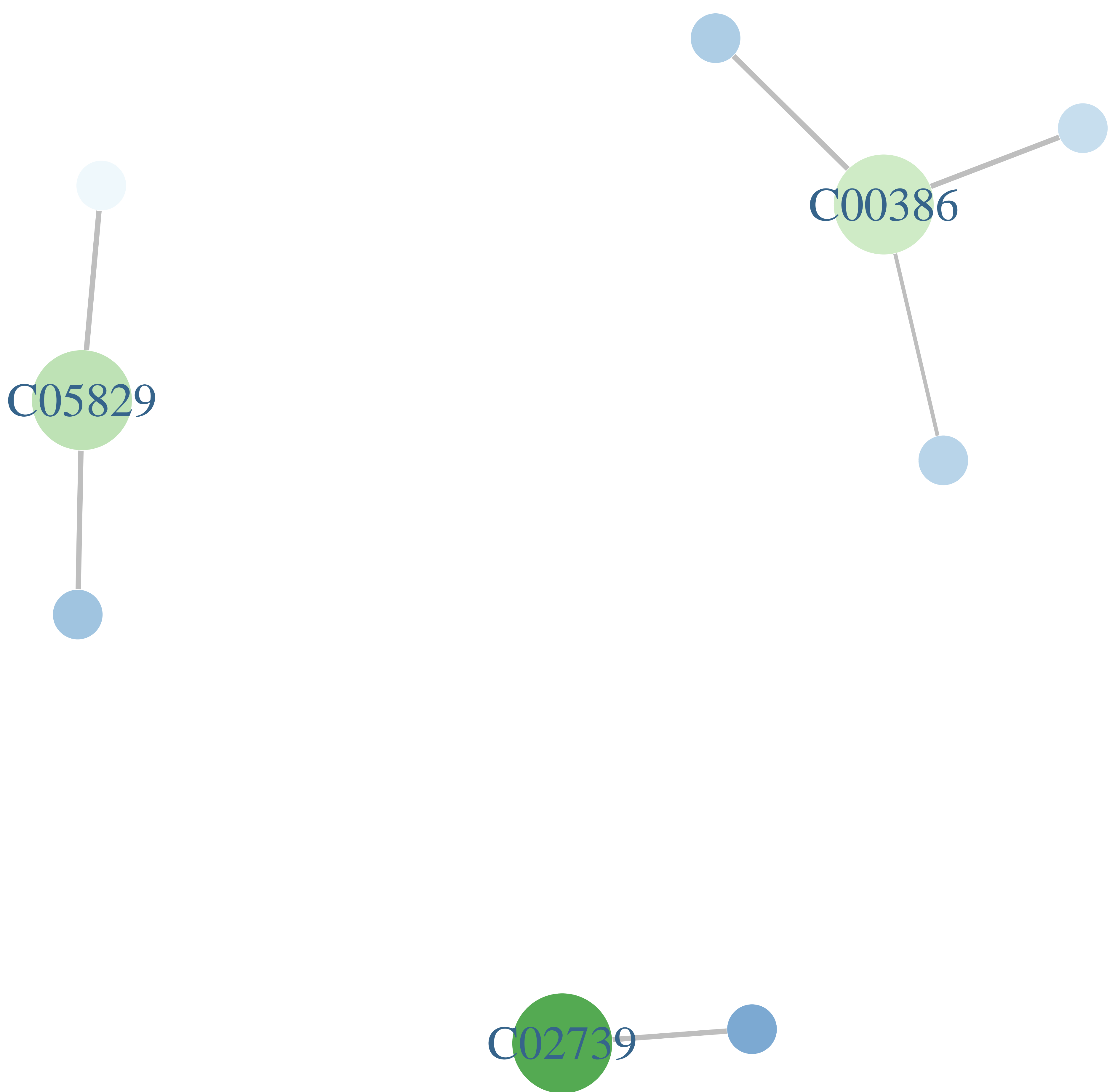
glycine, serine, alanine and threonine metabolism ; p-value: 0.364



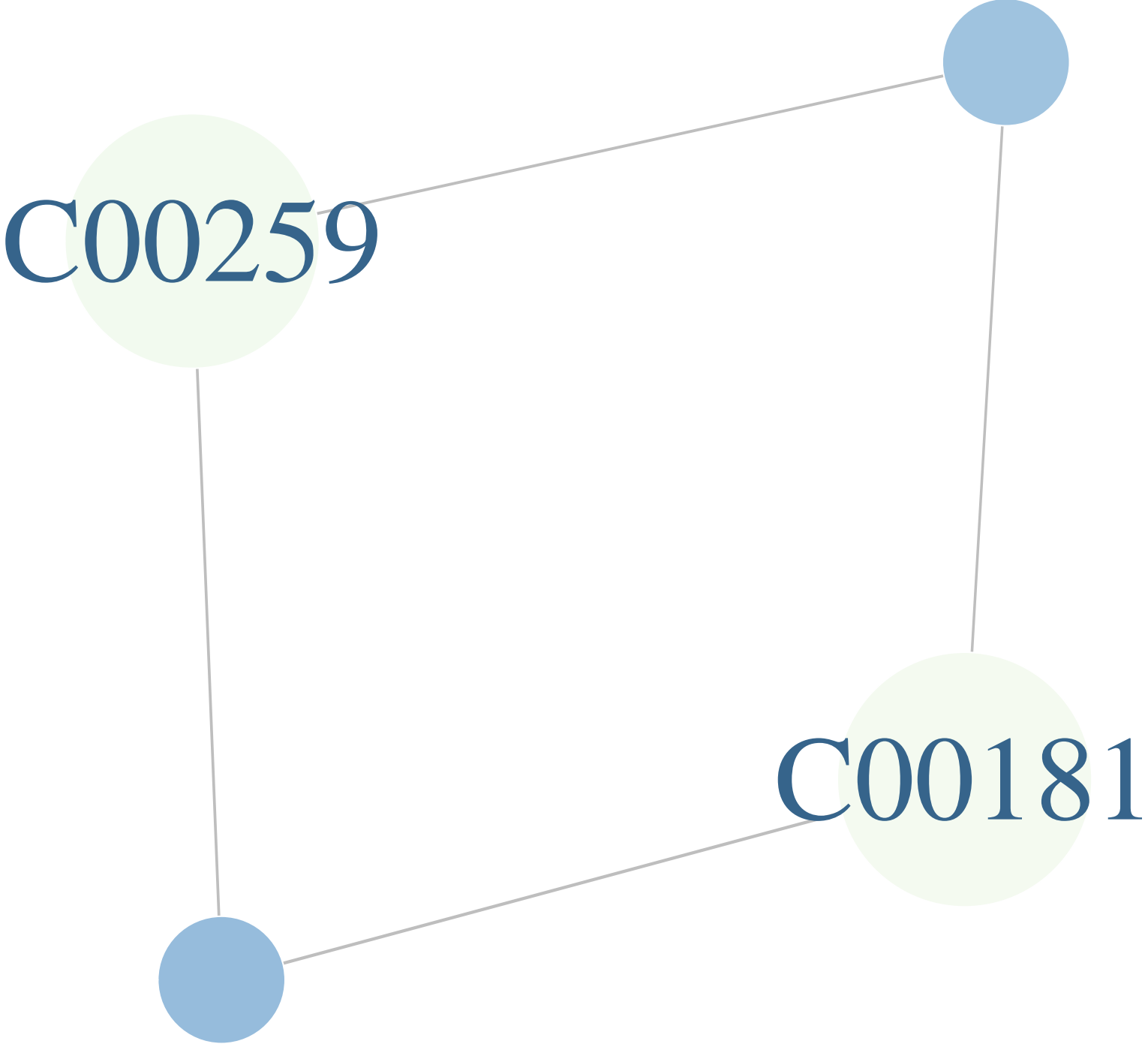
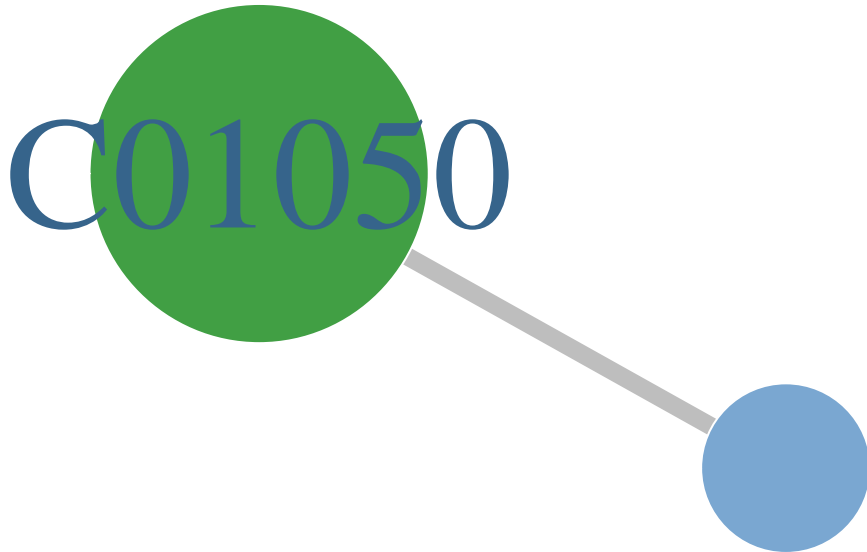
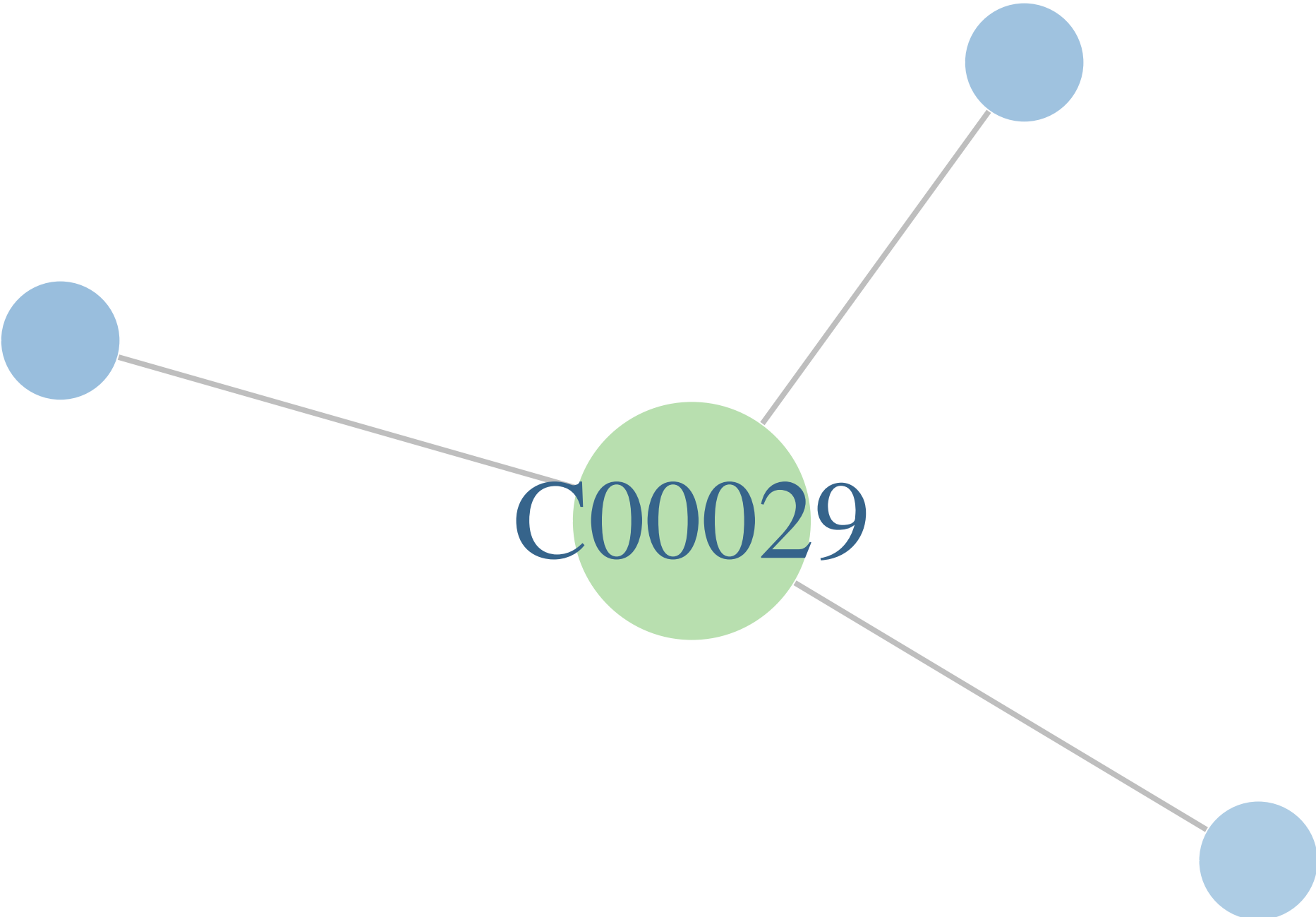
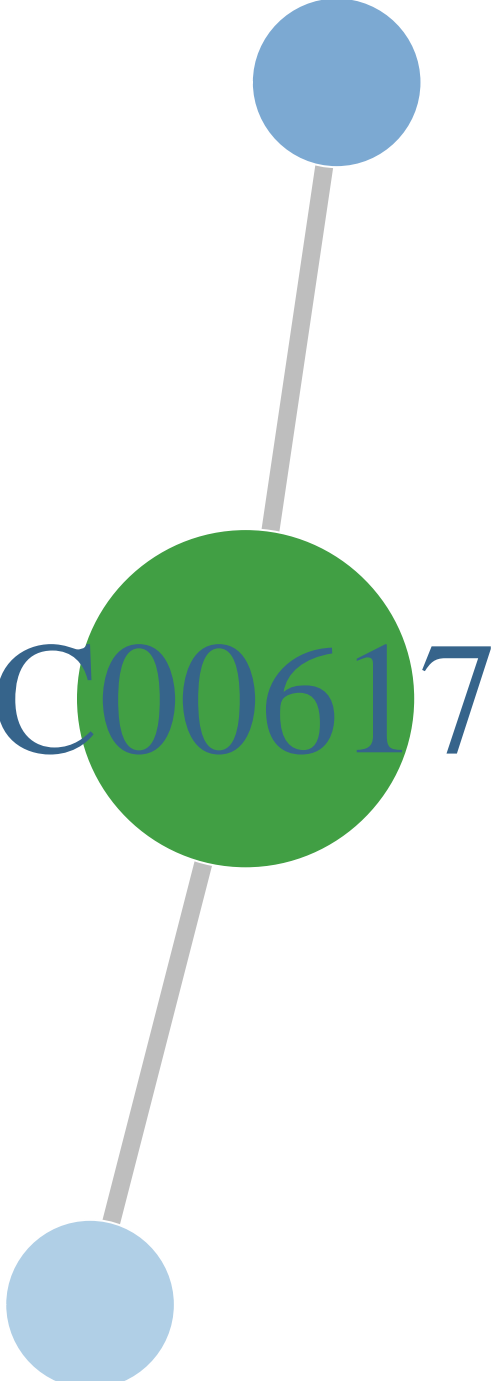
glycosphingolipid metabolism ; p-value: 0.117



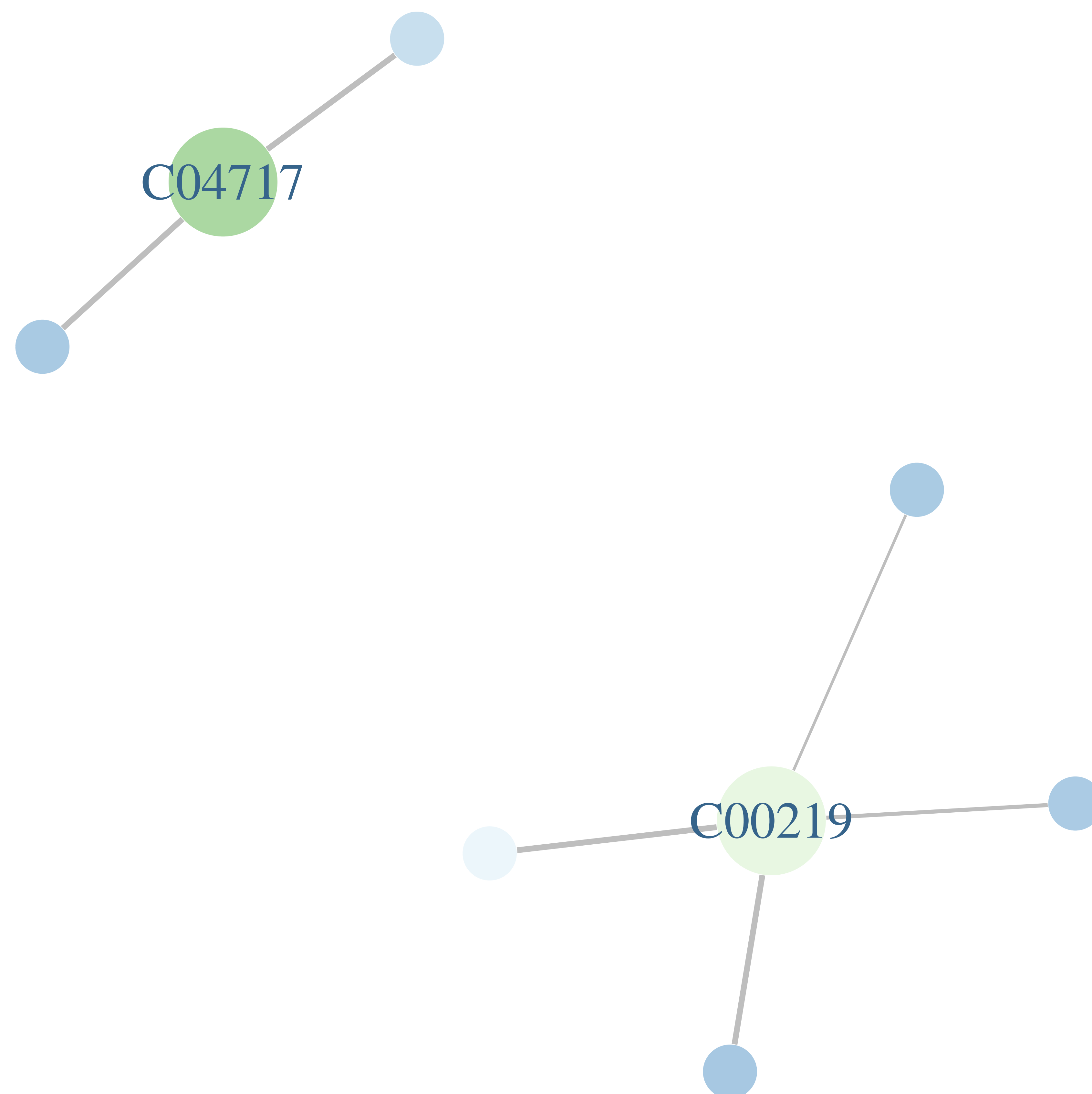
histidine metabolism ; p-value: 0.212



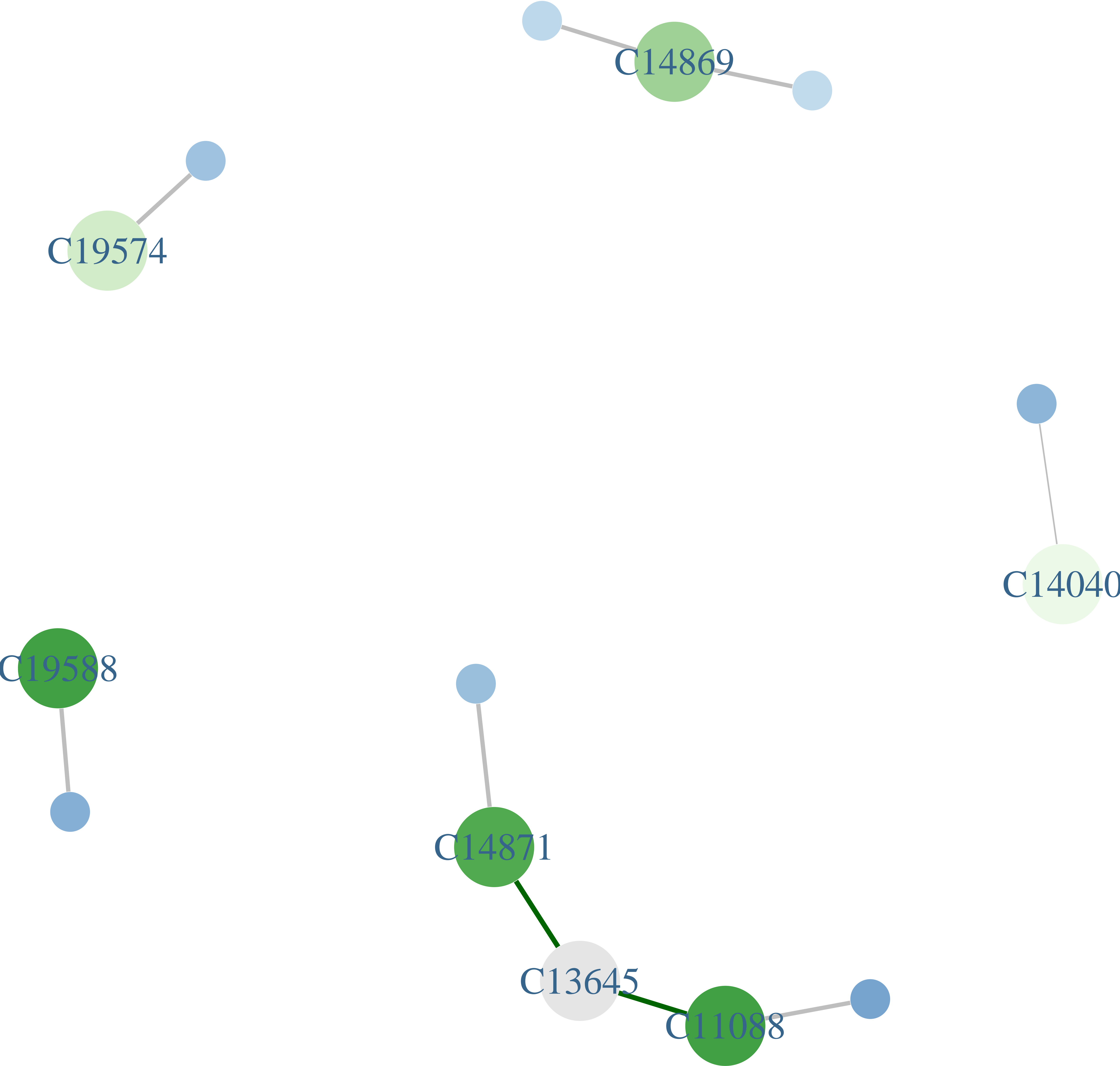
amino sugar and nucleotide sugar metabolism ; p-value: 0.022



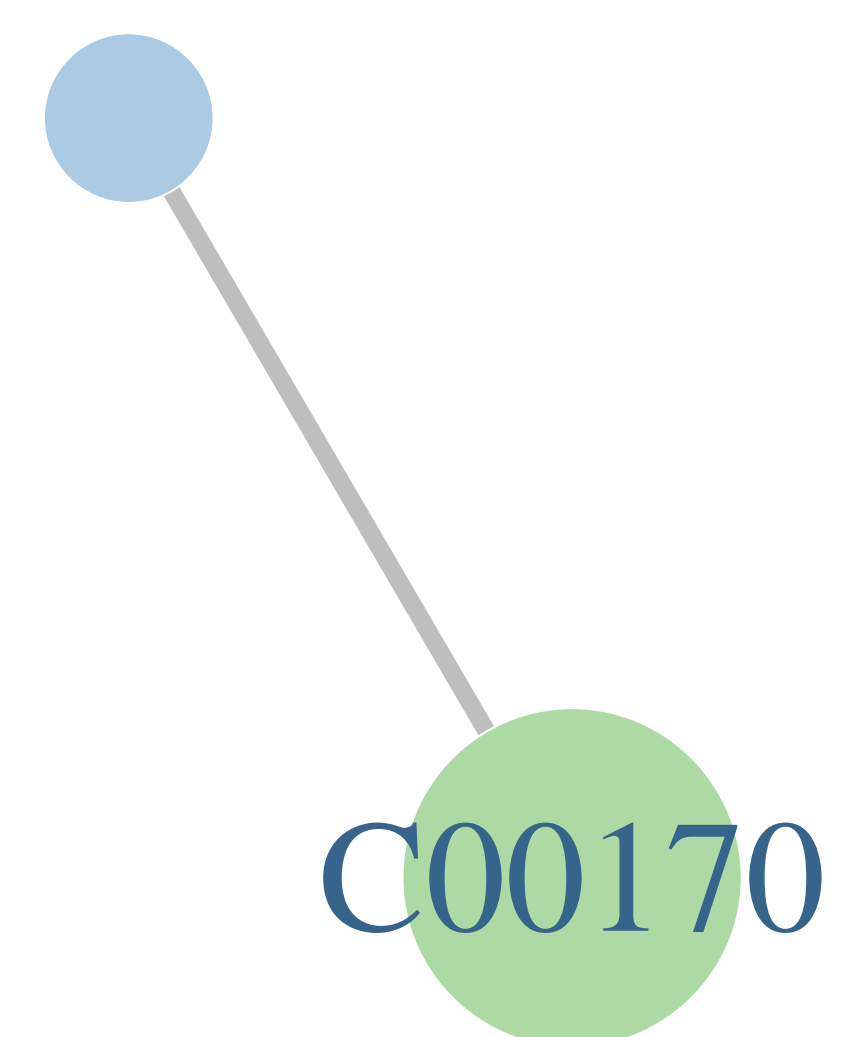
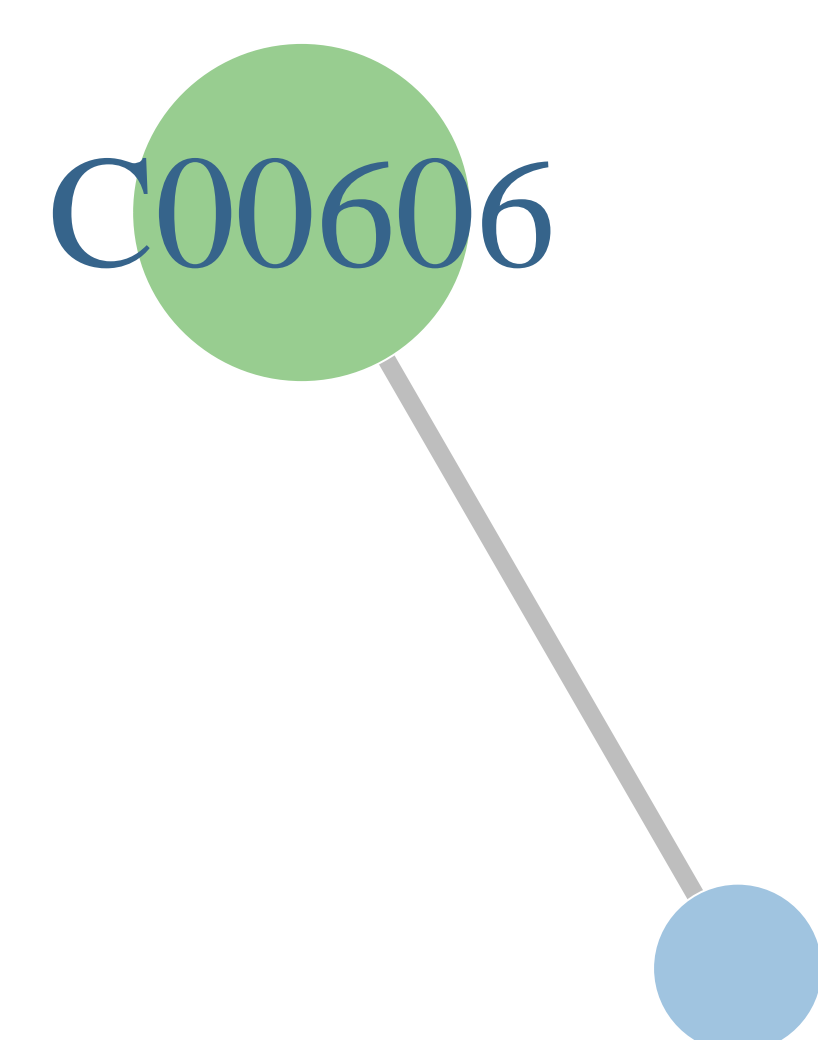
linoleic acid metabolism ; p-value: 0.068



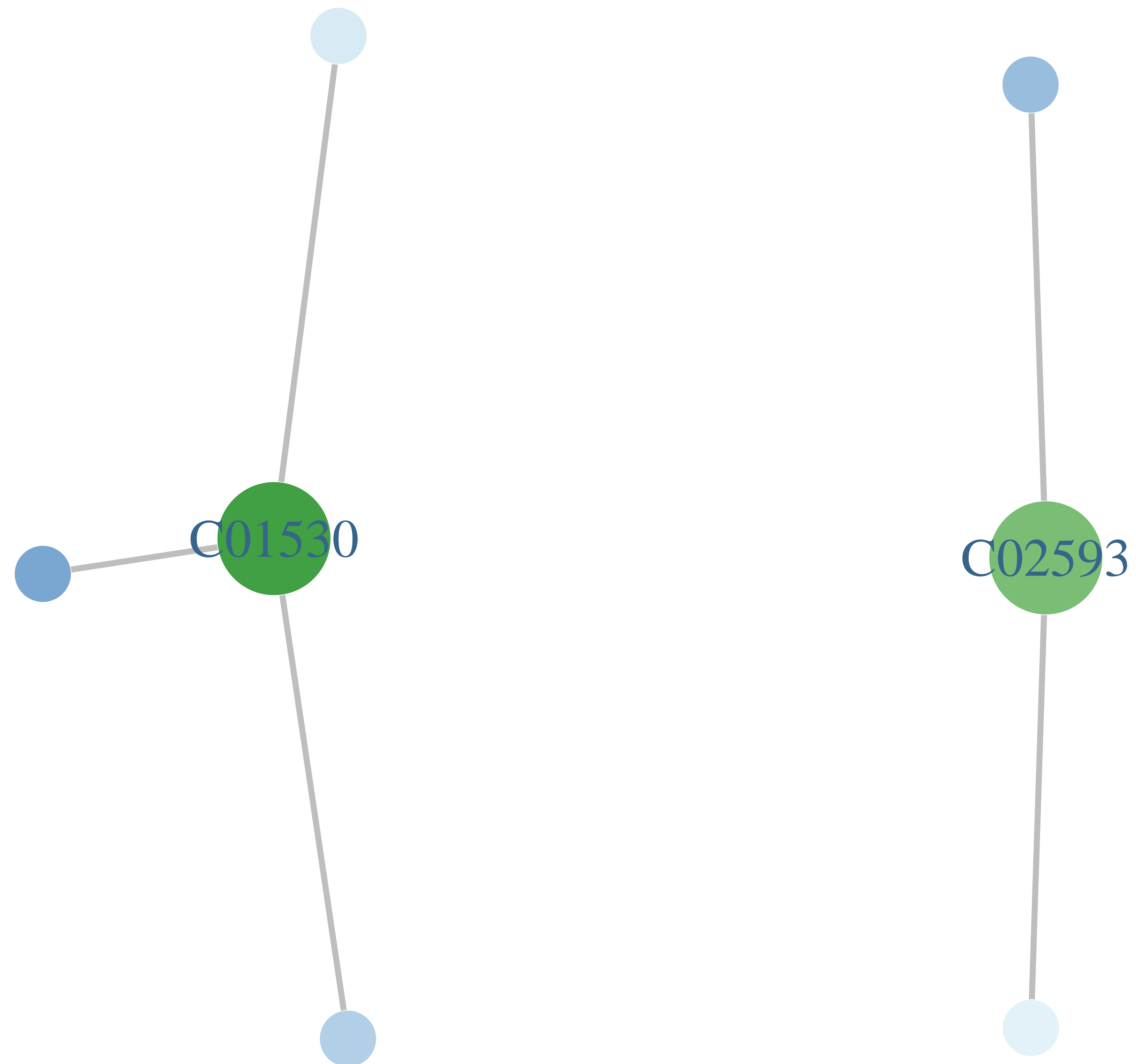
metabolism of xenobiotics by cytochrome p450 ; p-value: 0.073



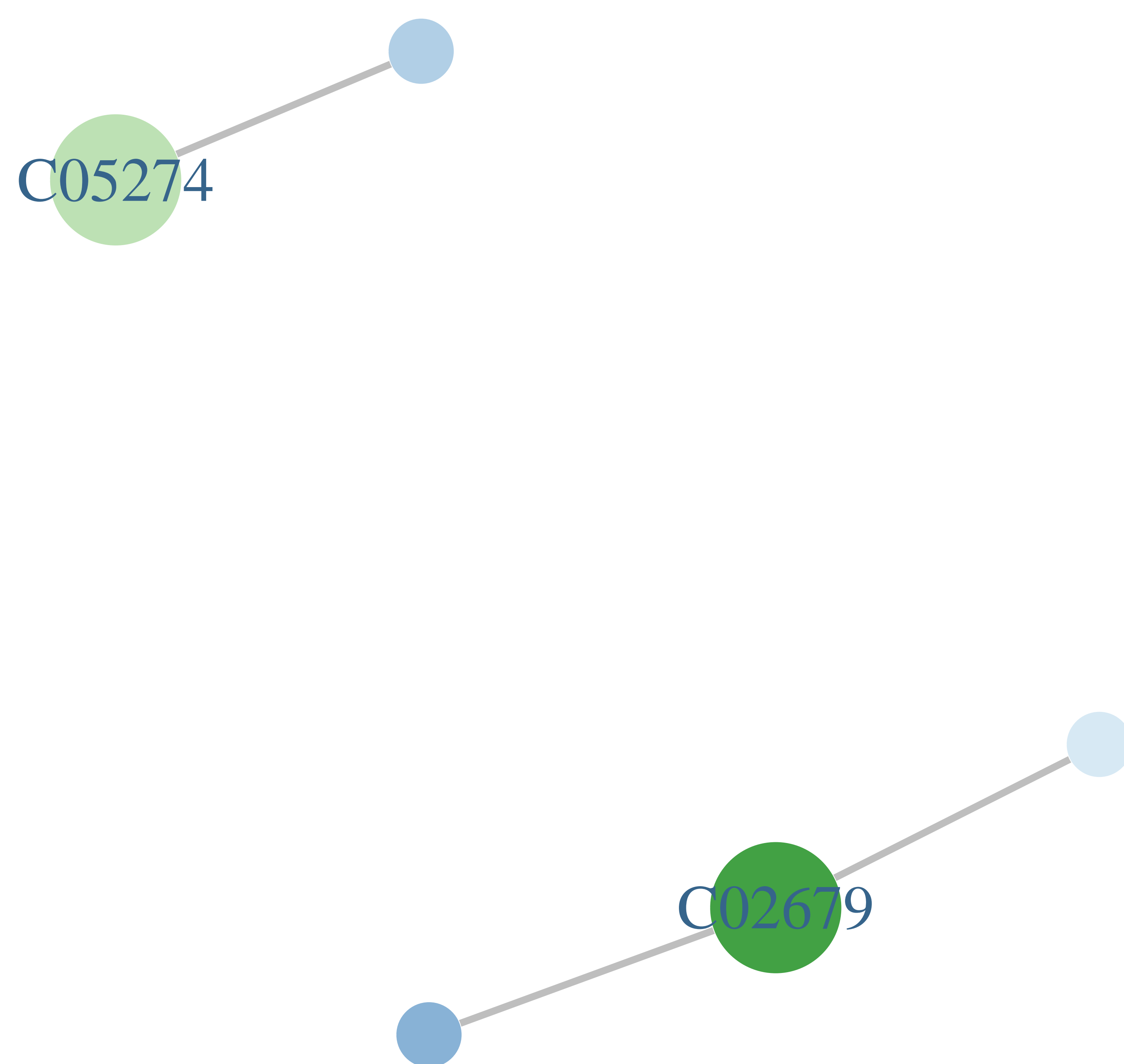
methionine and cysteine metabolism ; p-value: 0.643



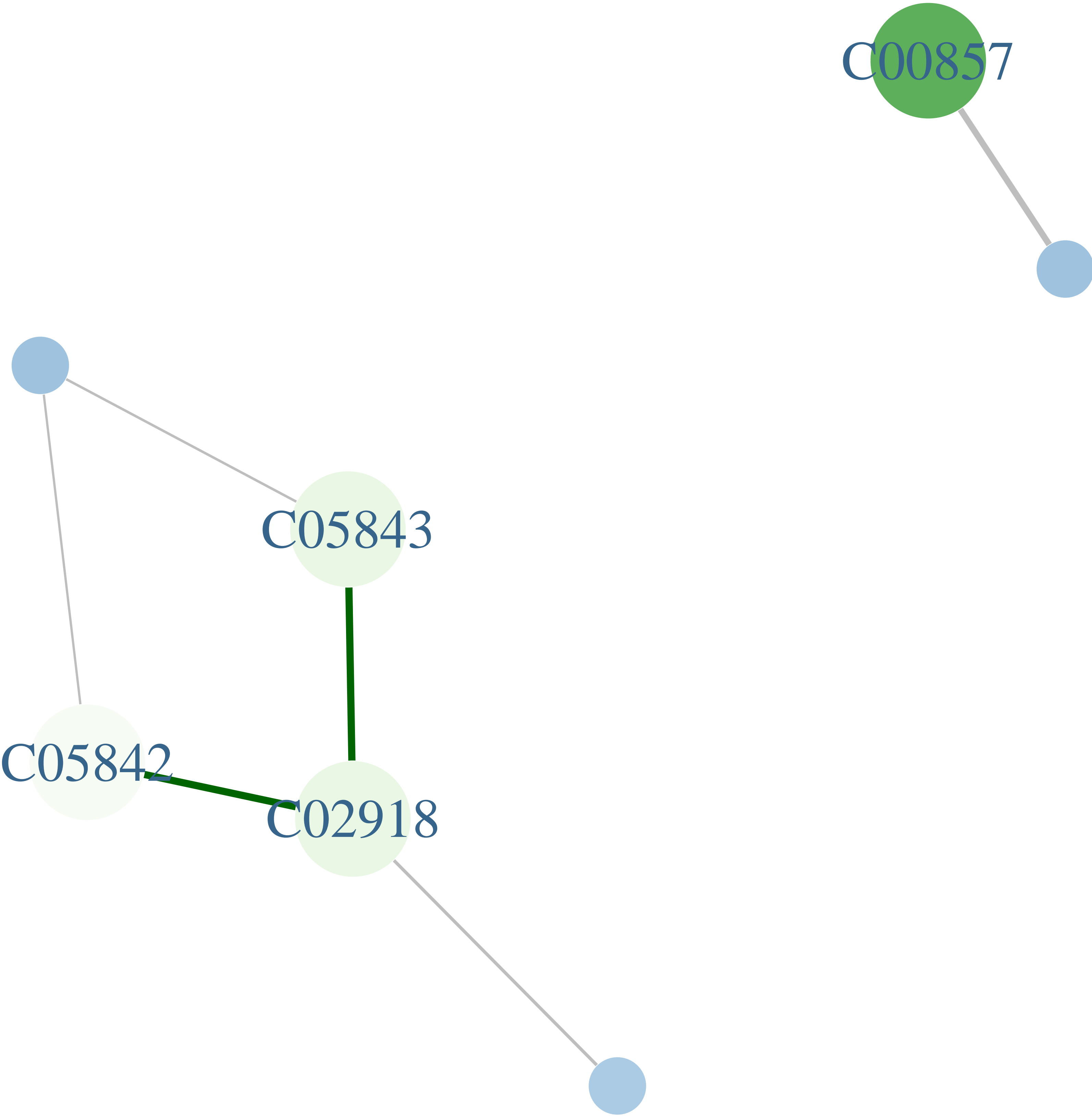
mitochondrial beta-oxidation of long chain saturated fatty acids ; p-value: 0.198



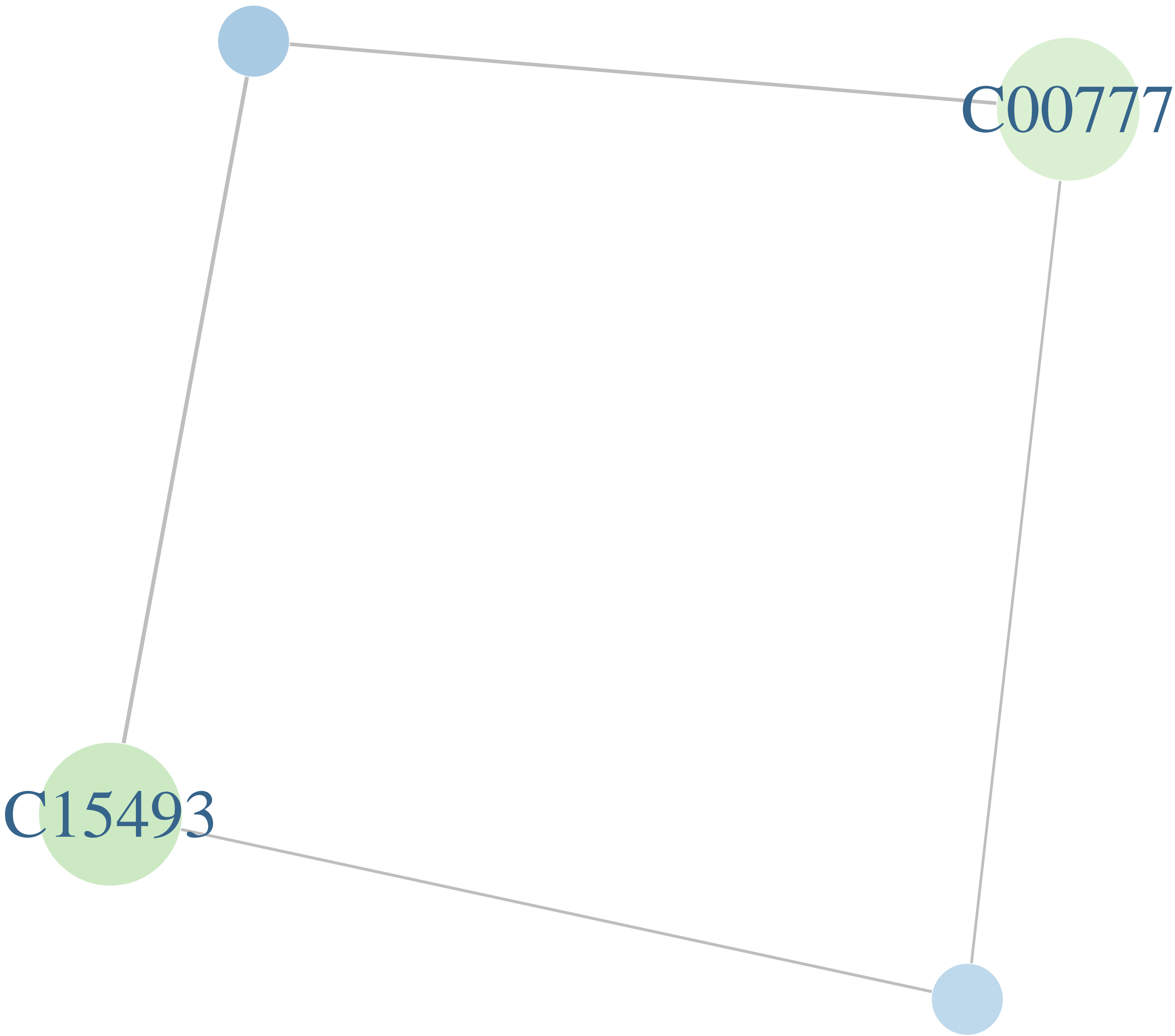
mitochondrial beta-oxidation of medium chain saturated fatty acids ; p-value: 0.198



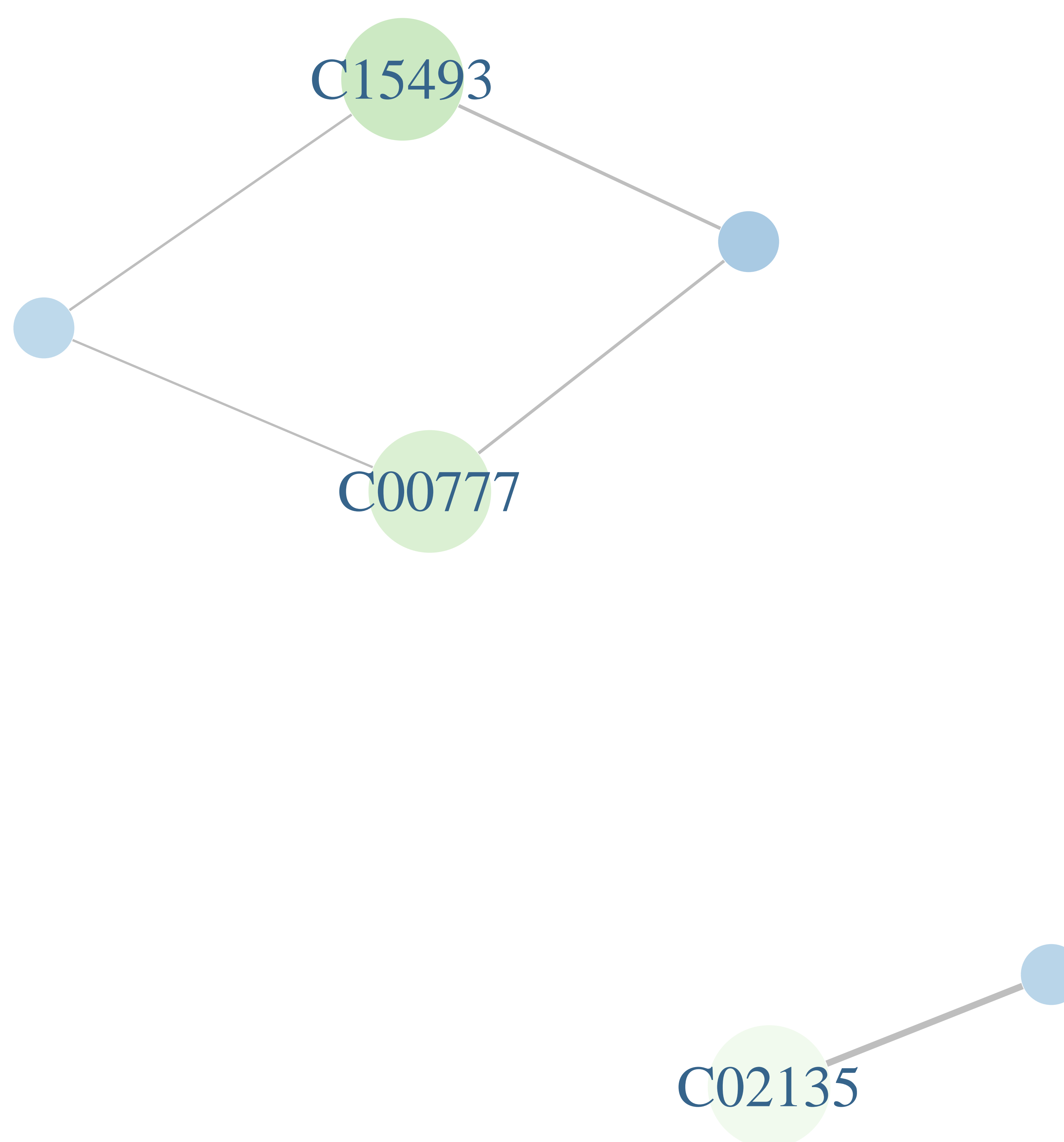
nicotinate and nicotinamide metabolism ; p-value: 0.029



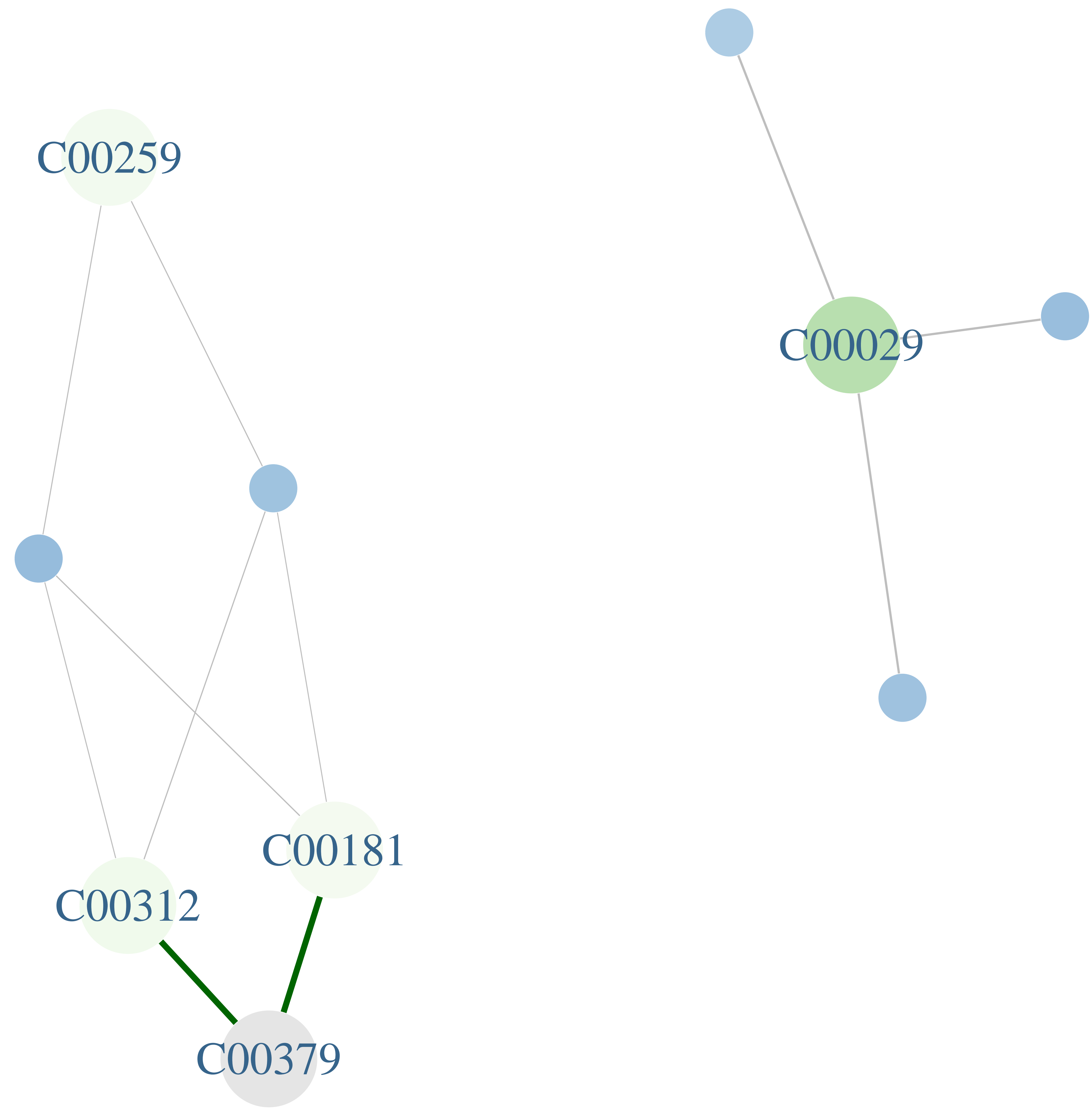
non-small cell lung cancer ; p-value: 0.027



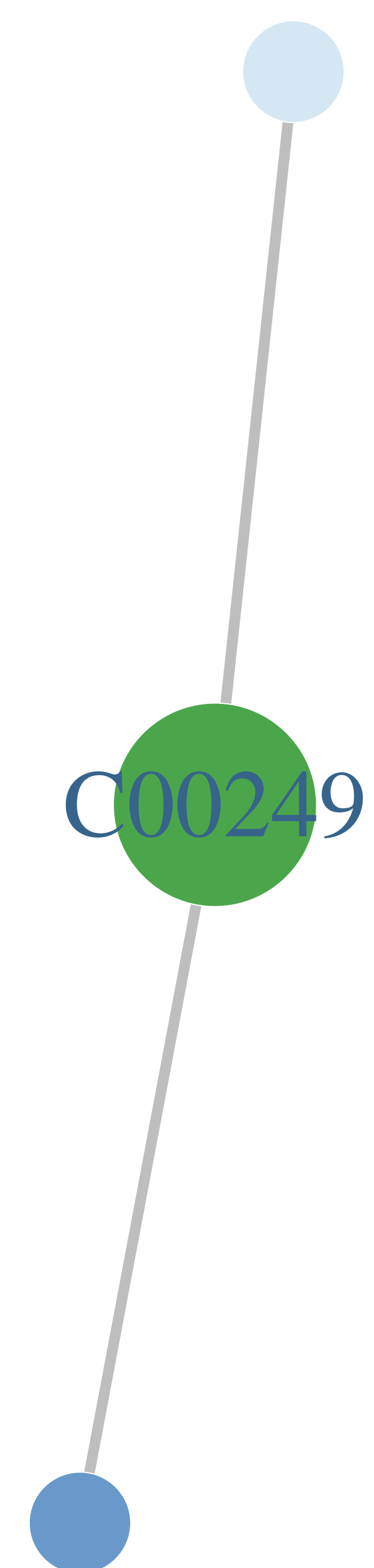
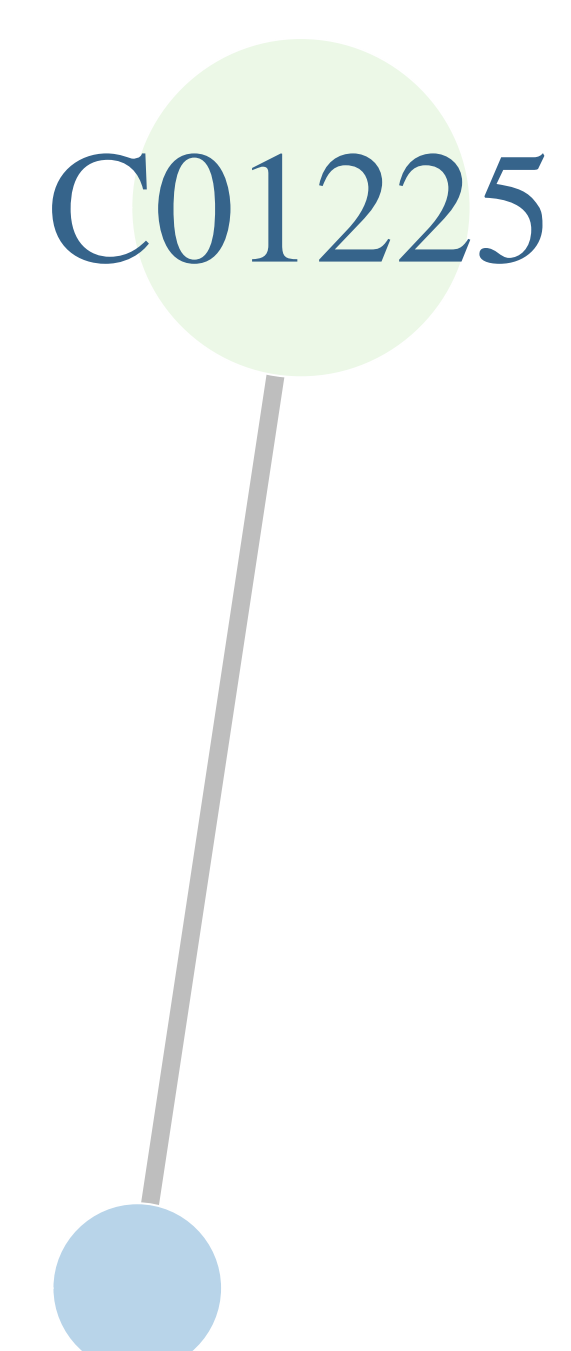
pathways in cancer ; p-value: 0.072



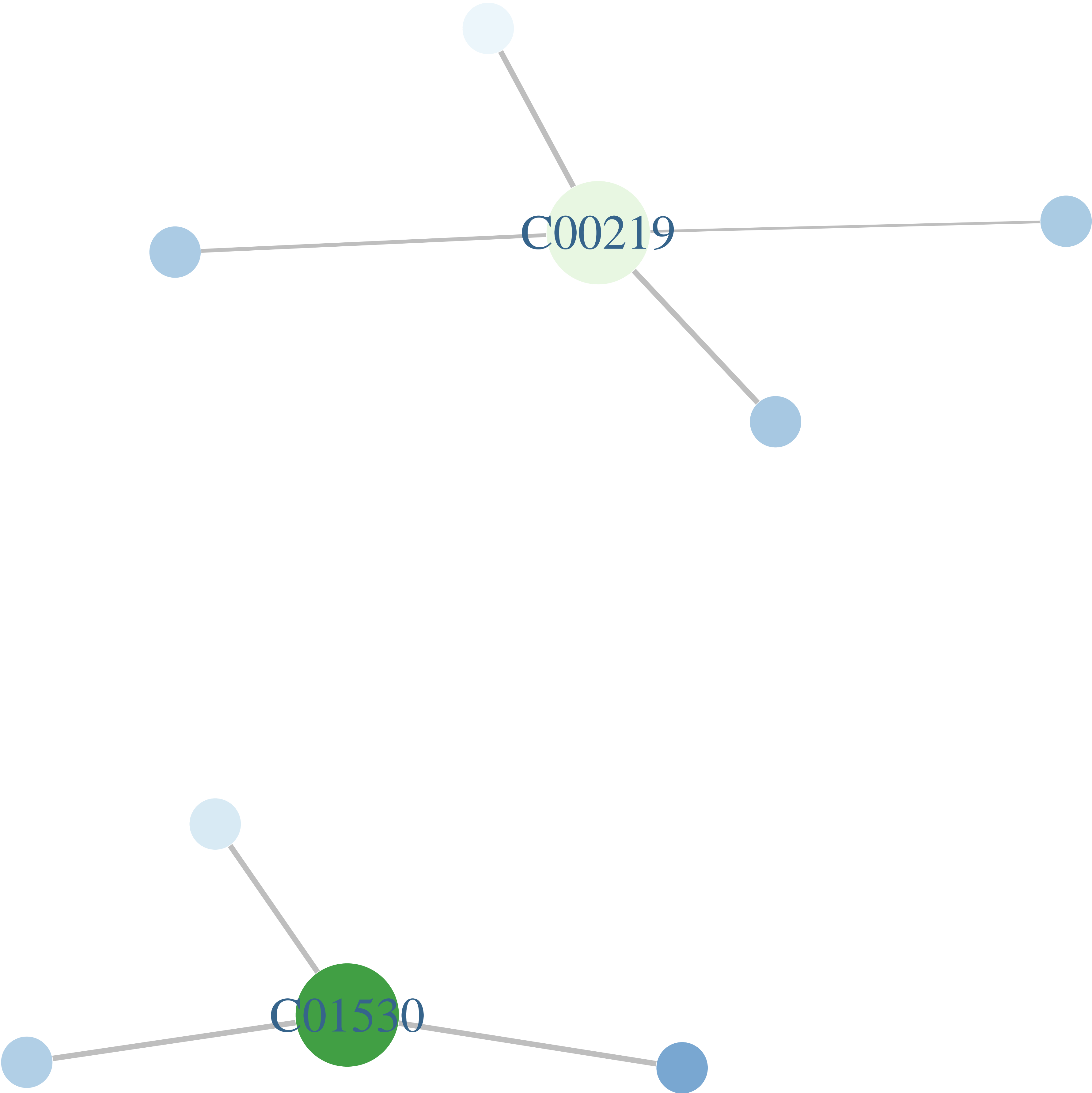
pentose and glucuronate interconversions ; p-value: 0.021



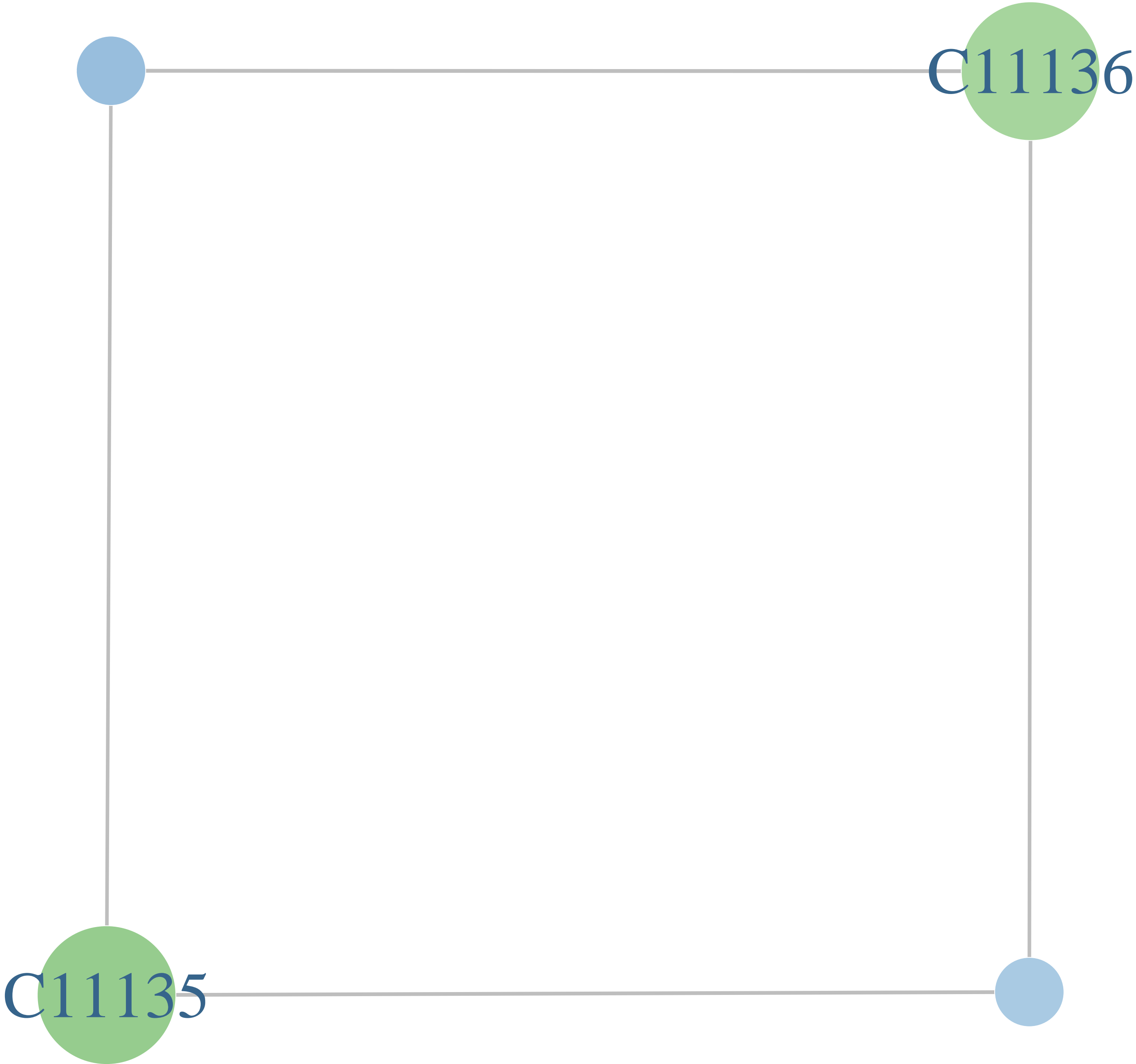
phosphatidylinositol phosphate metabolism ; p-value: 0.533



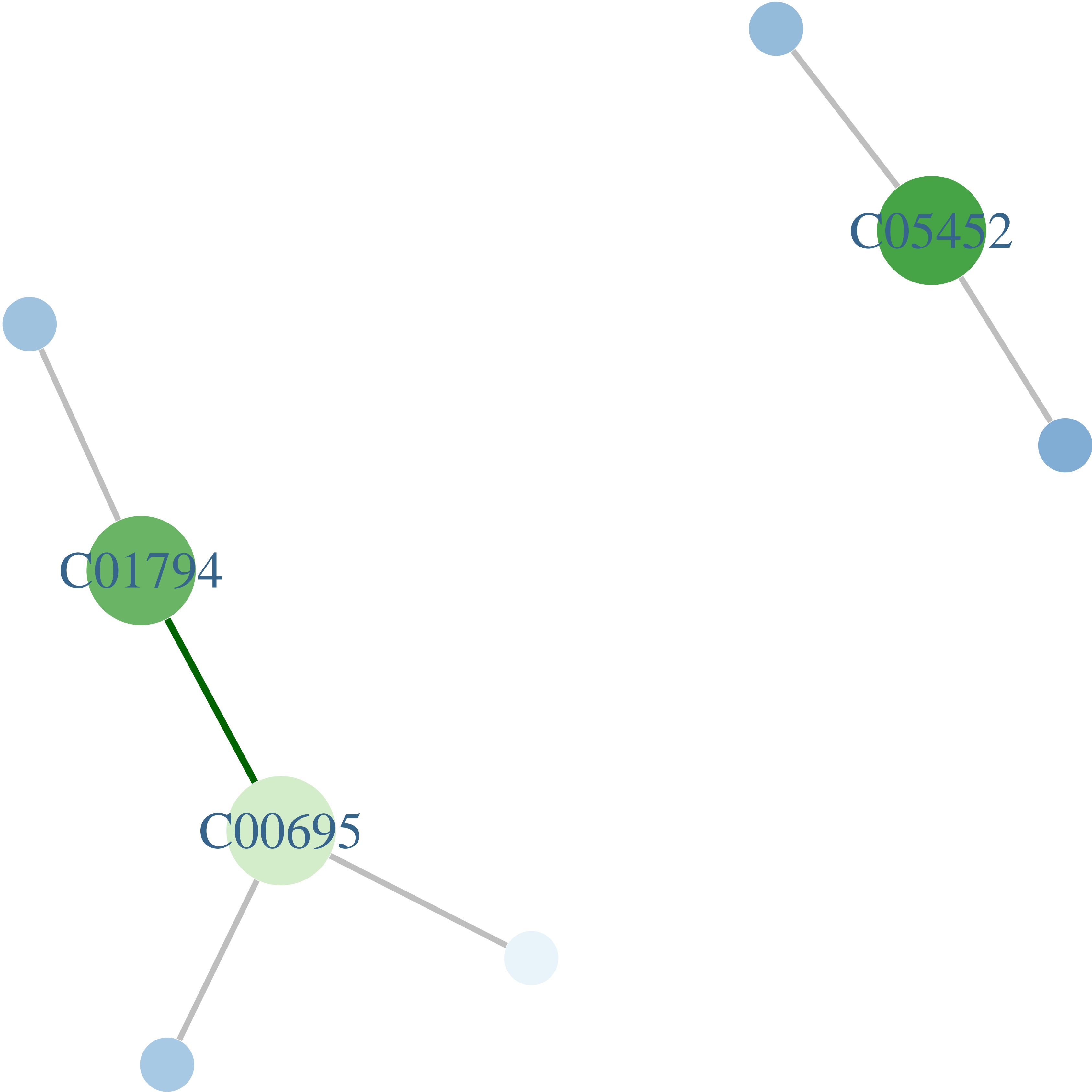
phototransduction – fly ; p-value: 0.017



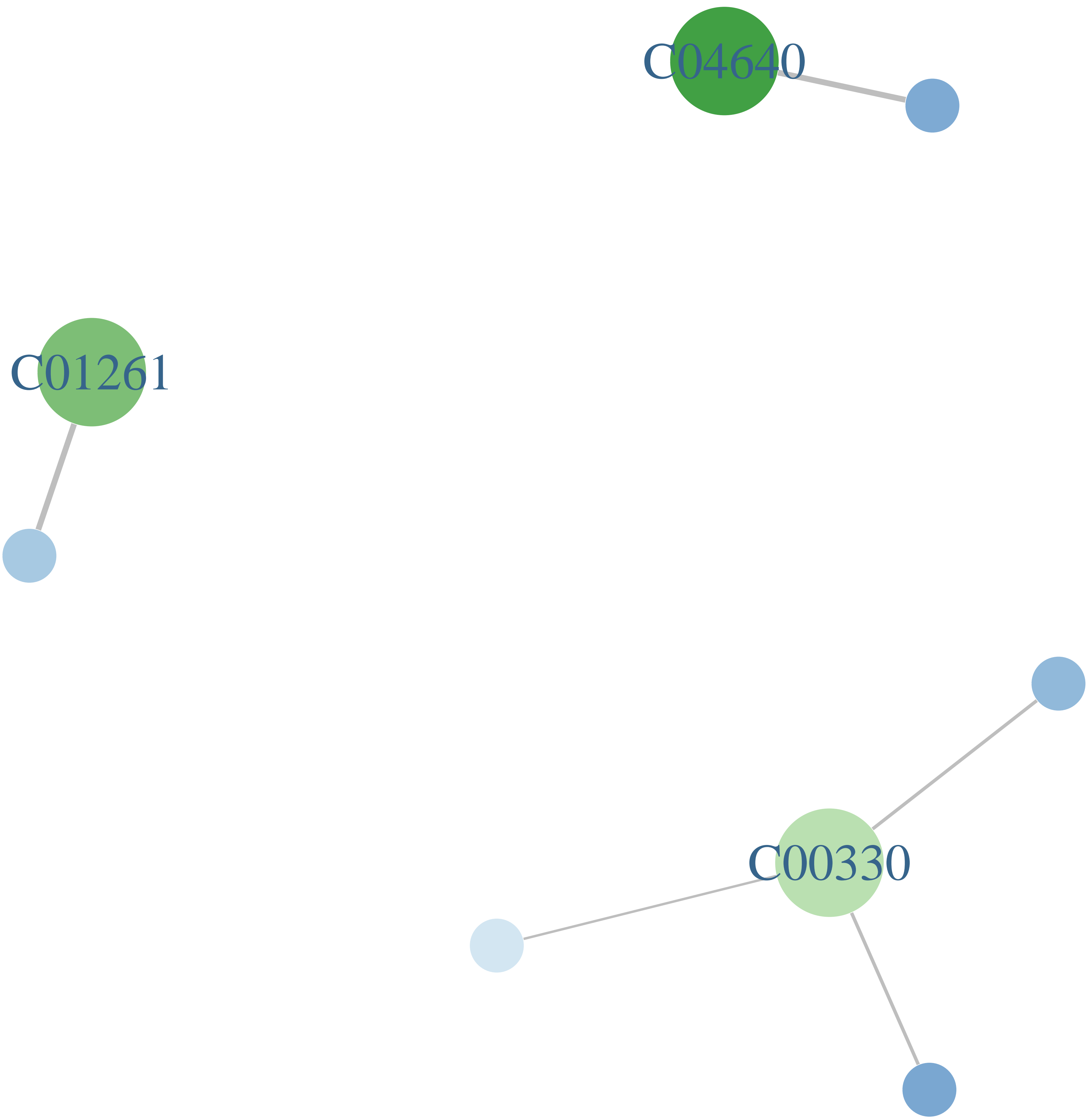
androgen and estrogen metabolism ; p-value: 0.643



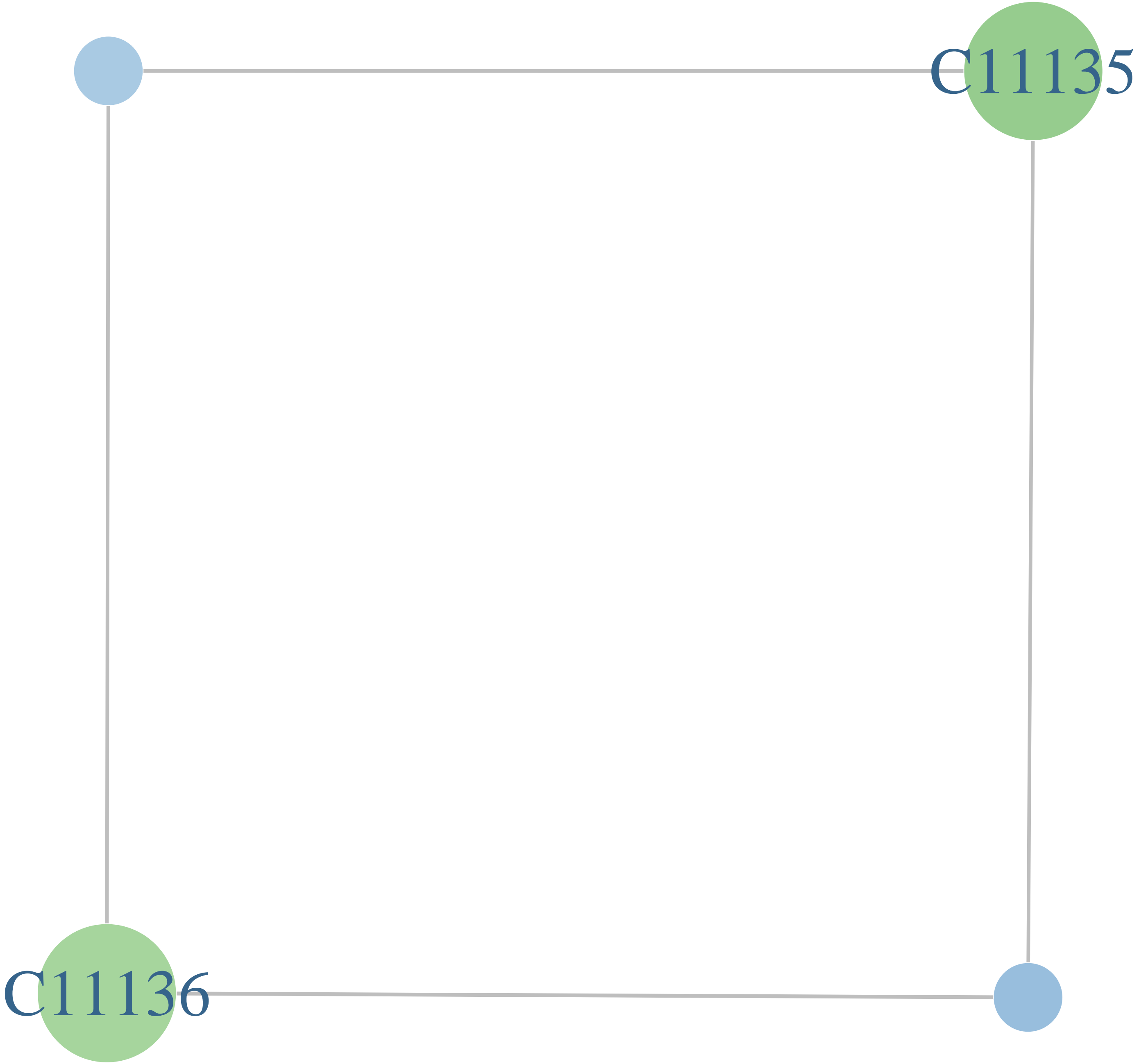
primary bile acid biosynthesis ; p-value: 0.318



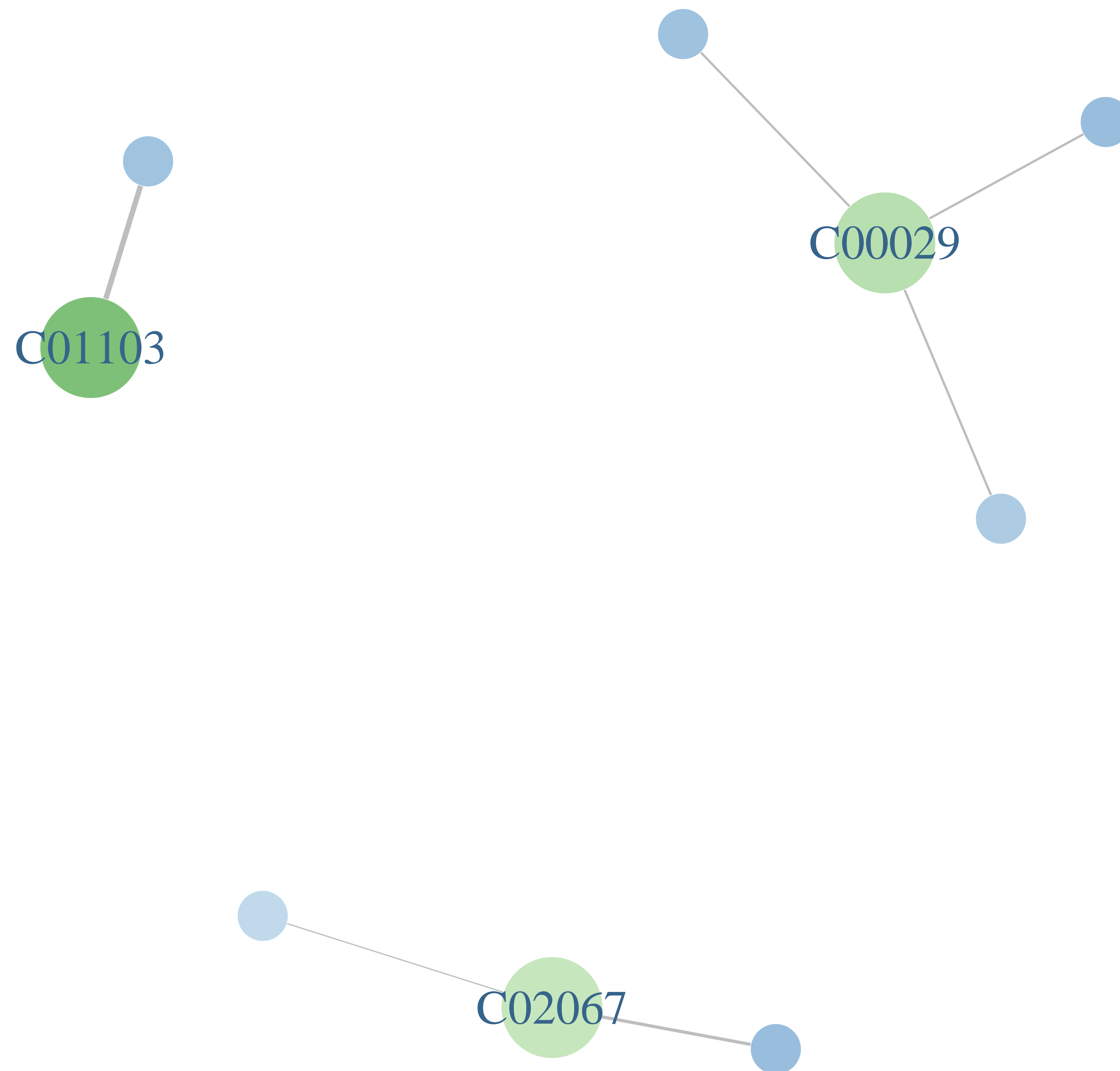
purine metabolism ; p-value: 0.715



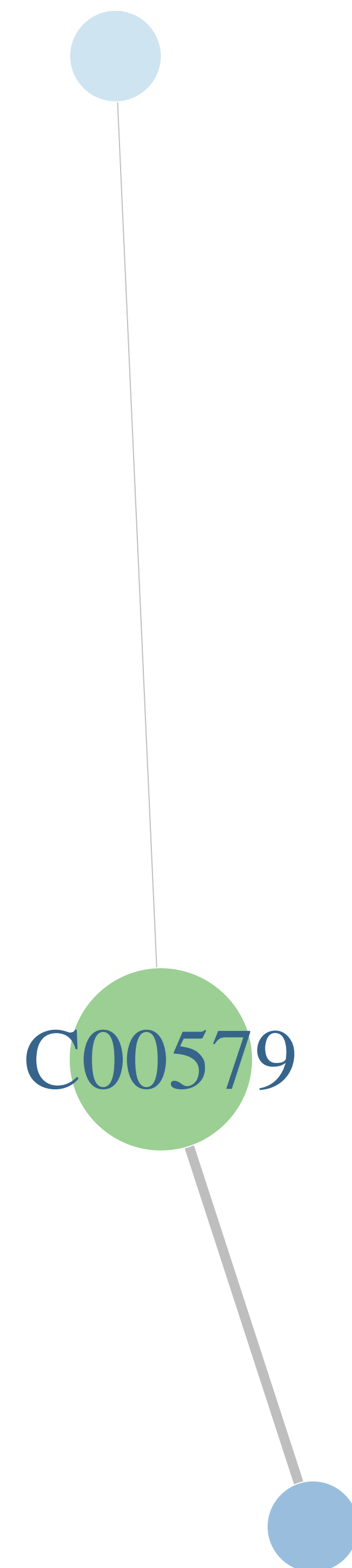
androstenedione metabolism ; p-value: 0.138



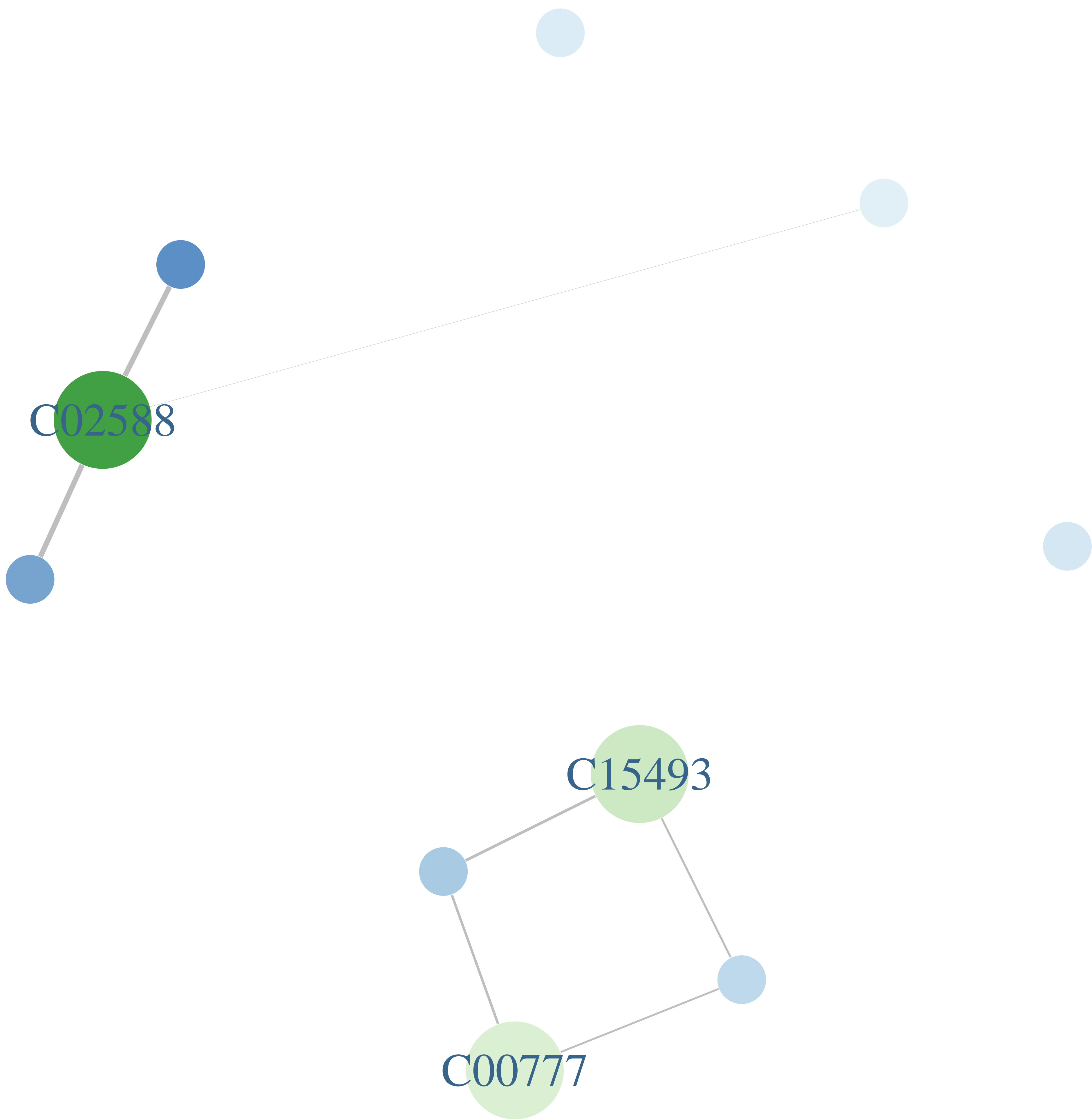
pyrimidine metabolism ; p-value: 0.54



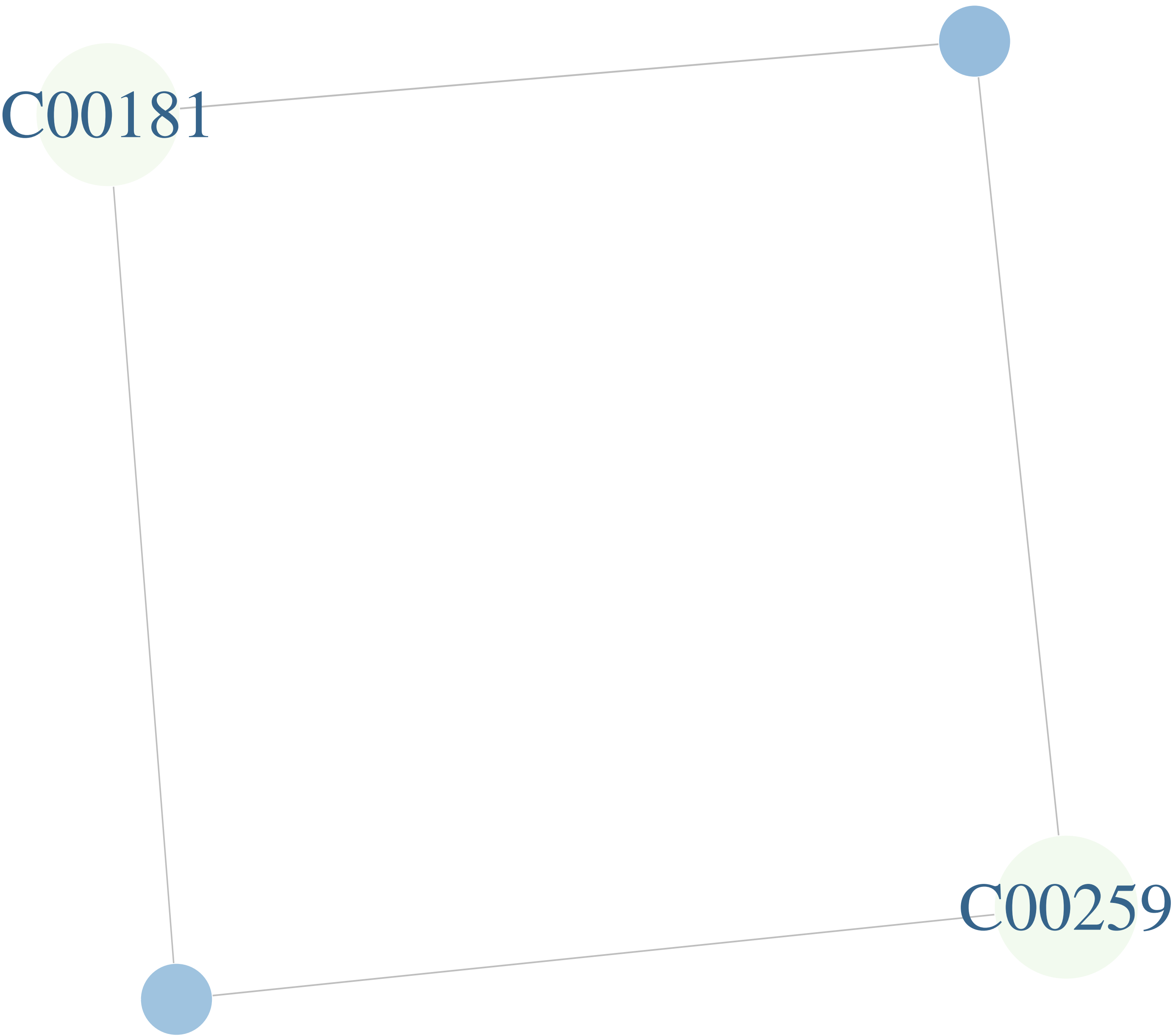
pyruvate metabolism ; p-value: 0.26



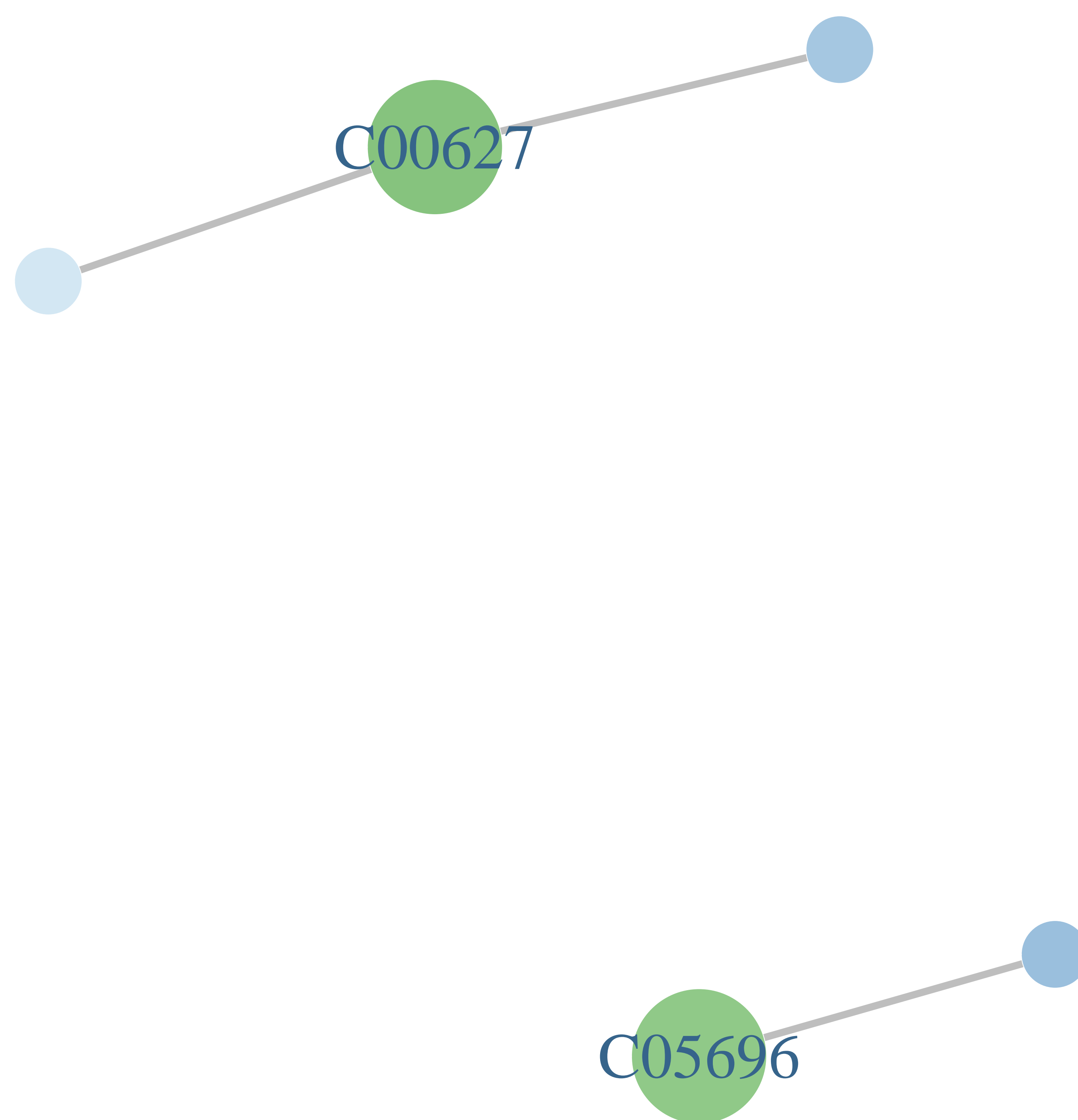
retinol metabolism ; p-value: 0.093



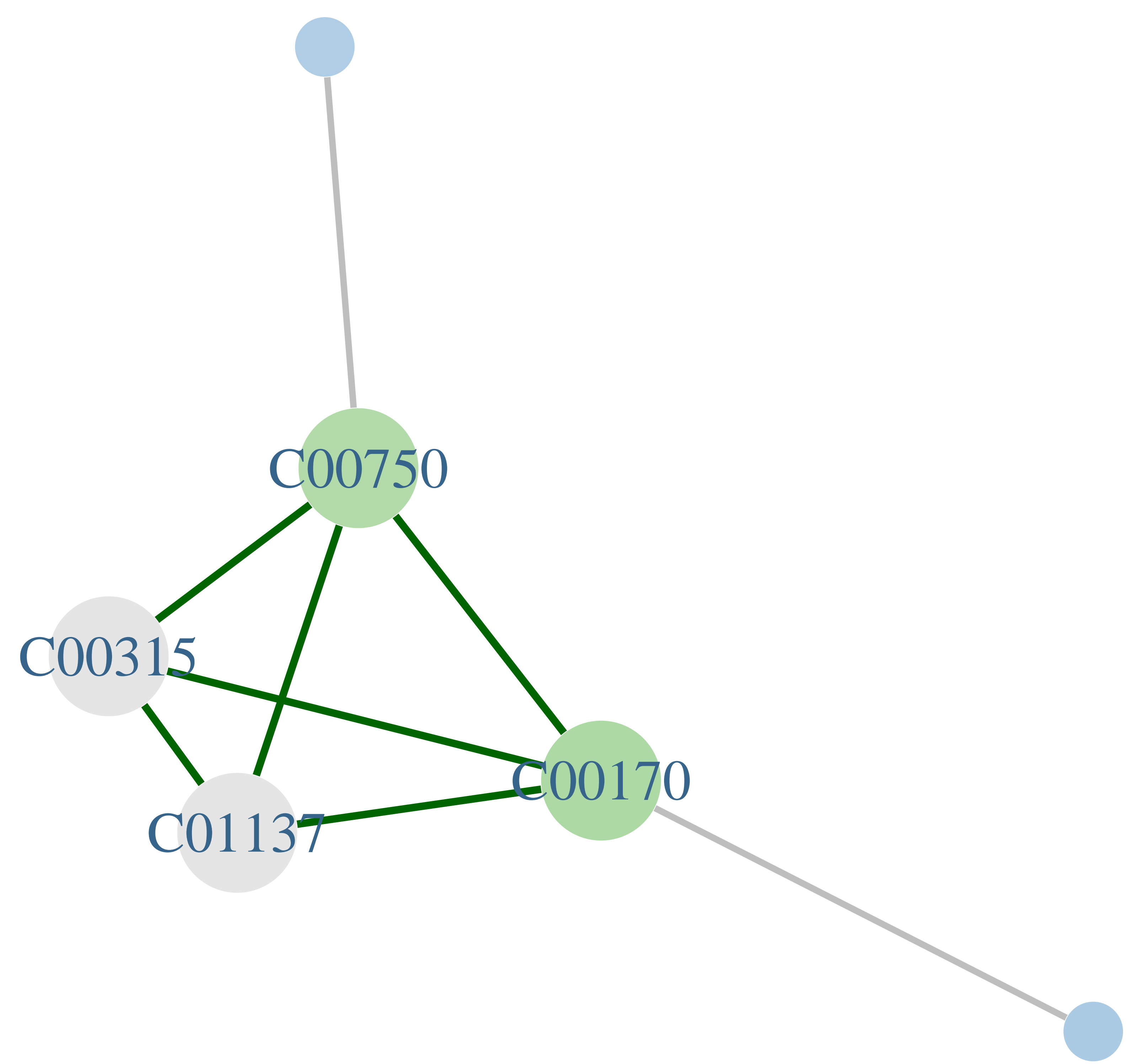
abc transporters ; p-value: 0.708



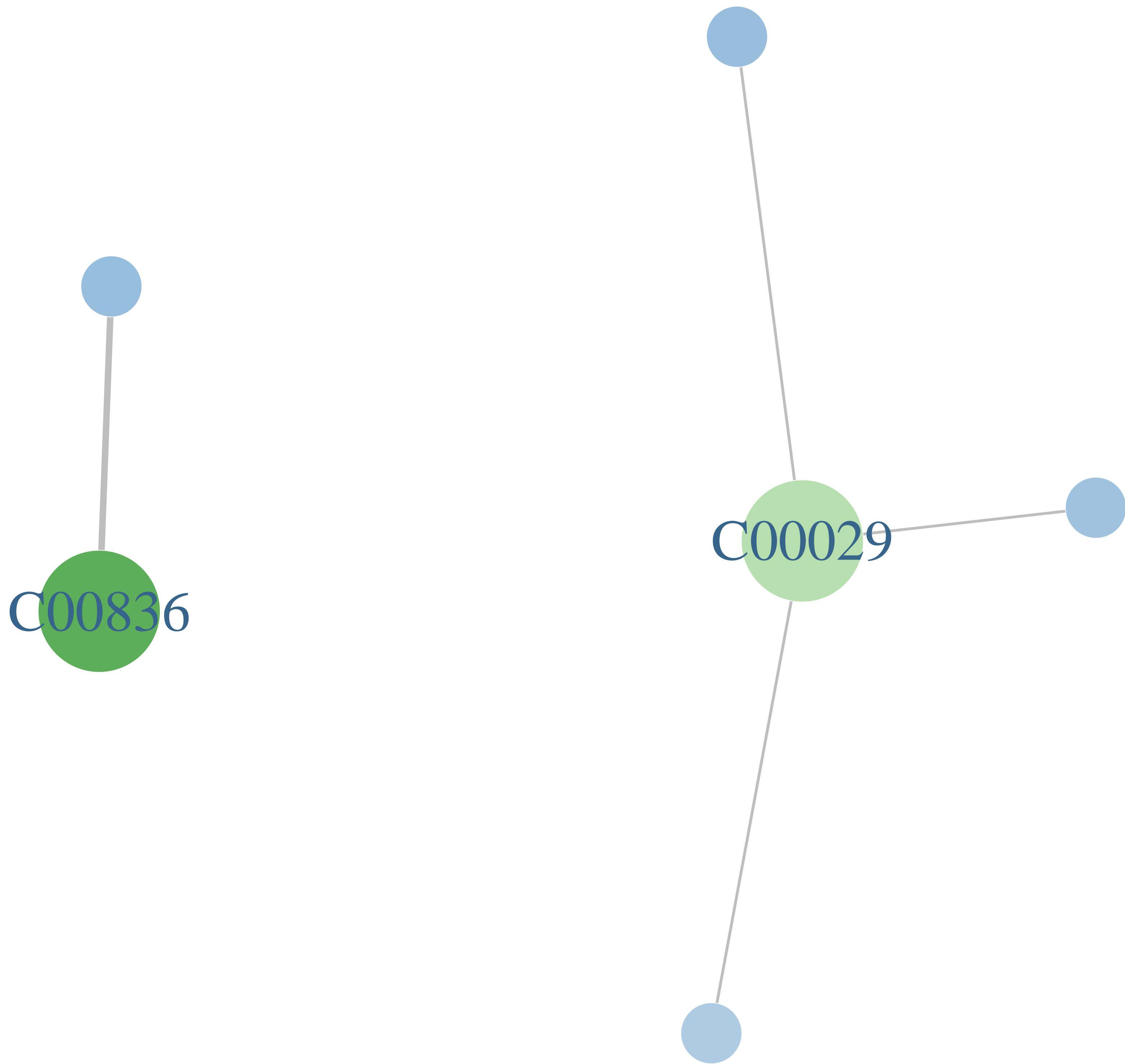
selenoamino acid metabolism ; p-value: 0.281



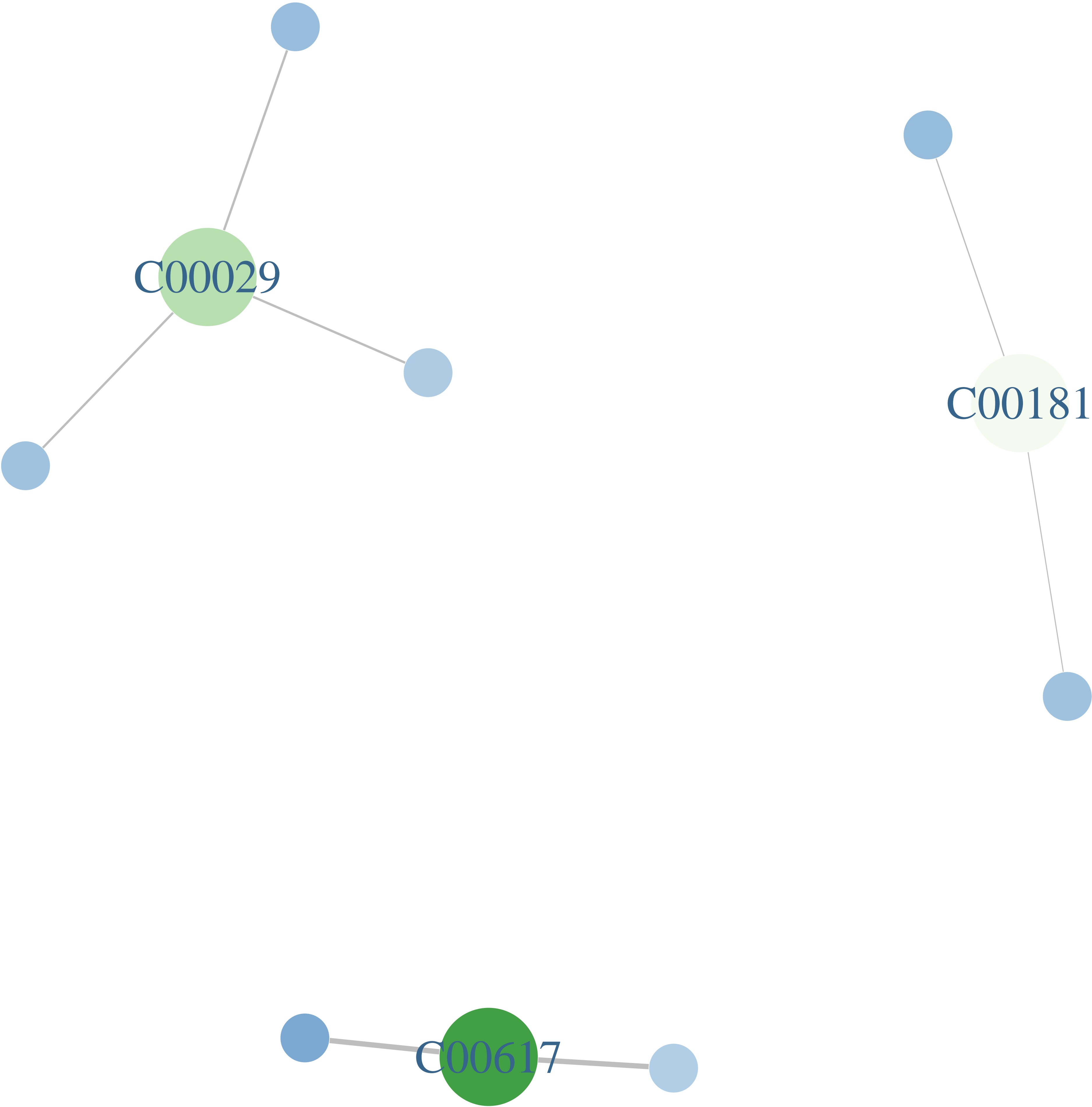
spermidine and spermine biosynthesis ; p-value: 0.084



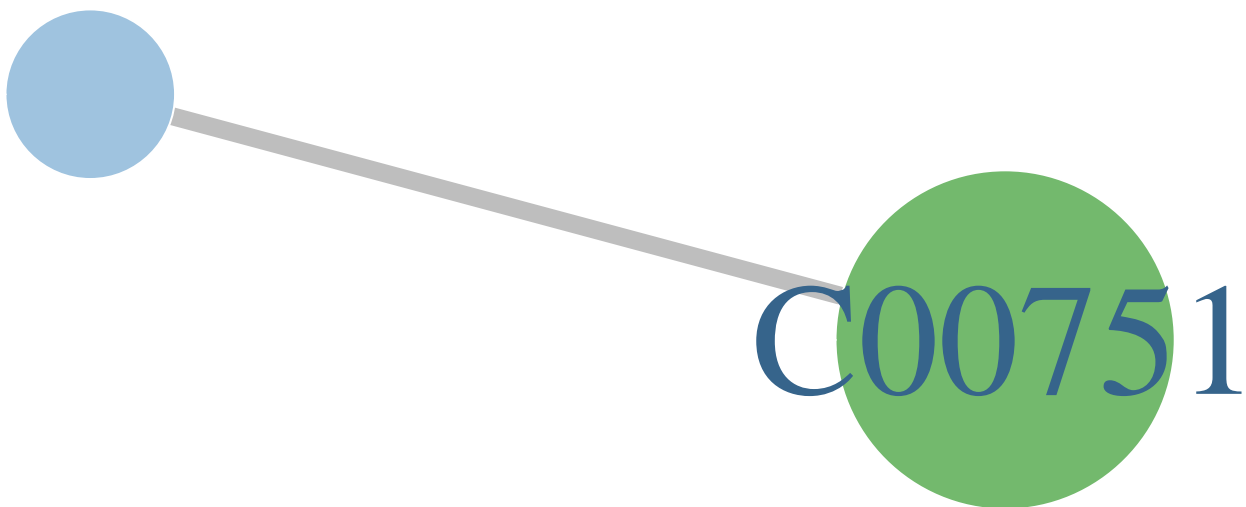
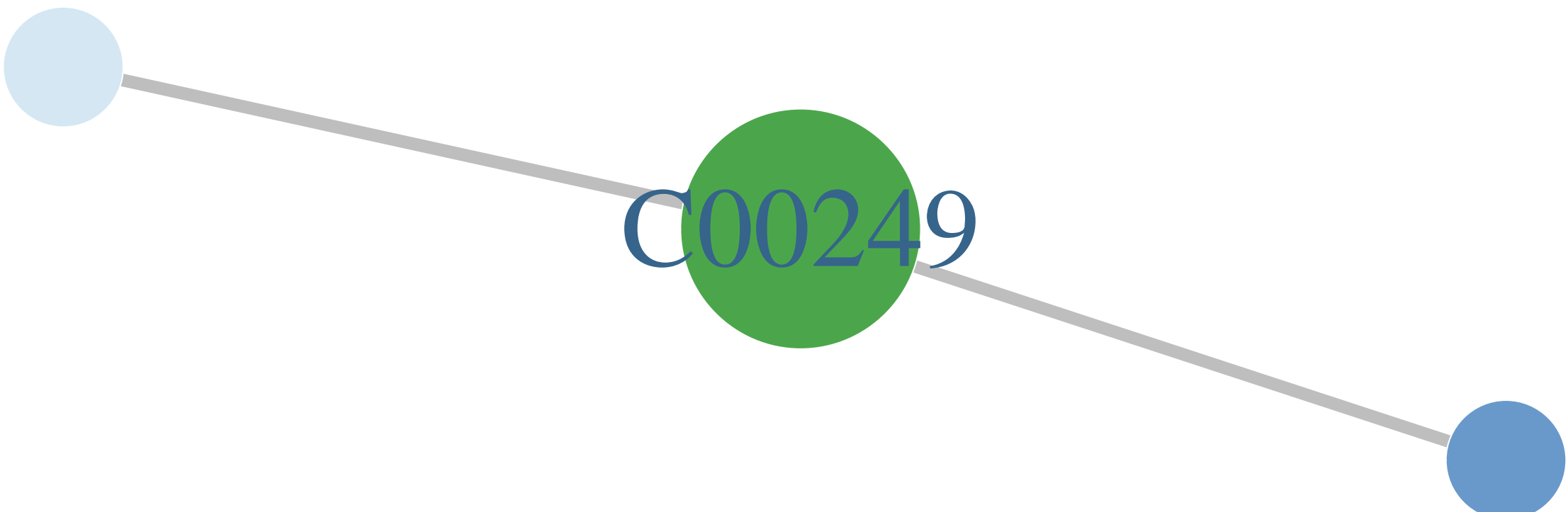
sphingolipid metabolism ; p-value: 0.364



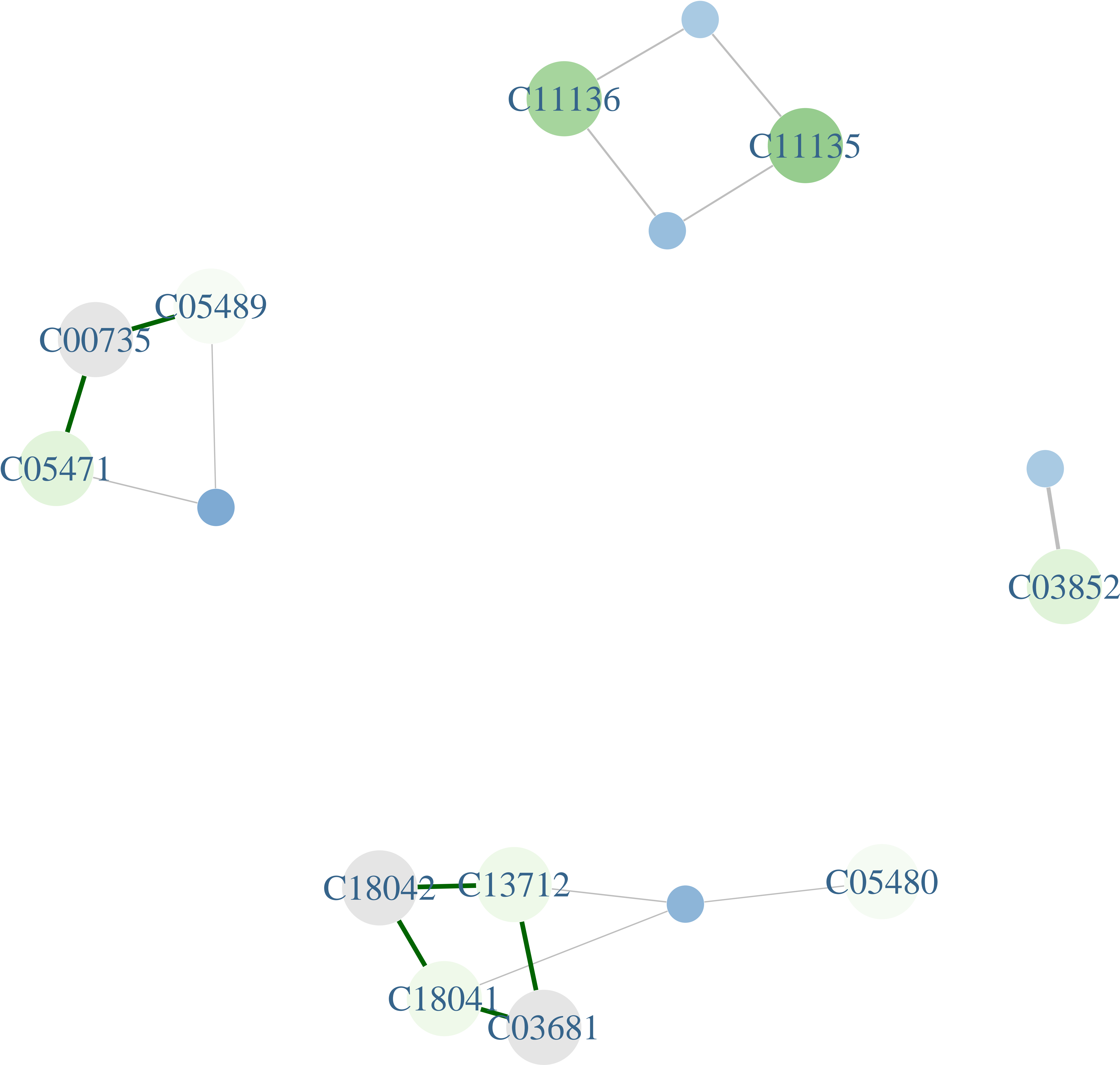
starch and sucrose metabolism ; p-value: 0.155



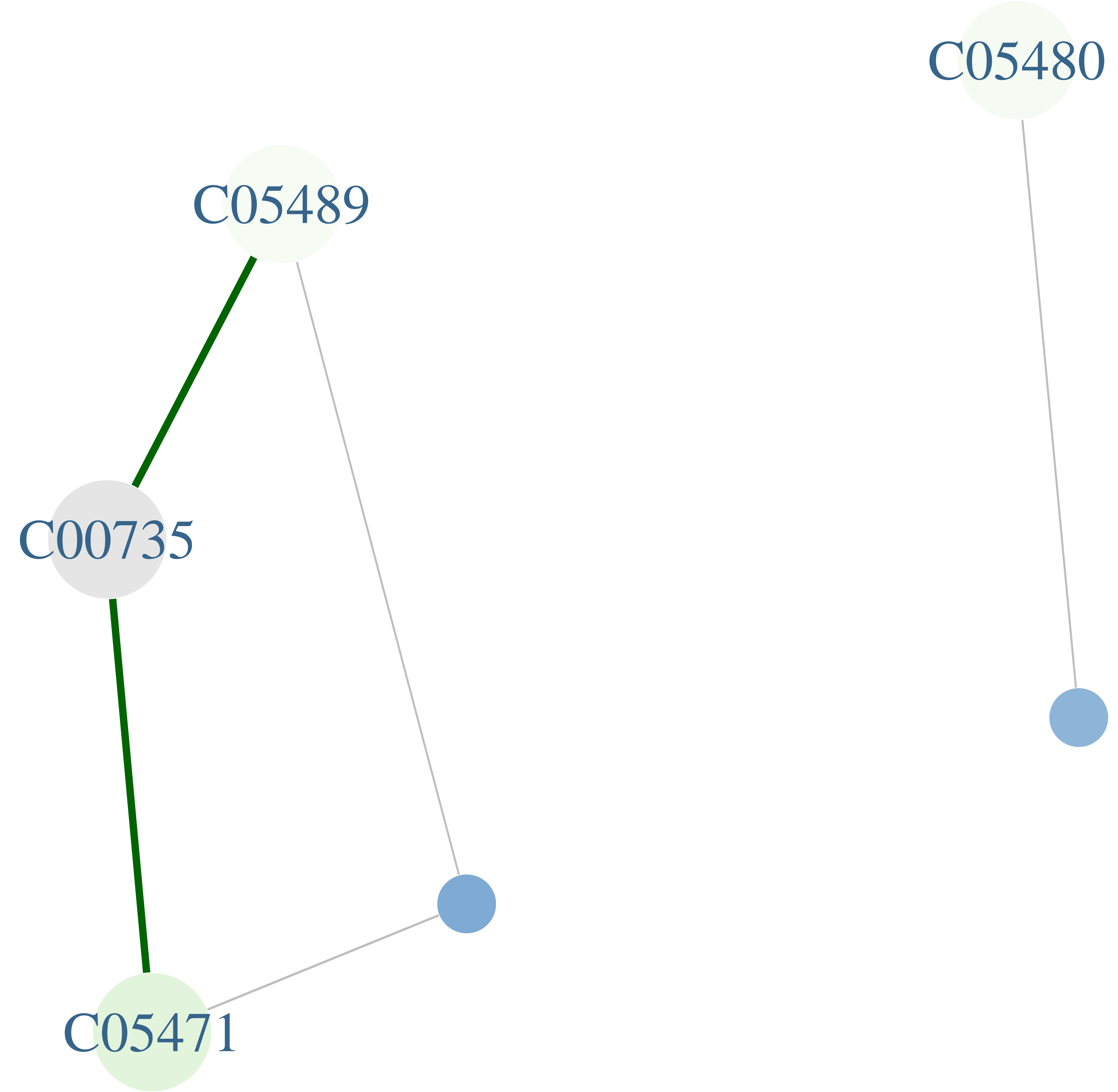
steroid biosynthesis ; p-value: 0.657



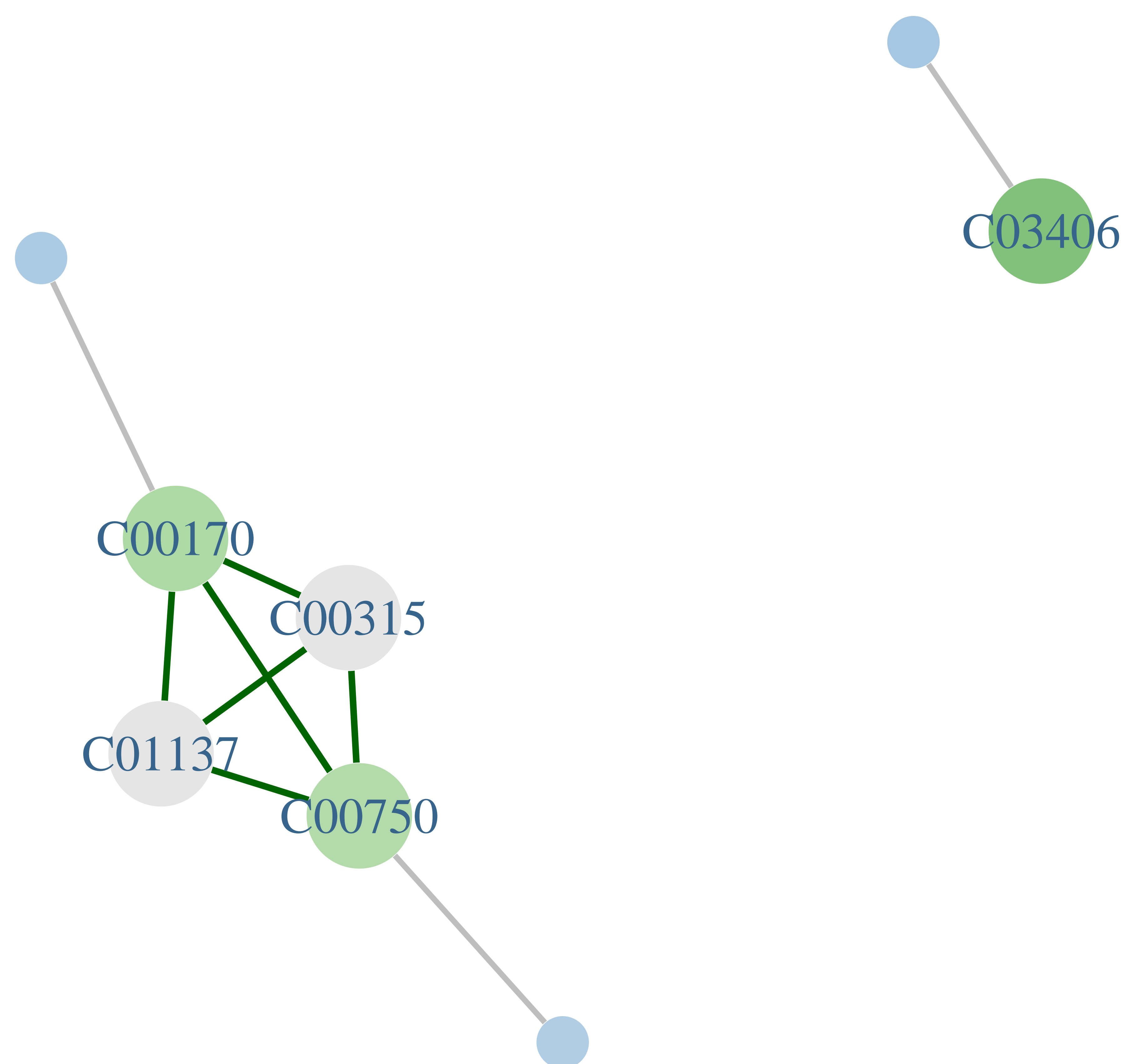
steroid hormone biosynthesis ; p-value: 0.041



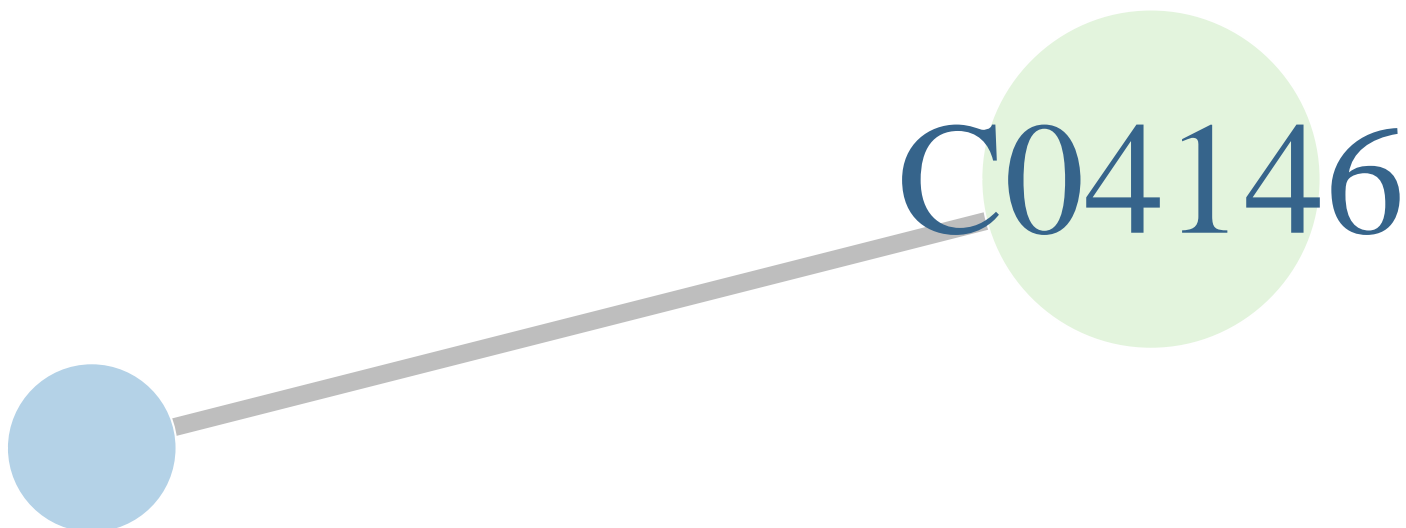
steroidogenesis ; p-value: 0.241



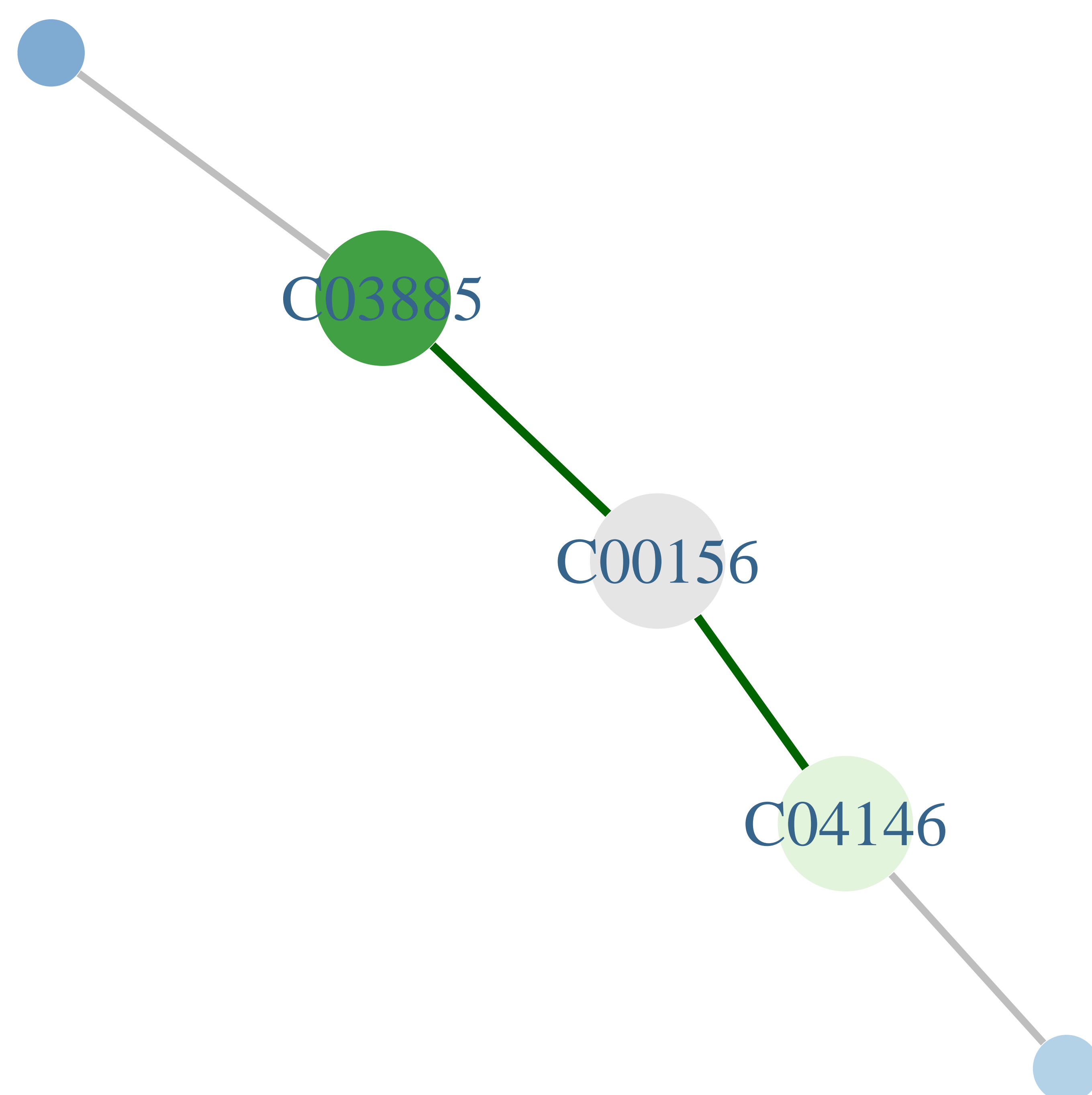
arginine and proline metabolism ; p-value: 0.364



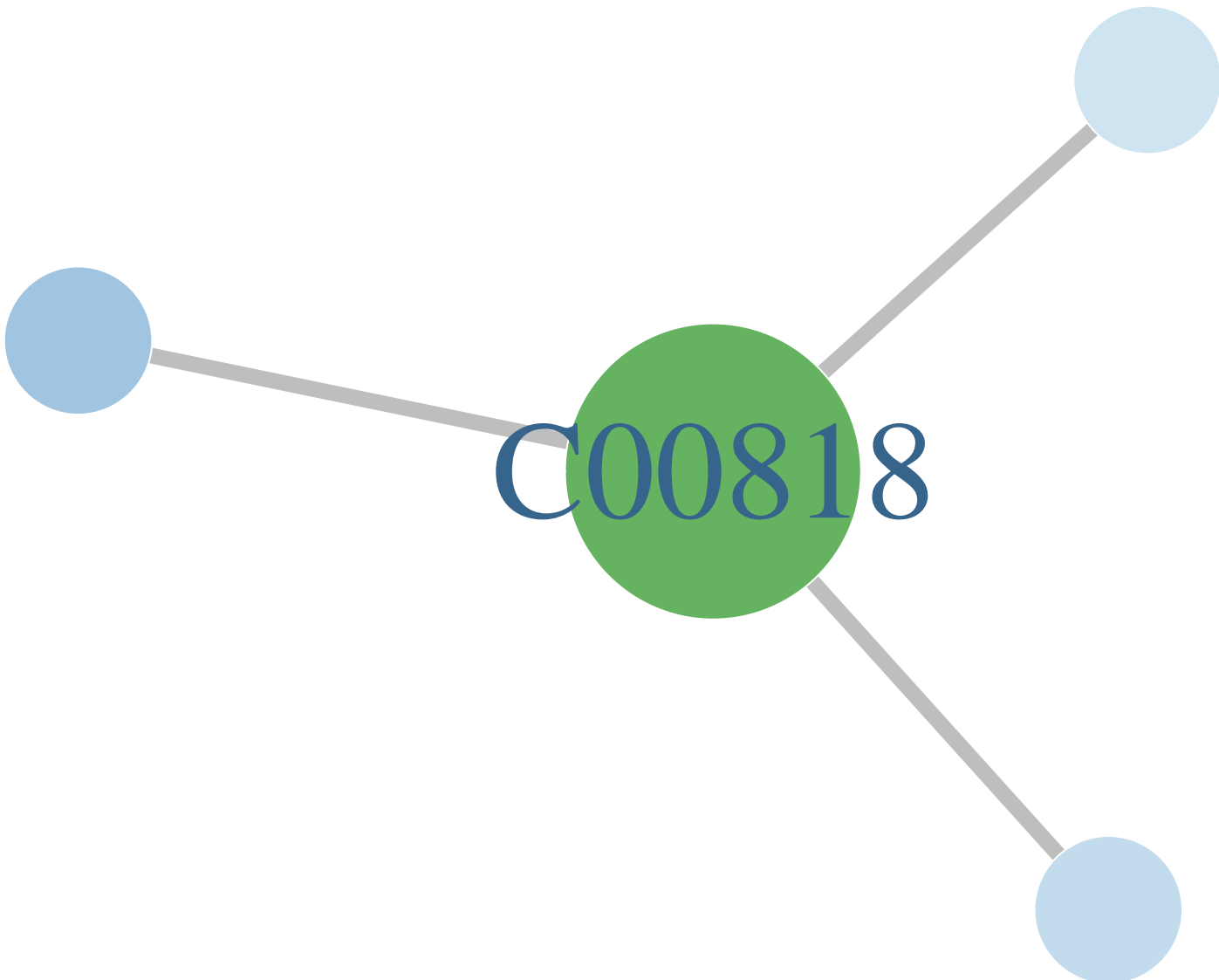
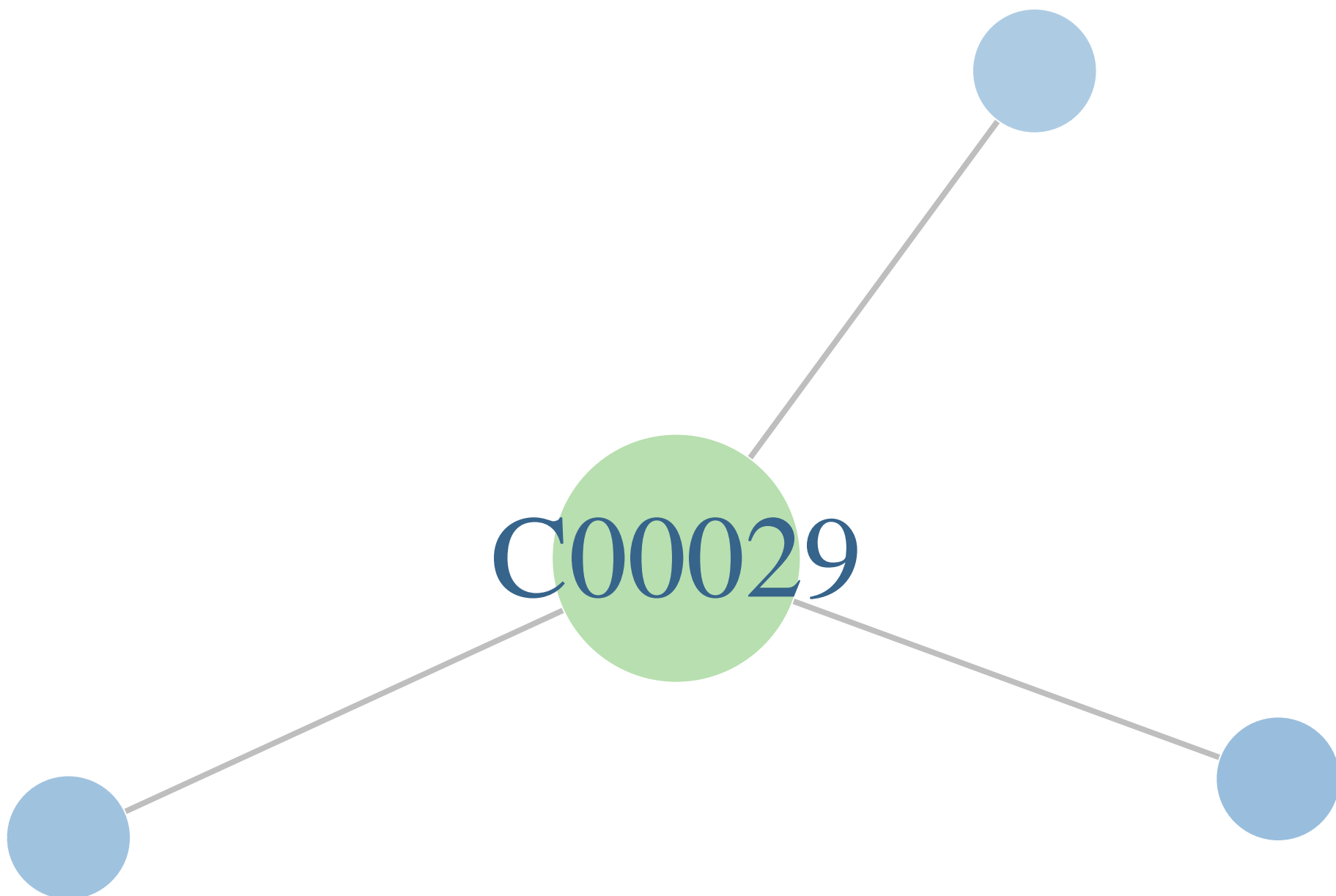
terpenoid backbone biosynthesis ; p-value: 0.219



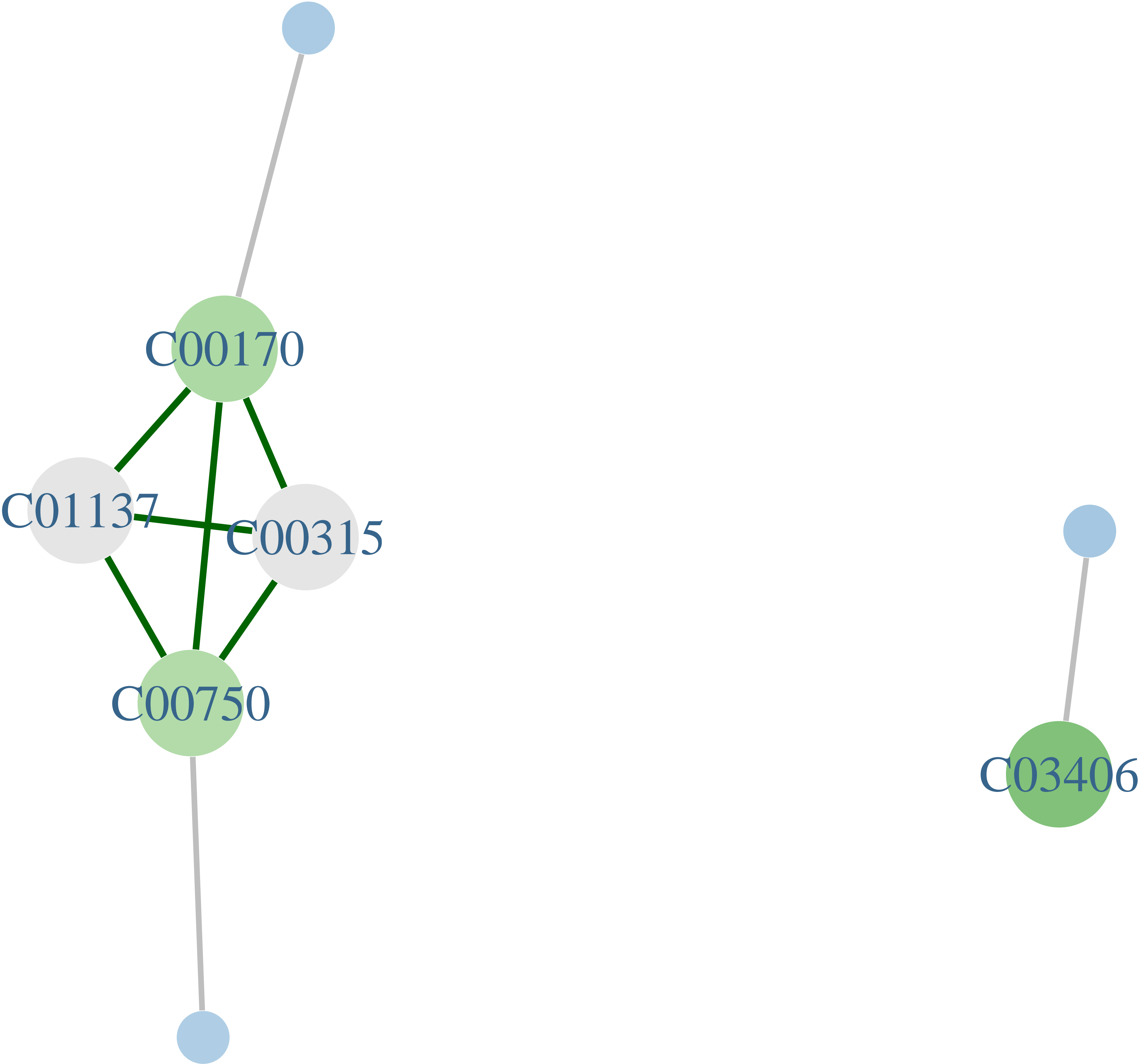
ubiquinone and other terpenoid–quinone biosynthesis ; p-value: 0.302



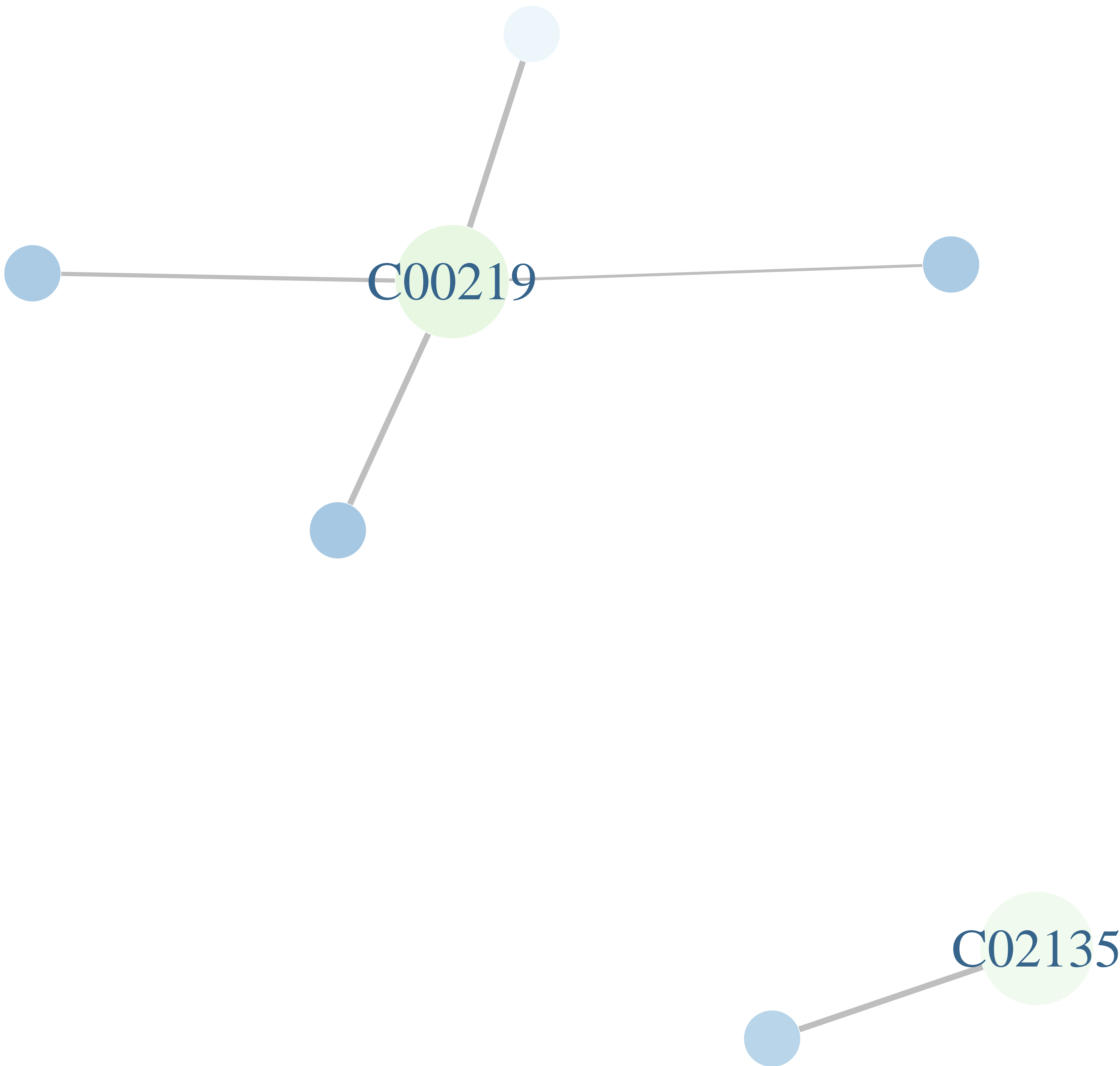
ascorbate and aldarate metabolism ; p-value: 0.031



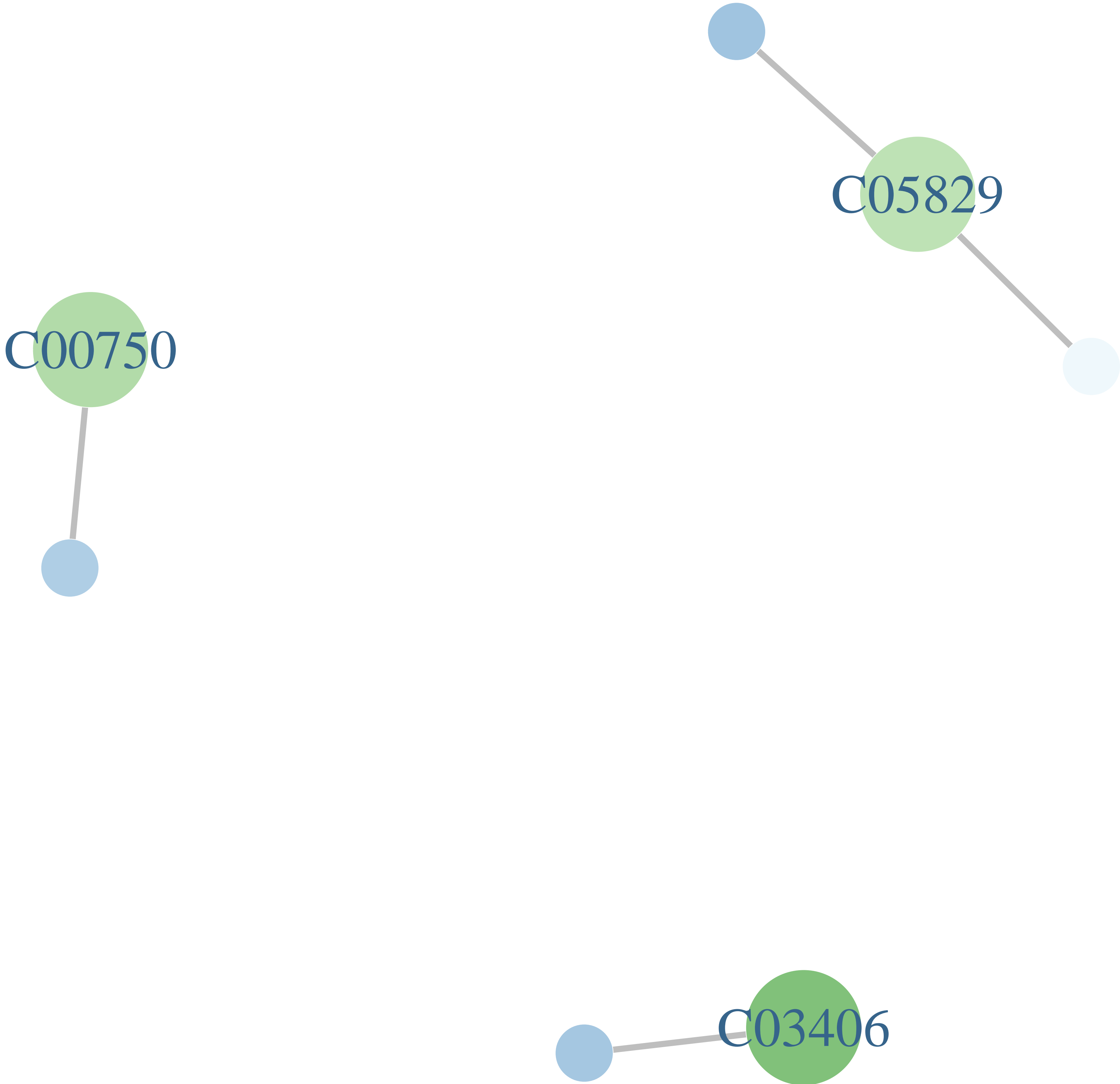
urea cycle/amino group metabolism ; p-value: 0.271



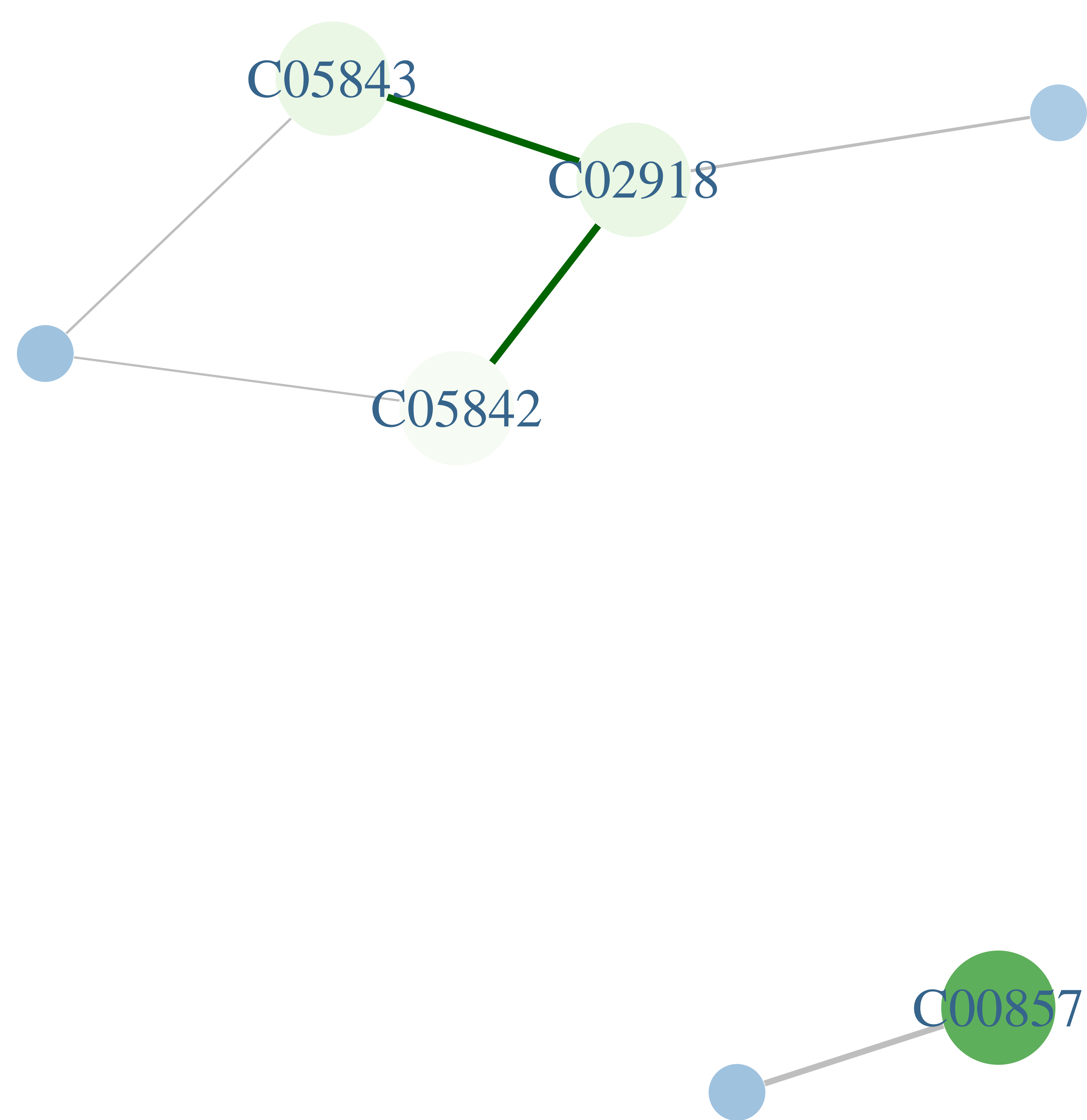
vascular smooth muscle contraction ; p-value: 0.158



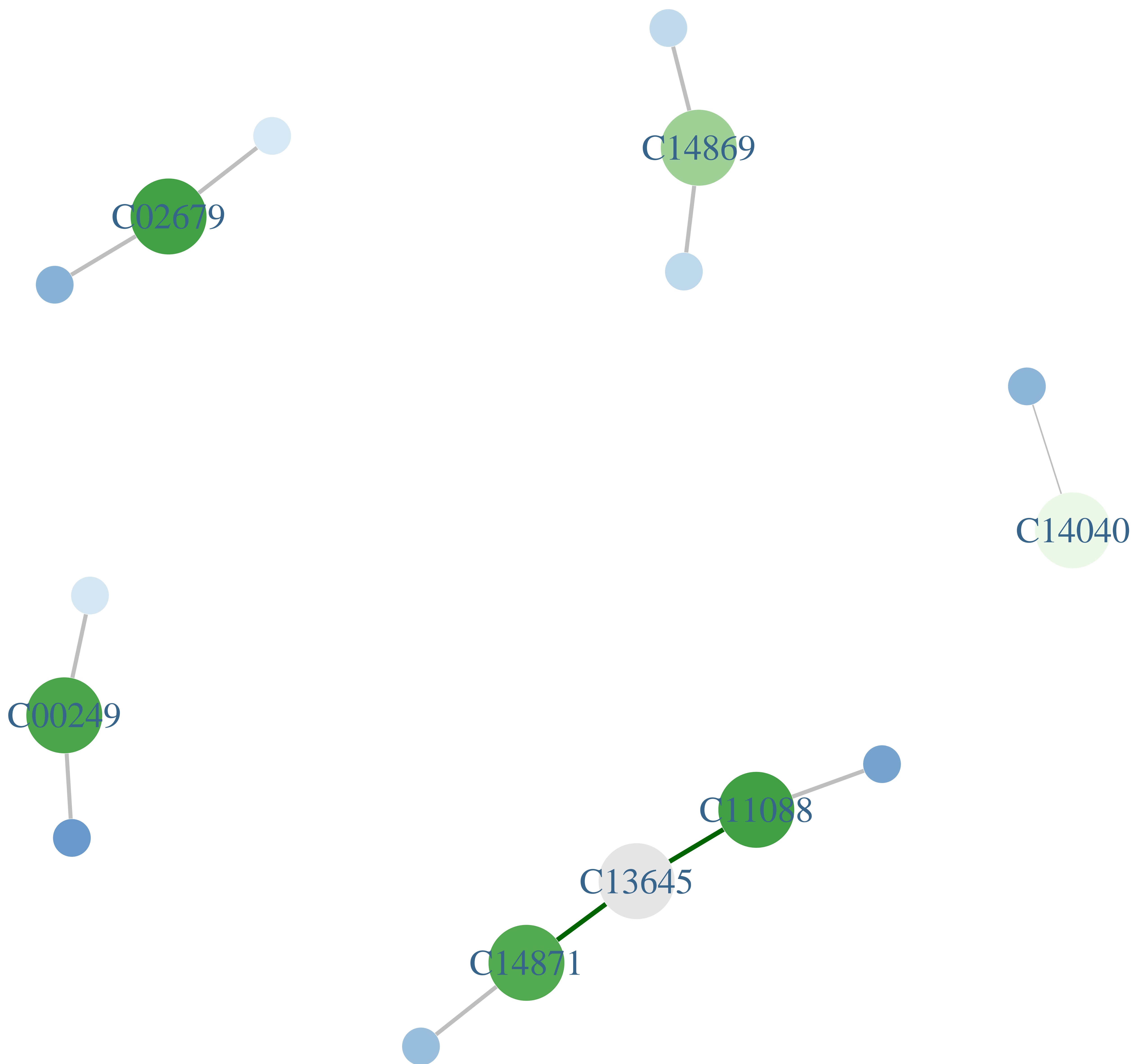
aspartate and asparagine metabolism ; p-value: 0.425



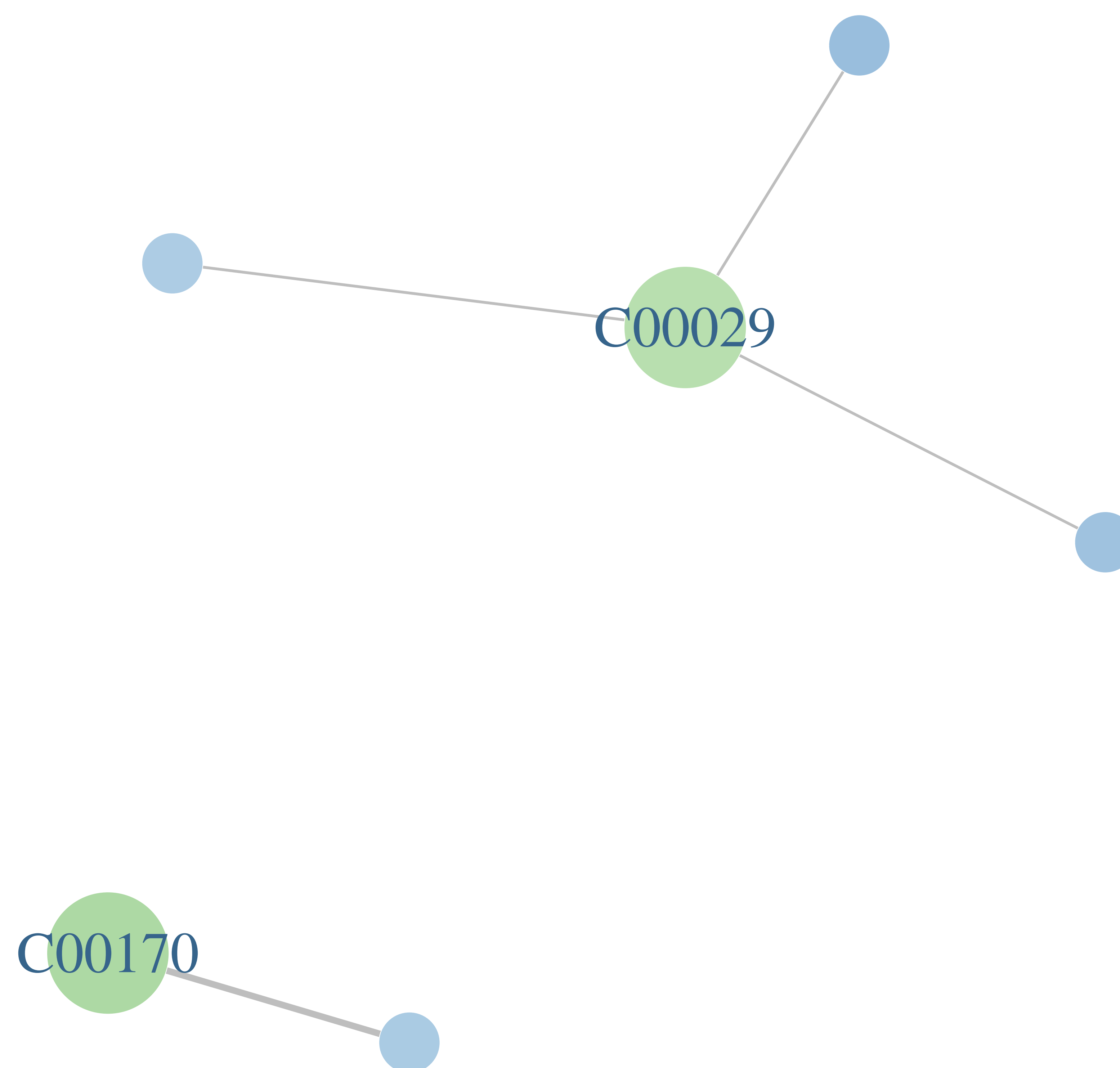
vitamin b3 (nicotinate and nicotinamide) metabolism ; p-value: 0.007



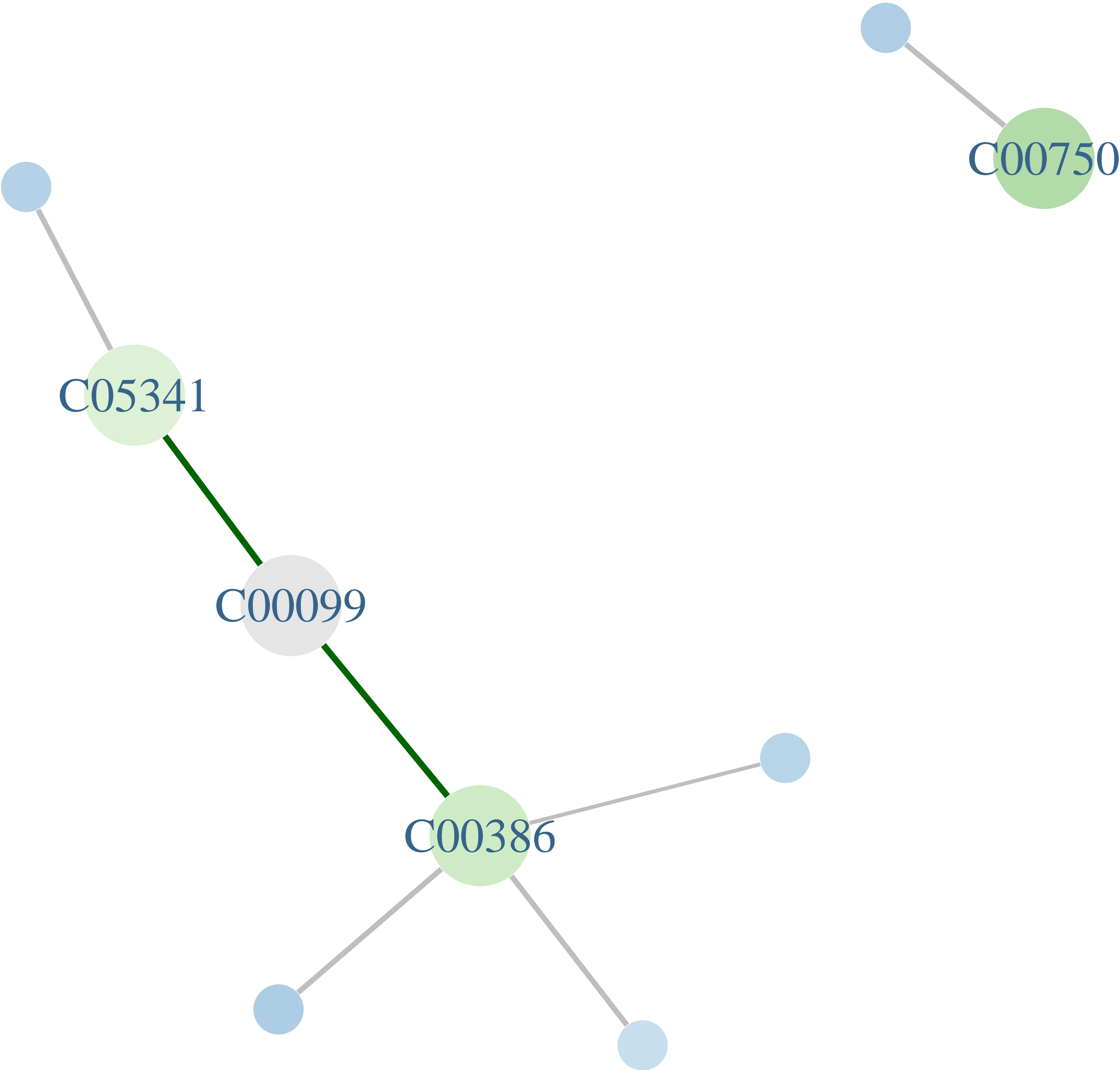
xenobiotics metabolism ; p-value: 0.031



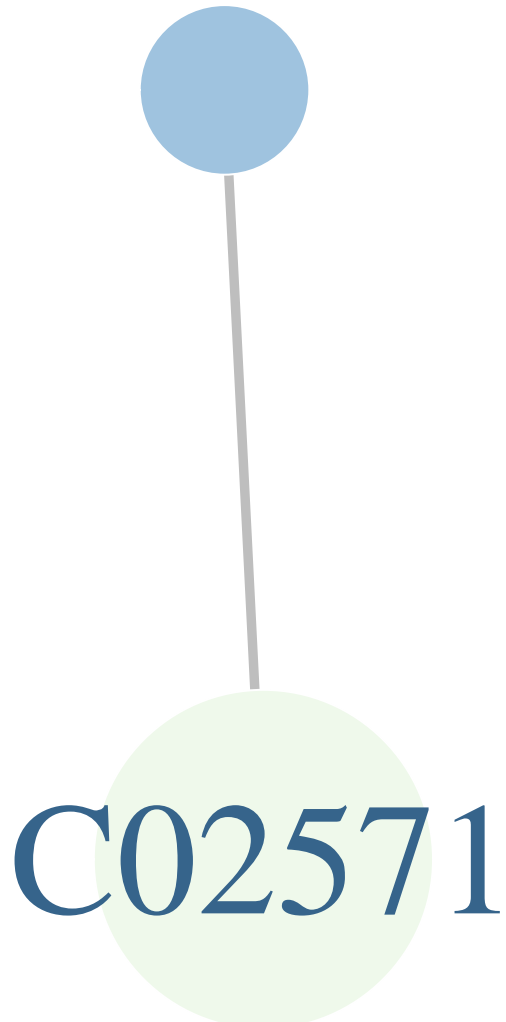
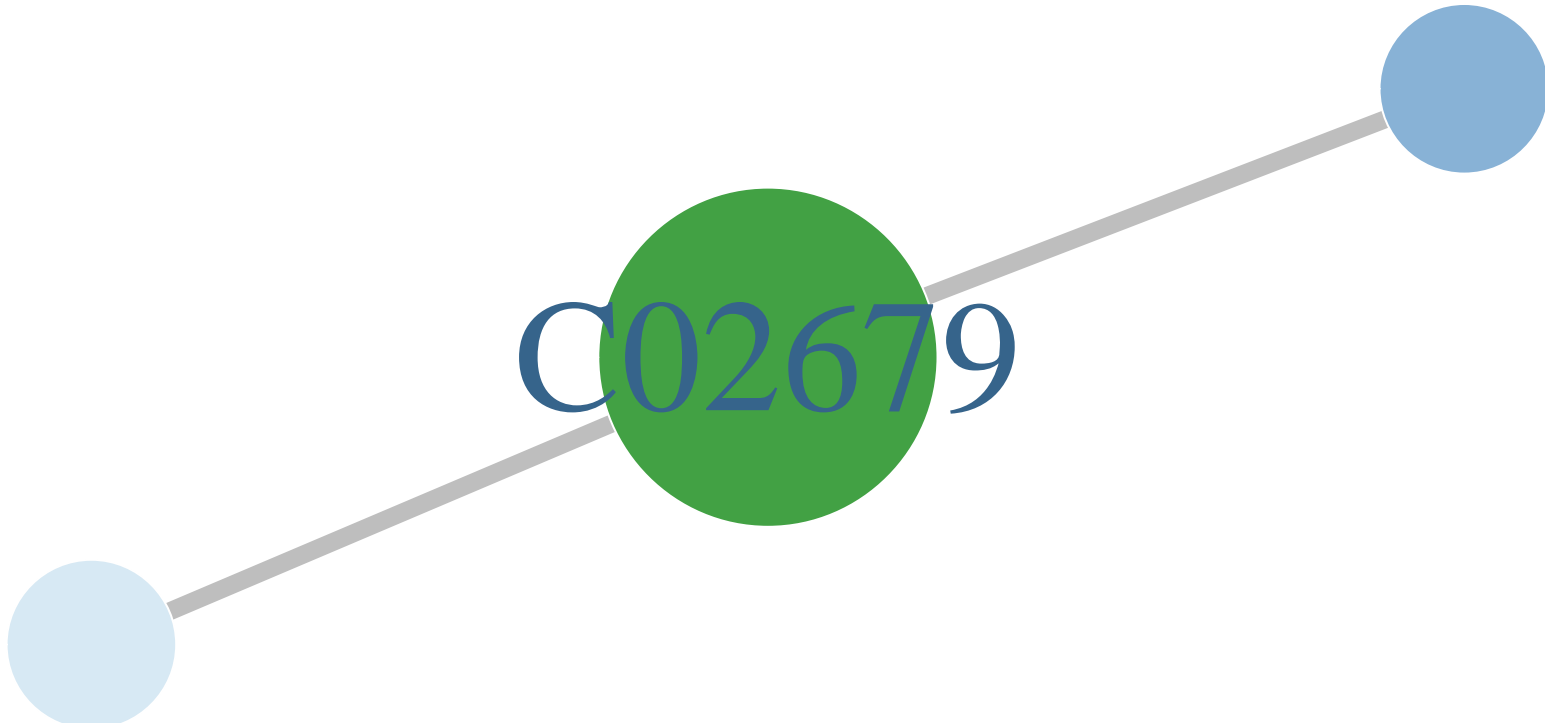
zeatin biosynthesis ; p-value: 0.027



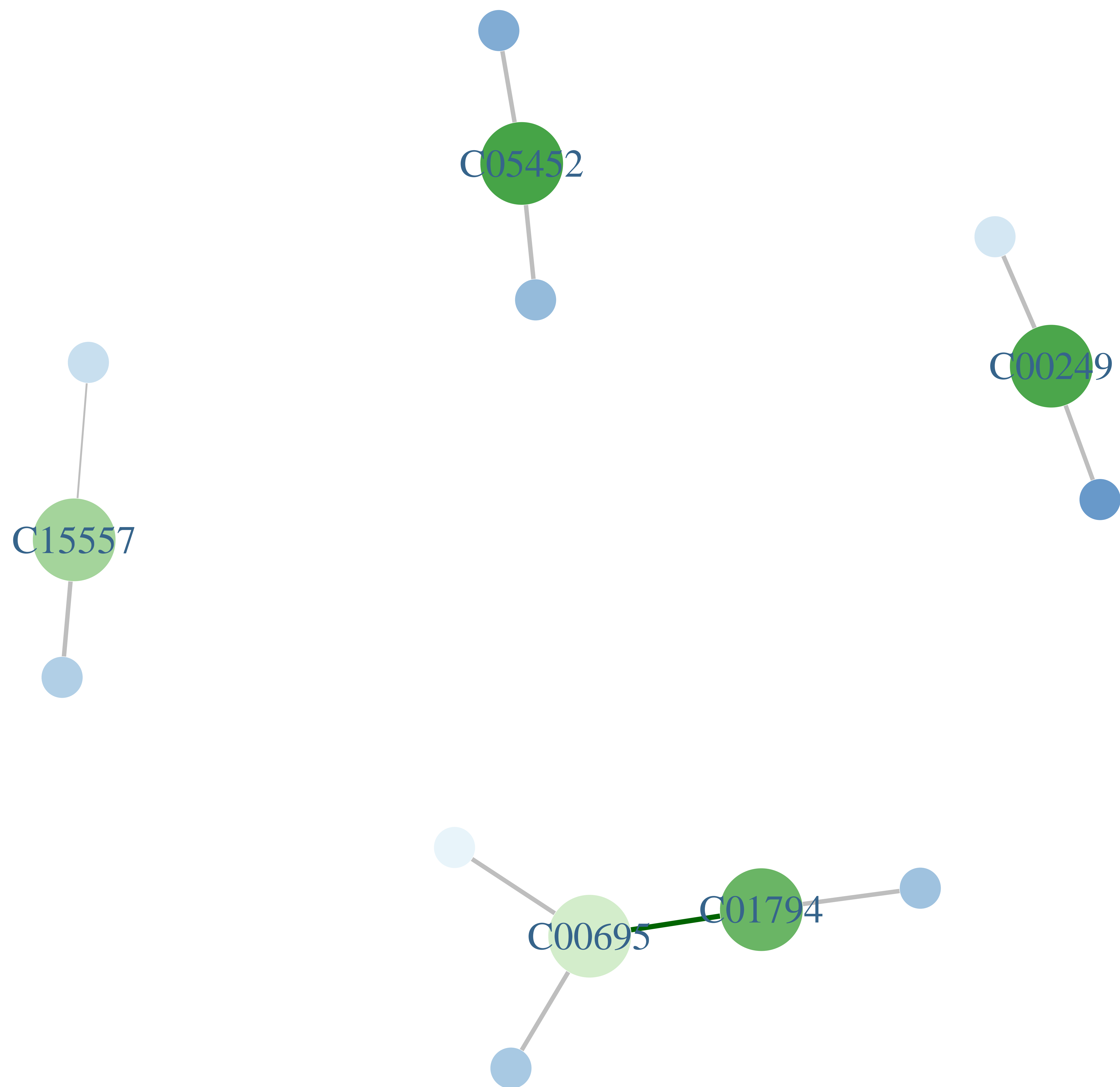
beta-alanine metabolism ; p-value: 0.155



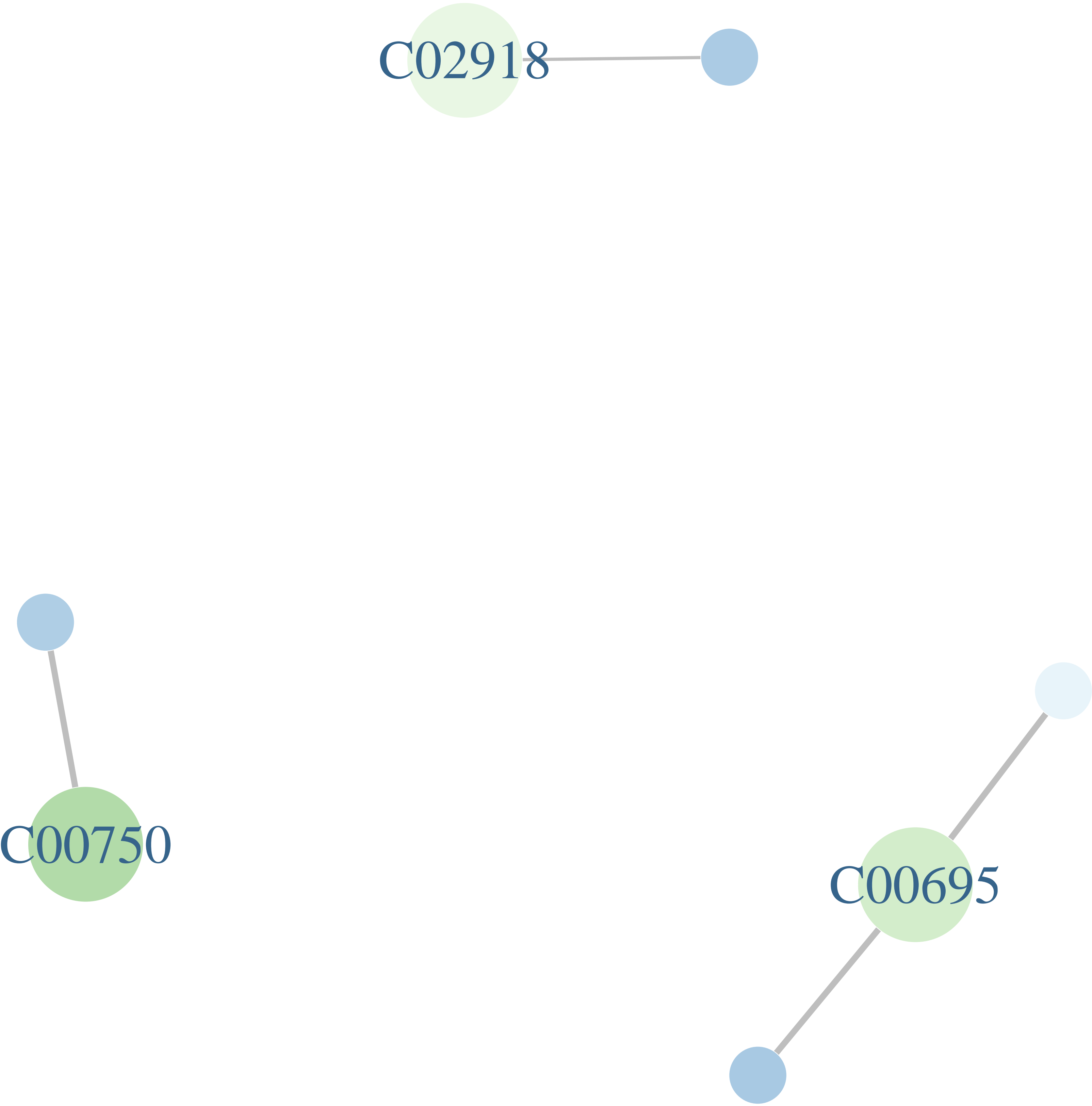
beta oxidation of very long chain fatty acids ; p-value: 0.003



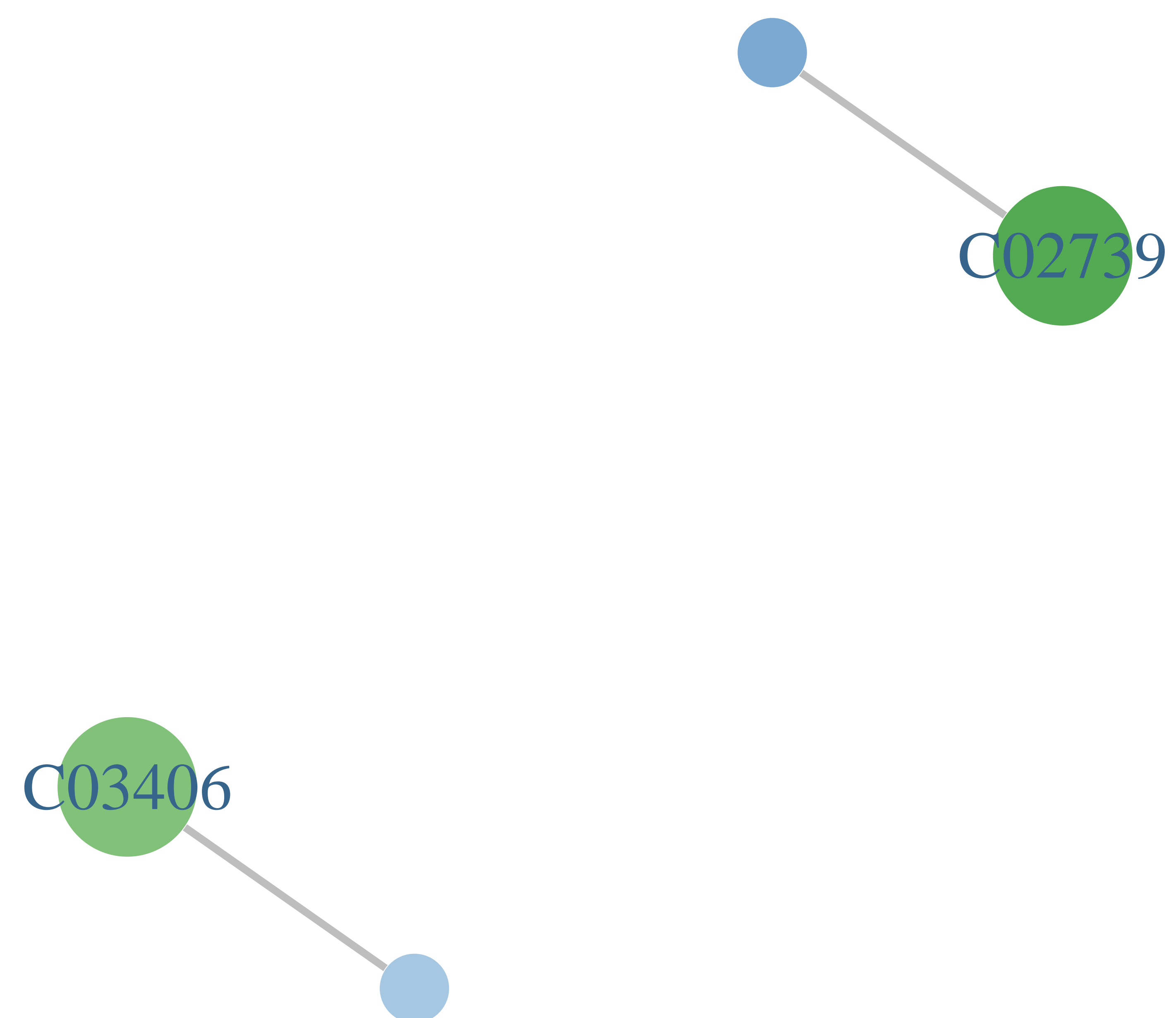
bile acid biosynthesis ; p-value: 0.105



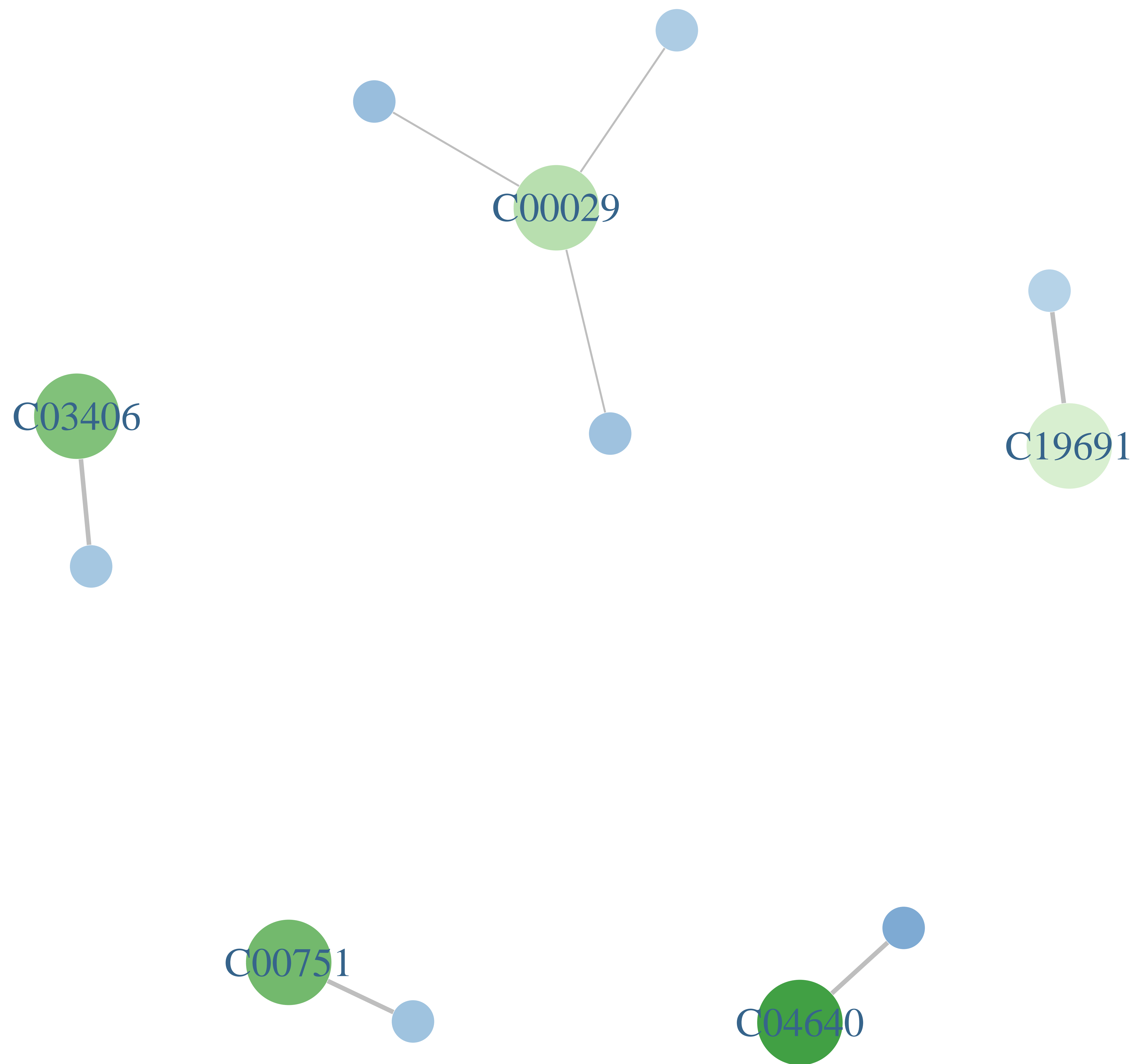
bile secretion ; p-value: 0.318



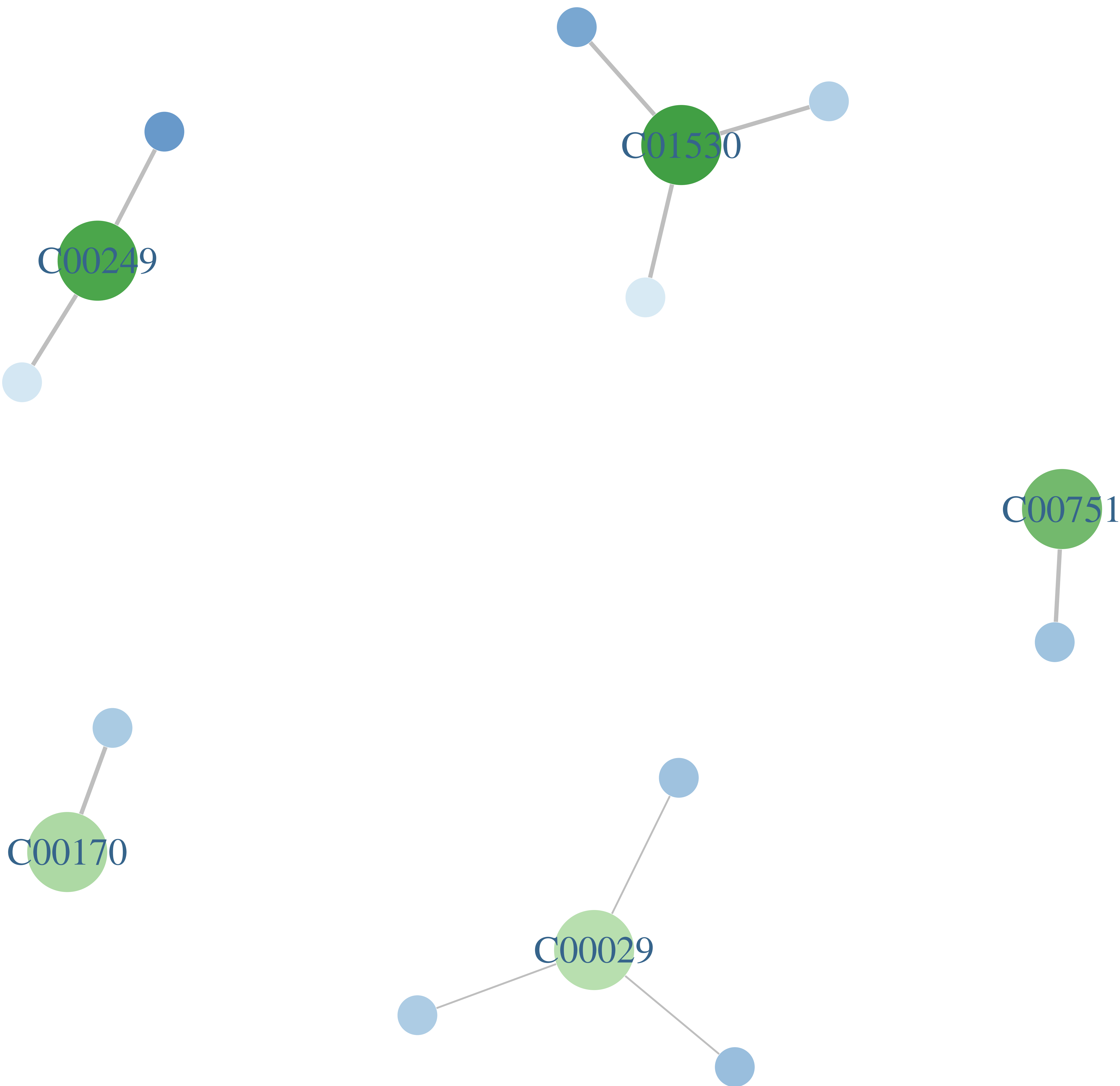
biosynthesis of amino acids ; p-value: 0.907



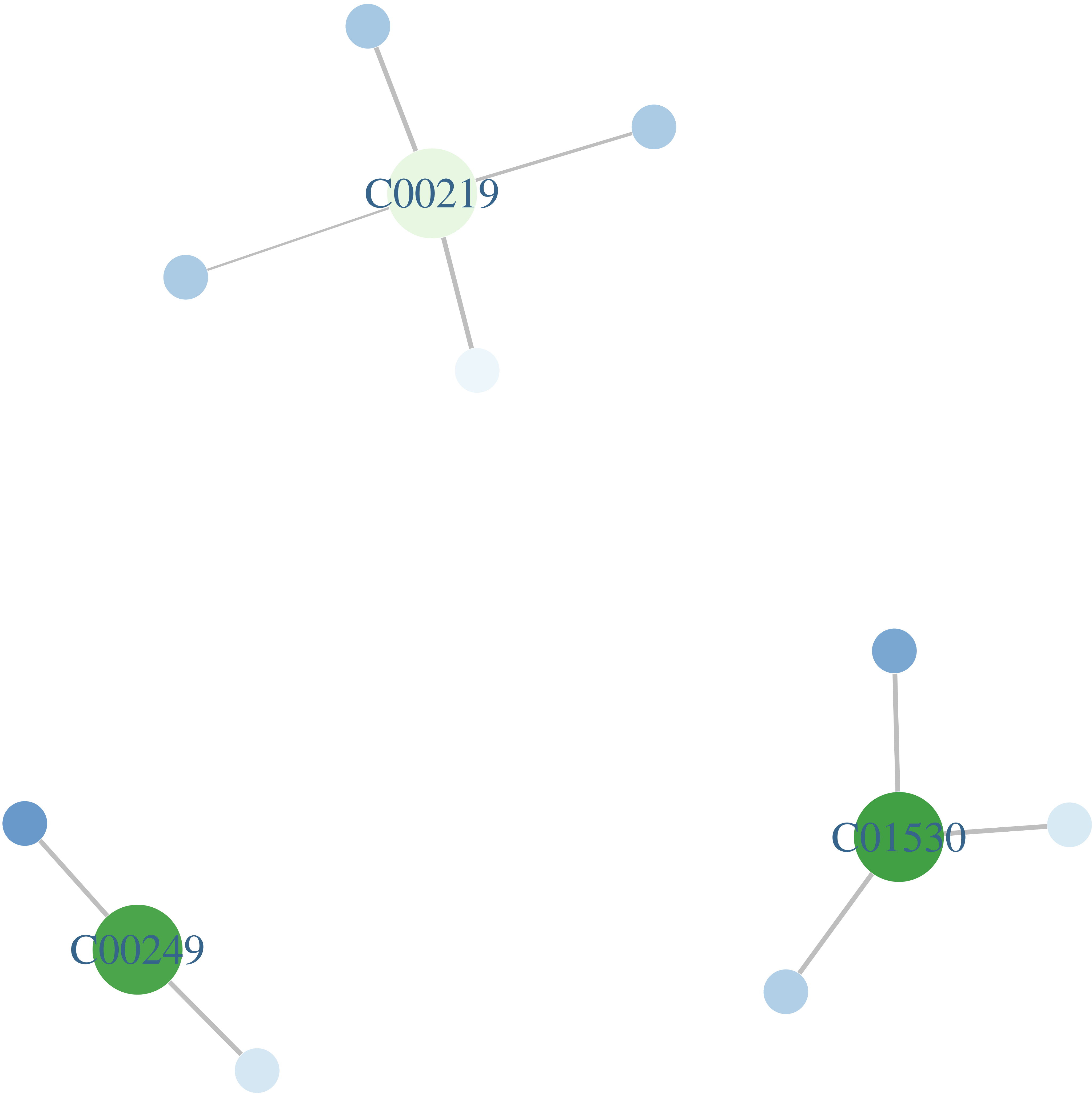
biosynthesis of antibiotics ; p-value: 0.893



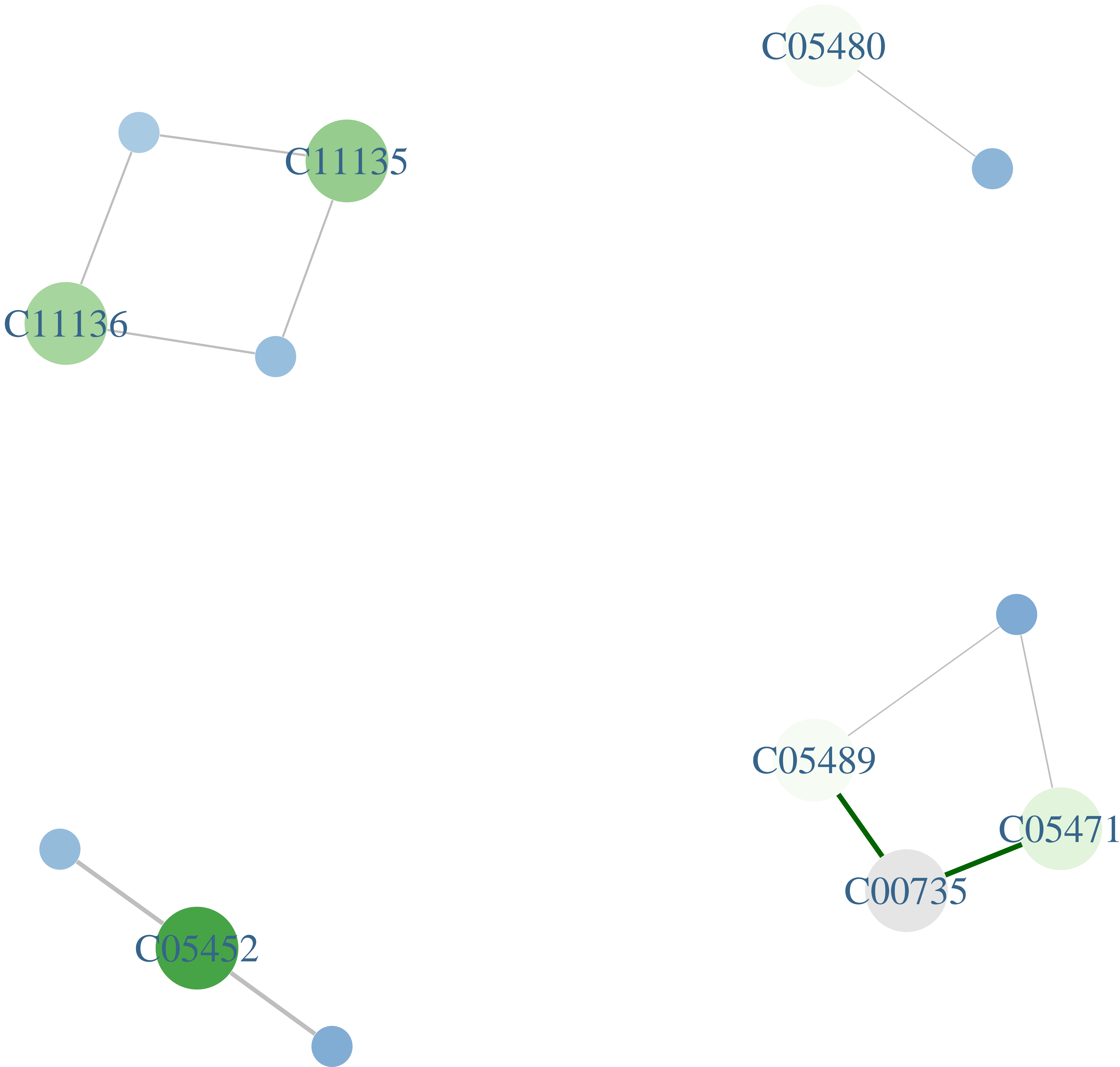
biosynthesis of plant secondary metabolites ; p-value: 0.34



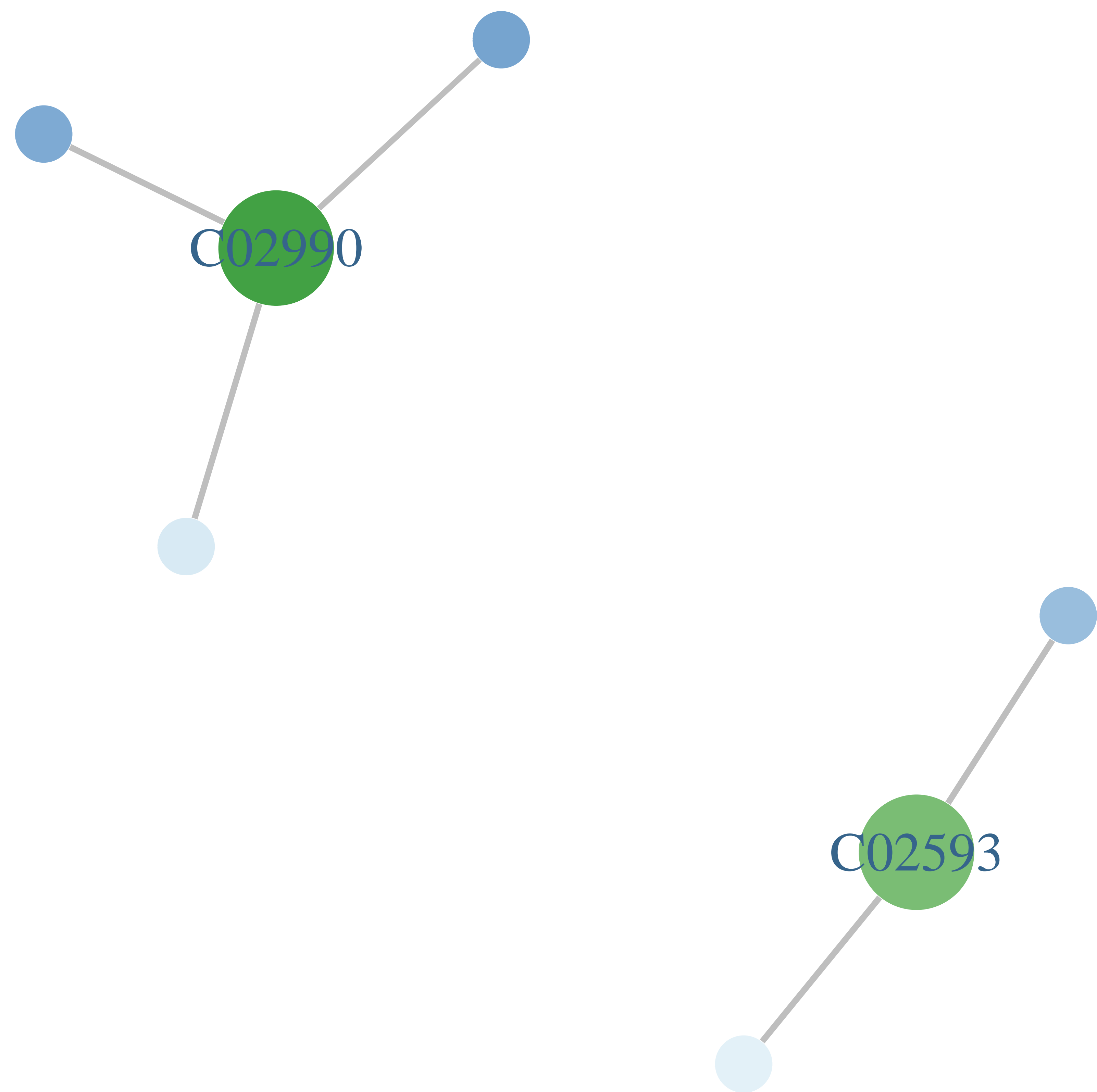
biosynthesis of unsaturated fatty acids ; p-value: 0.083



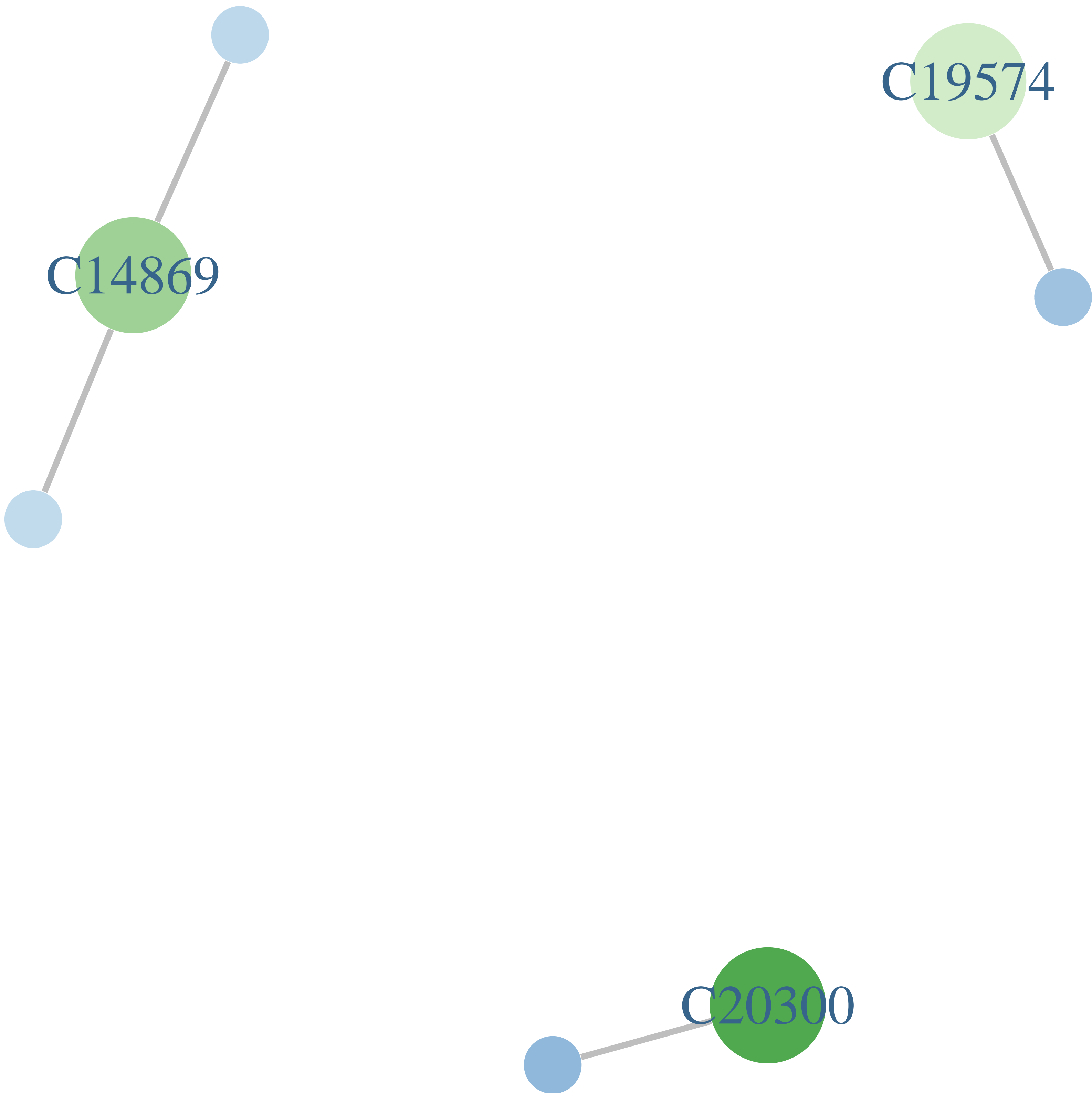
c21-steroid hormone biosynthesis and metabolism ; p-value: 0.115



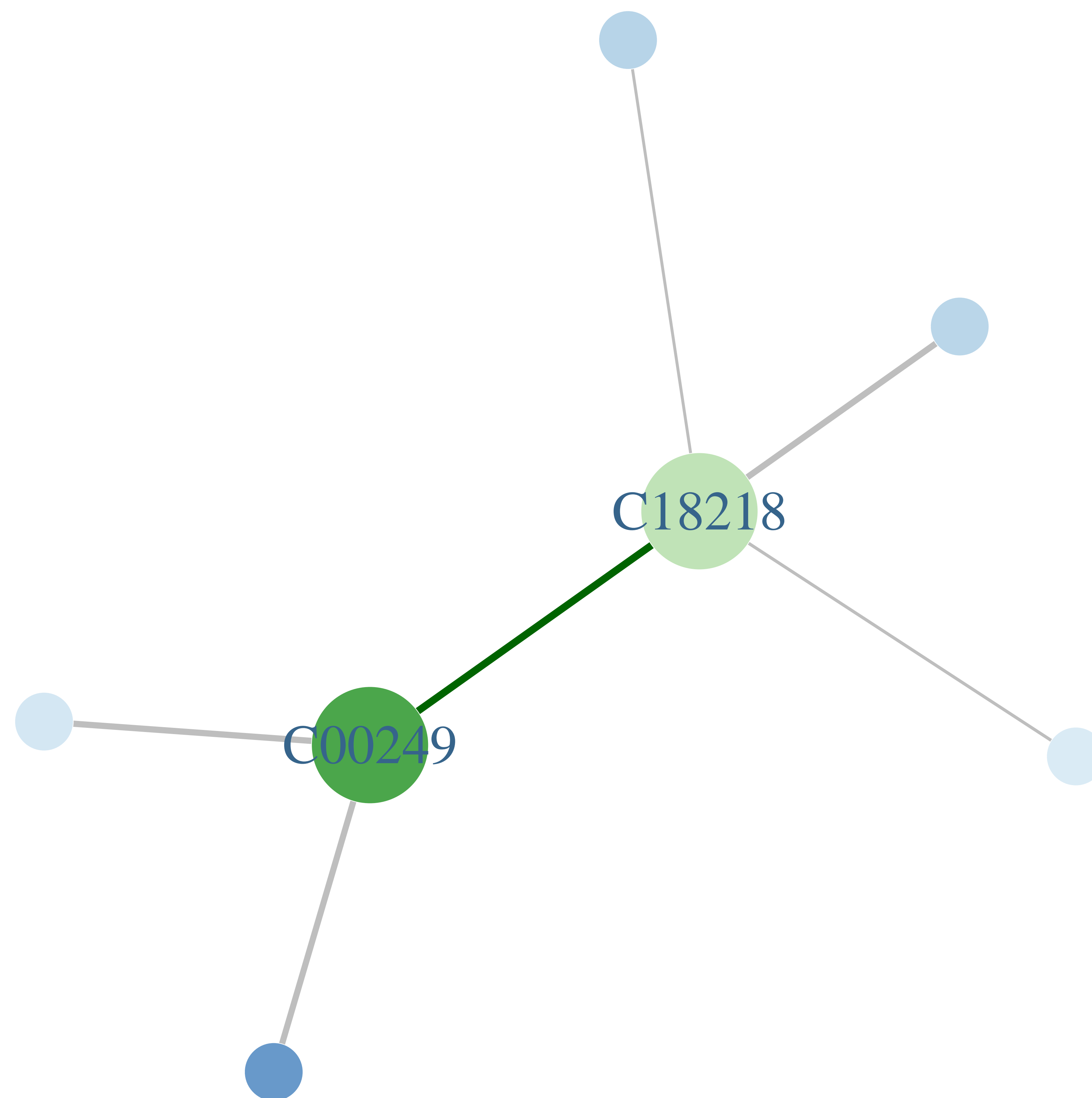
carnitine shuttle ; p-value: 0.178



chemical carcinogenesis ; p-value: 0.226

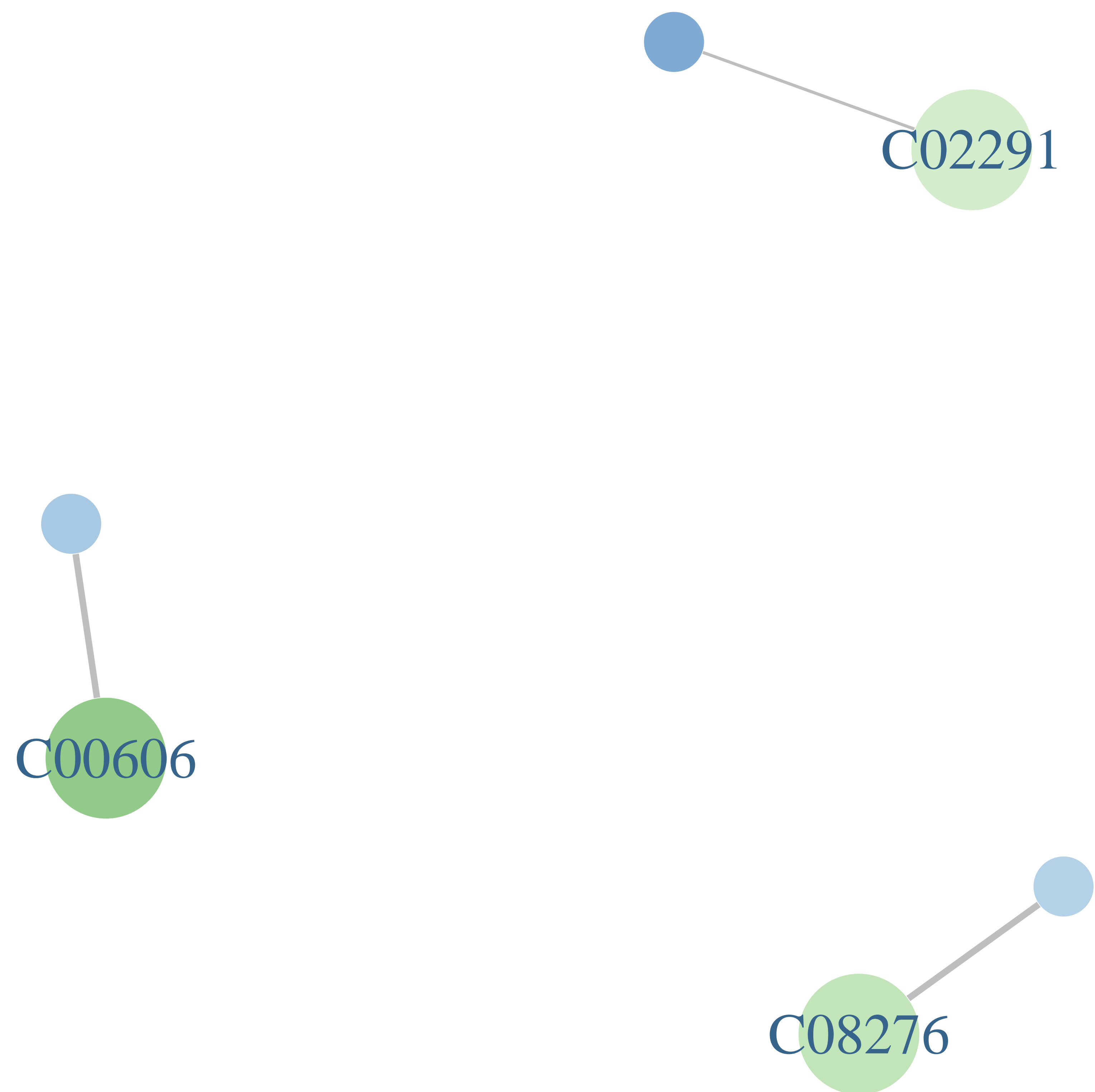


cutin, suberine and wax biosynthesis ; p-value: 0.009

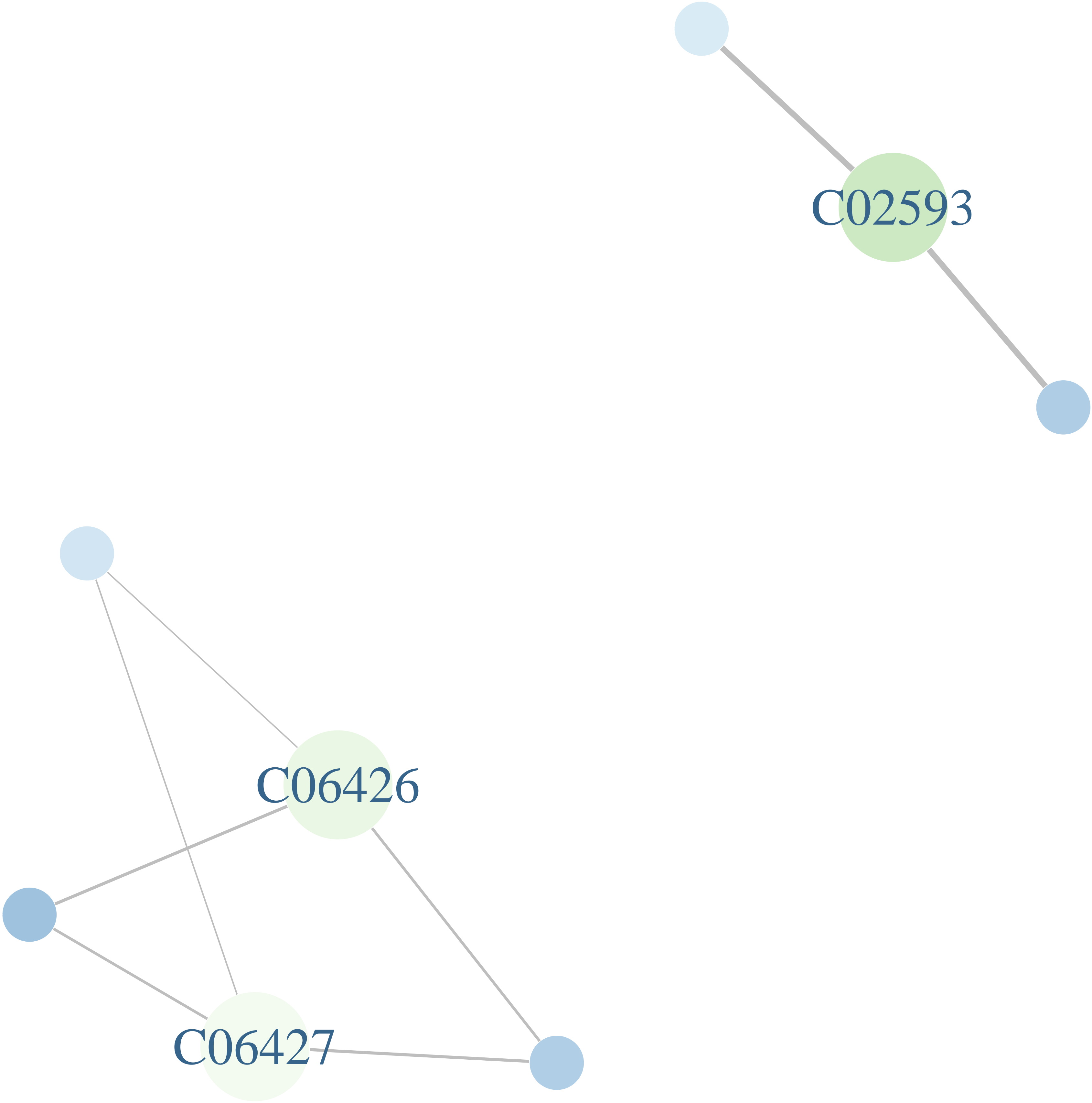


Mouse Brain Metabolomics Data
Thalamus Week 16 v.s. Week 59
Pathway Plots

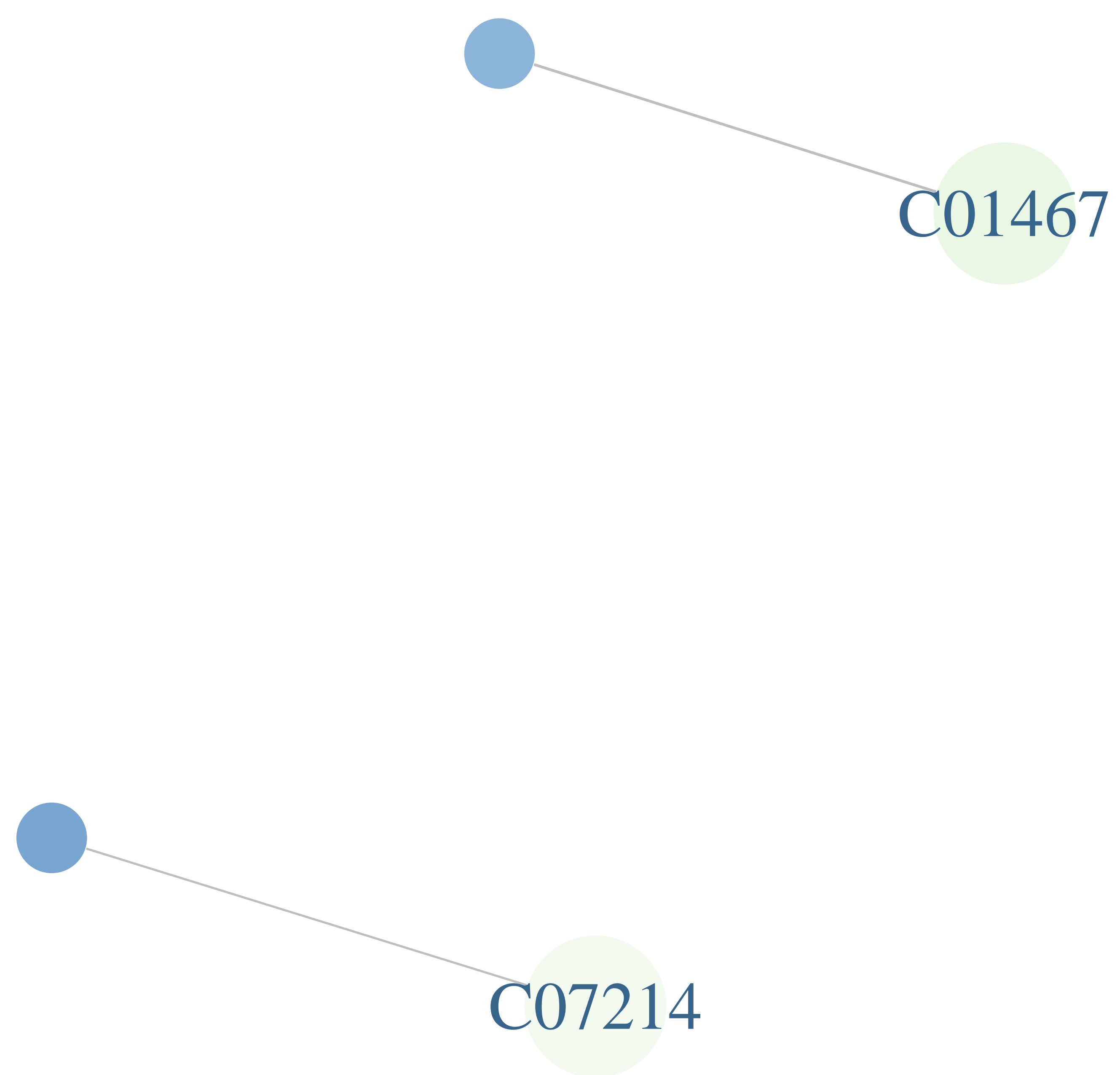
cysteine and methionine metabolism ; p-value: 0.124



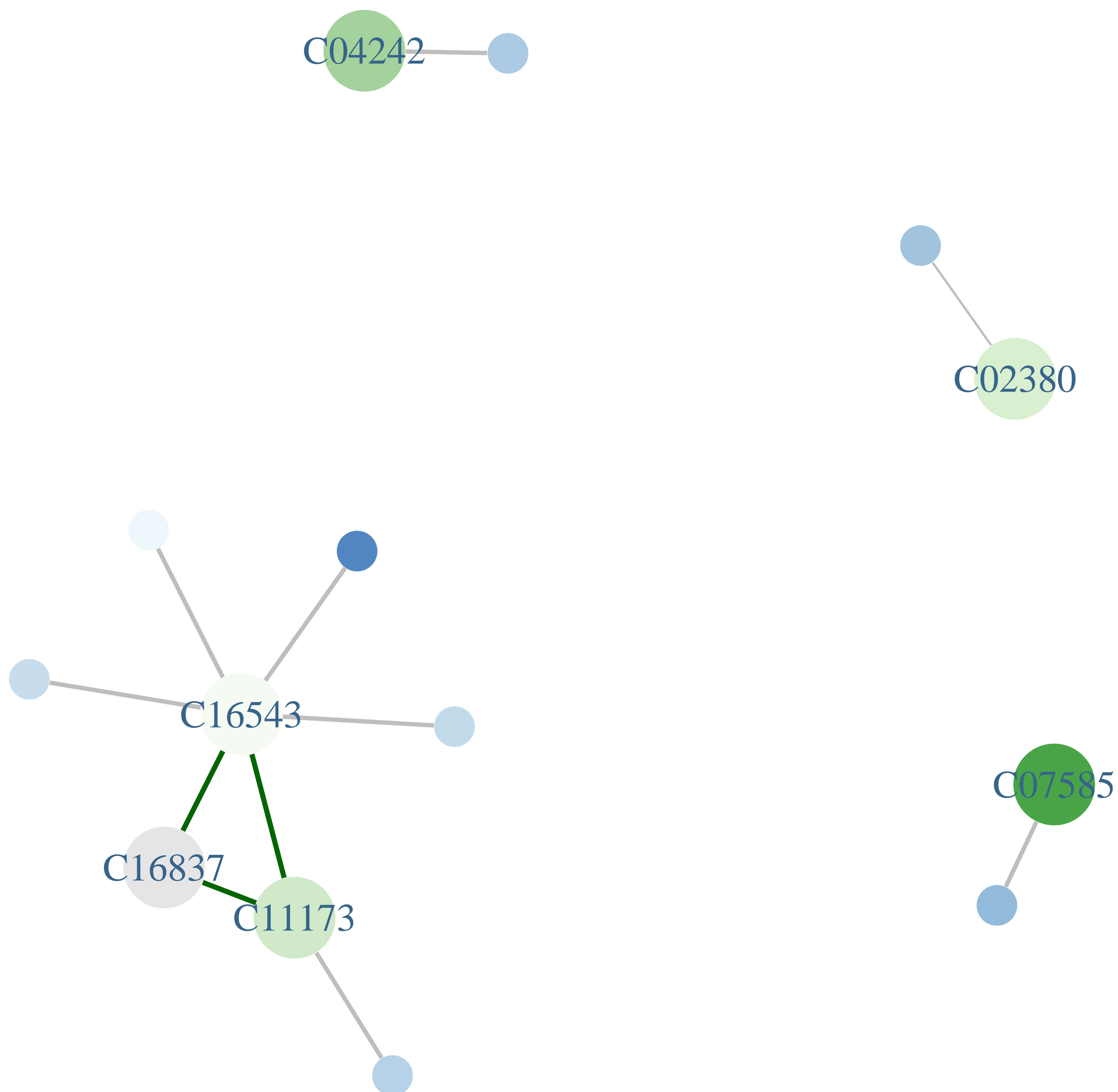
de novo fatty acid biosynthesis ; p-value: 0.15



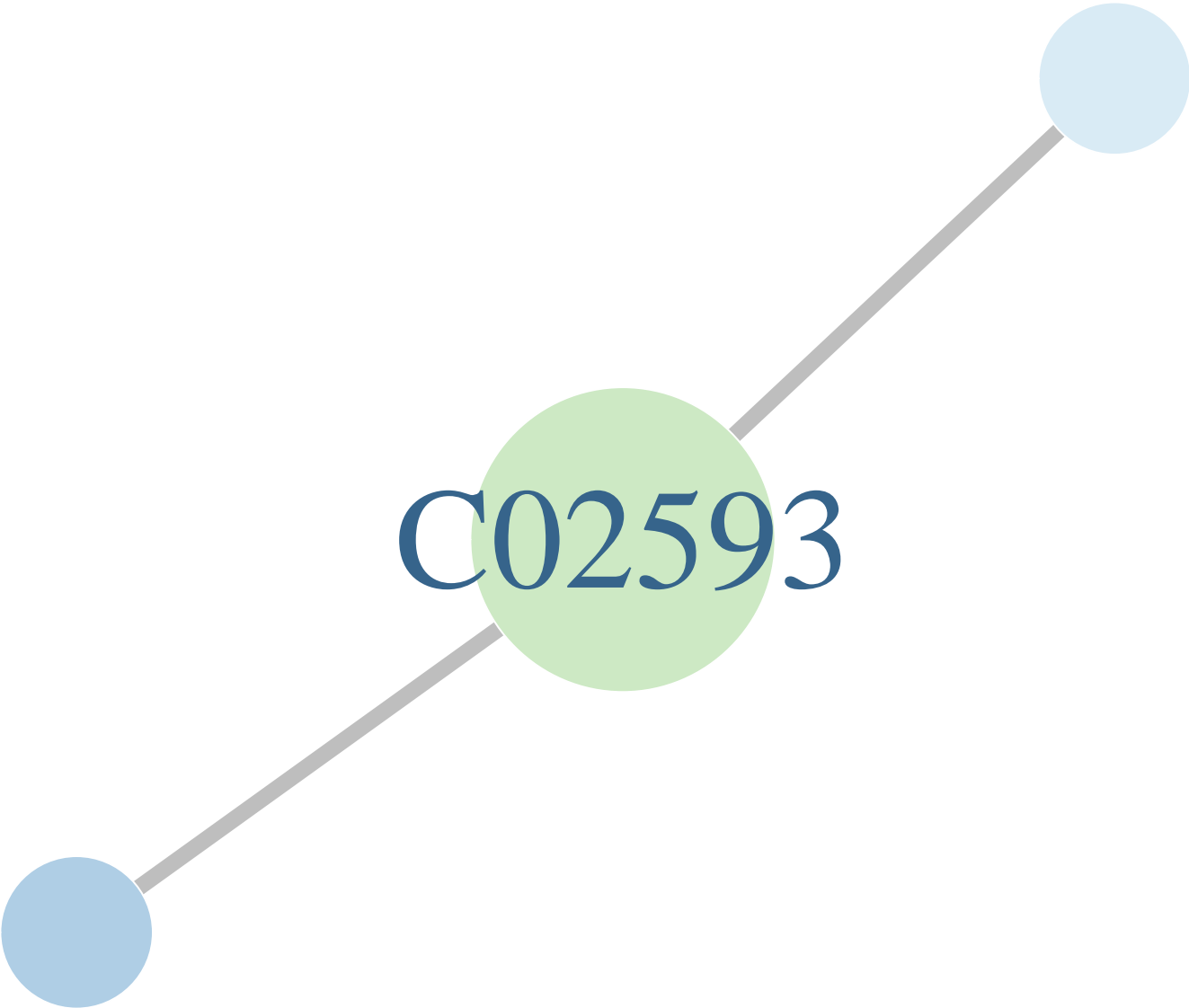
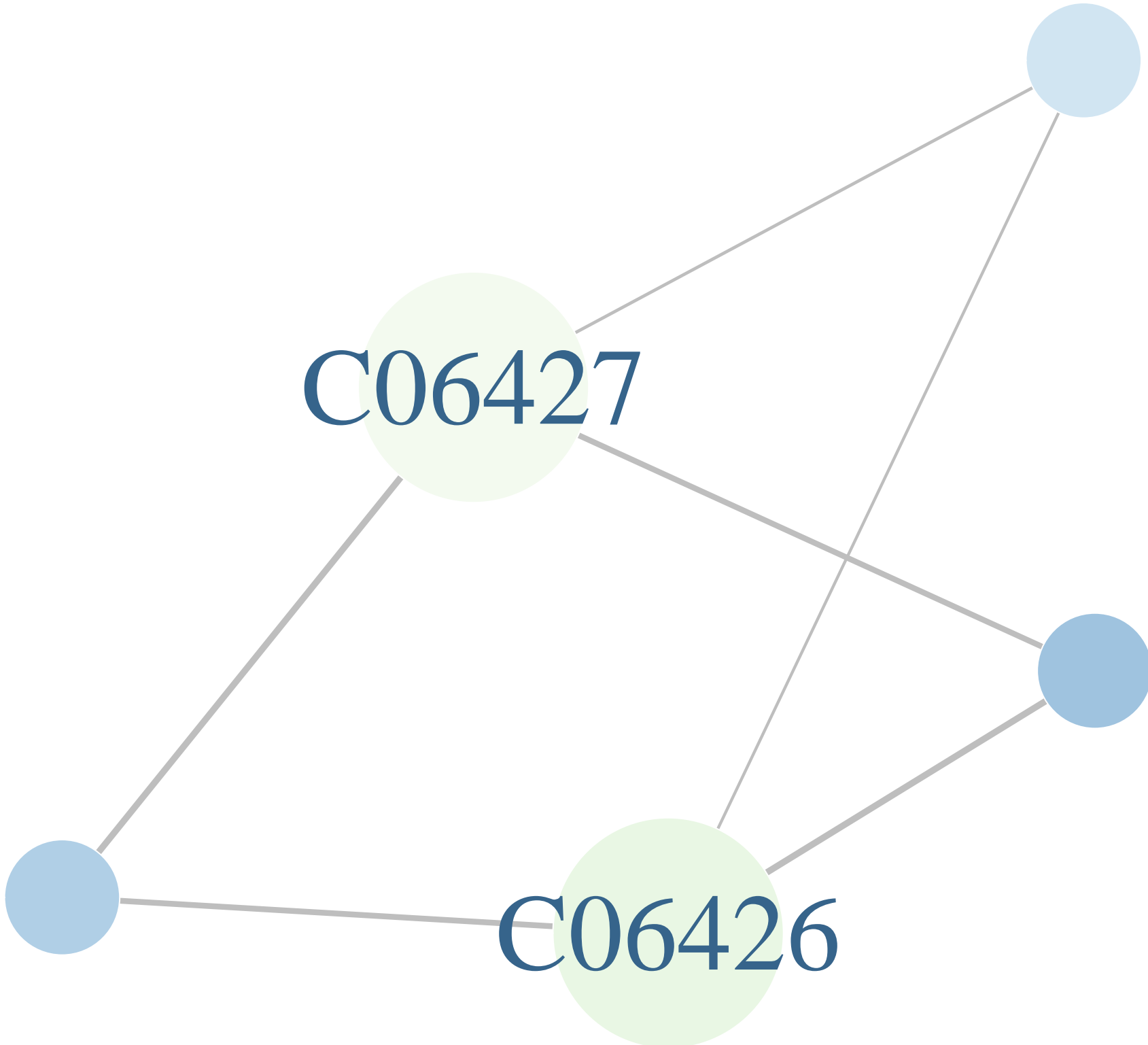
degradation of aromatic compounds ; p-value: 0.434



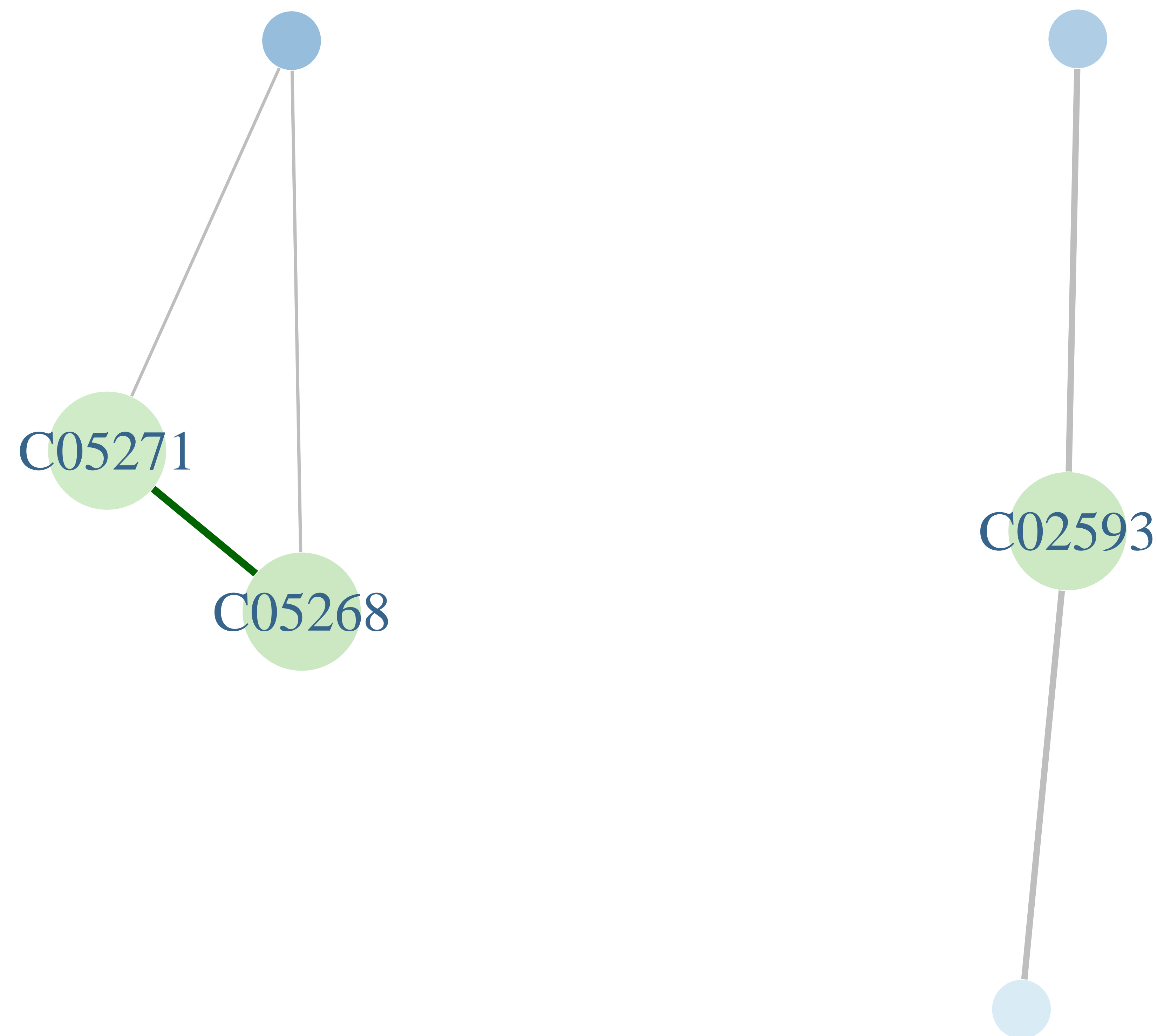
drug metabolism – other enzymes ; p-value: 0.011



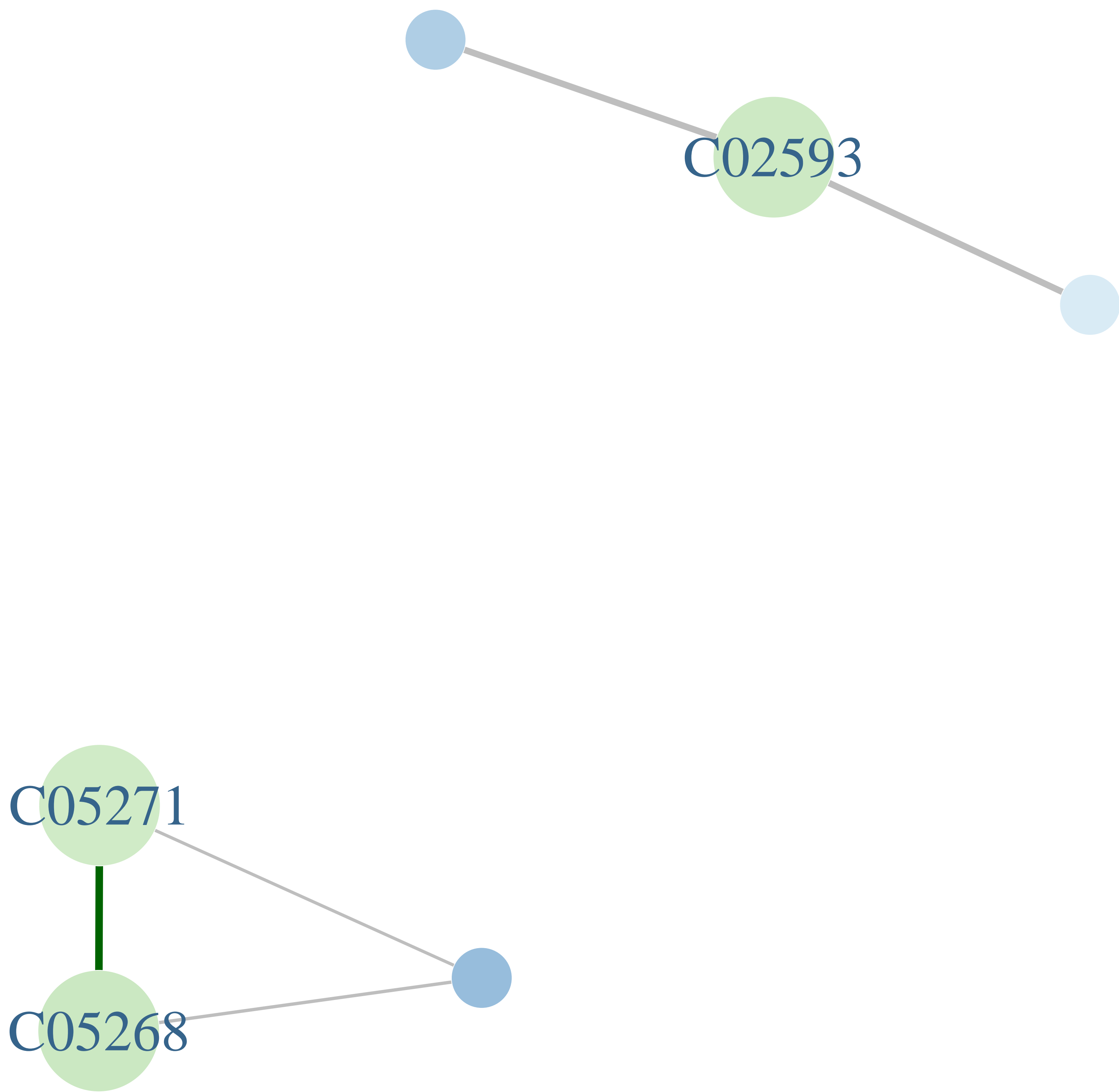
fatty acid activation ; p-value: 0.15



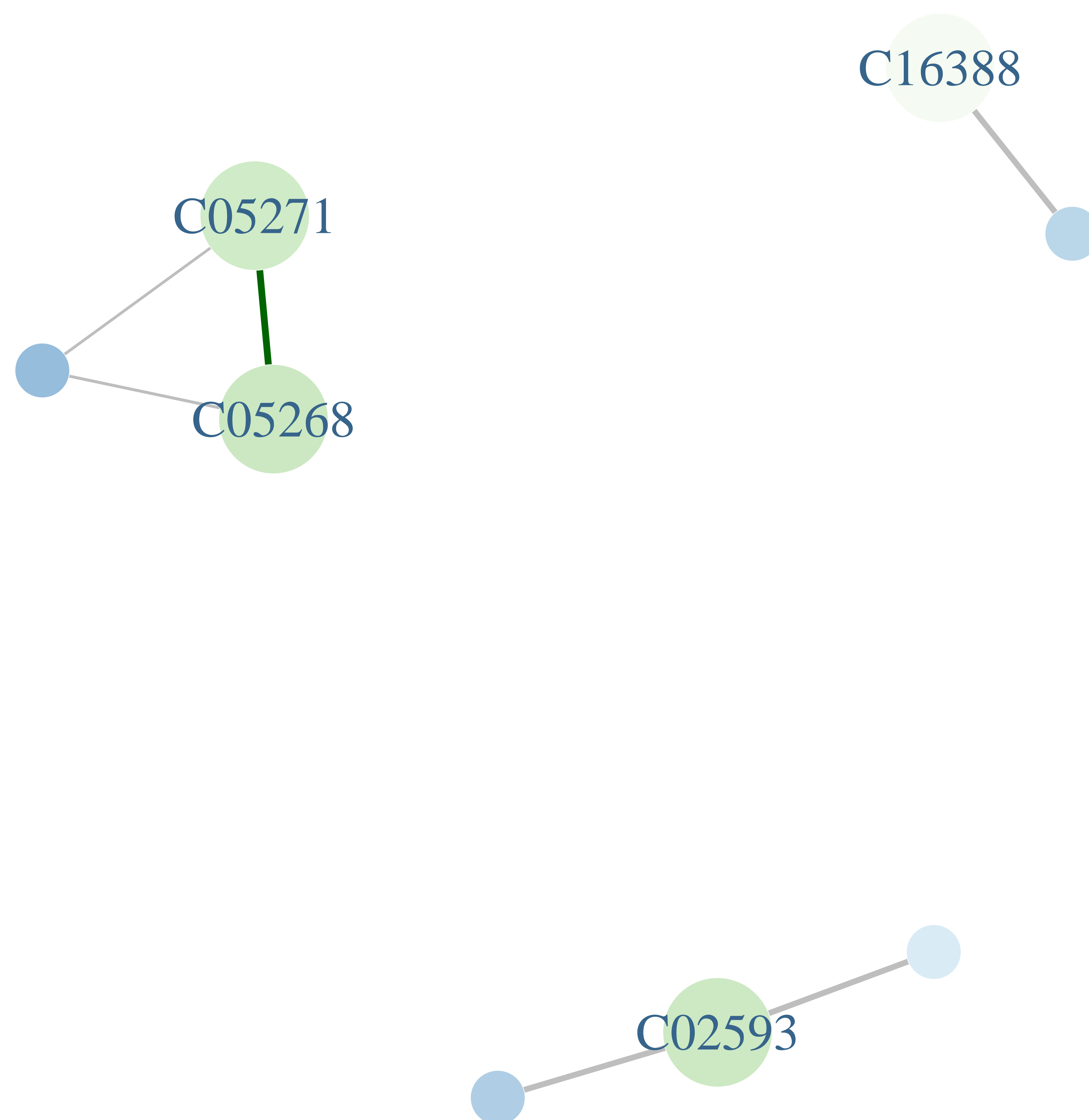
fatty acid degradation ; p-value: 0.263



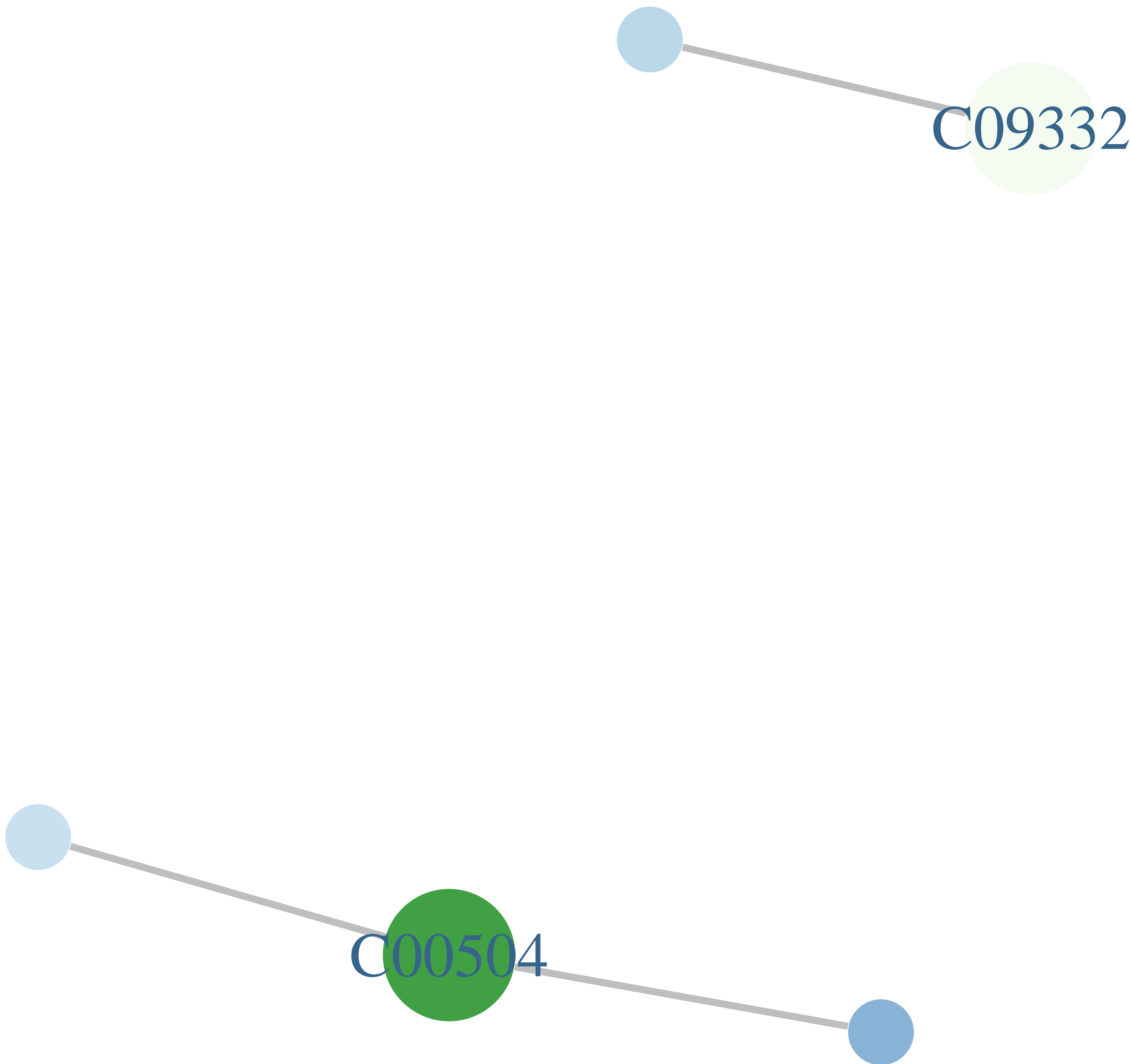
fatty acid elongation in mitochondria ; p-value: 0.163



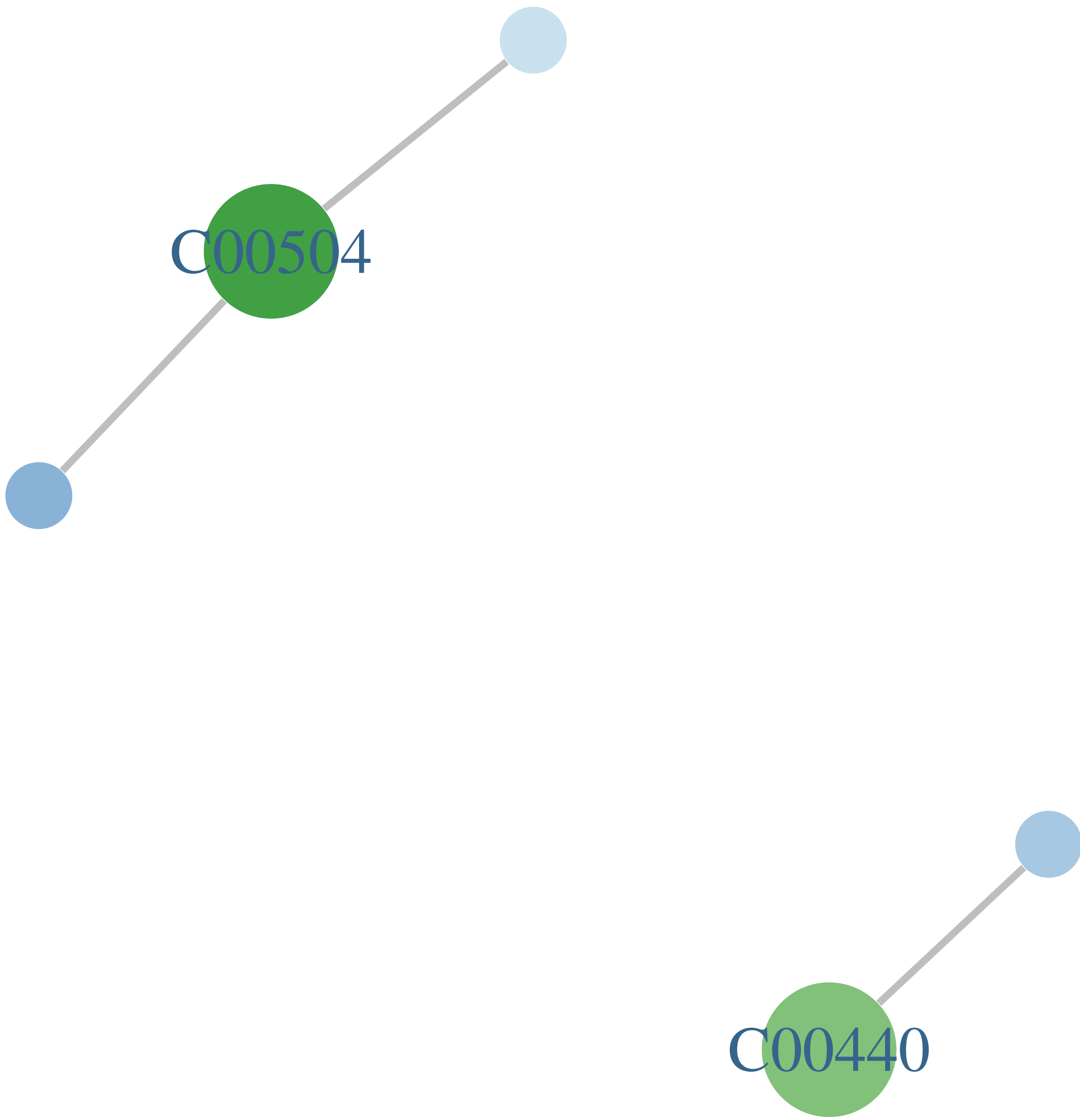
fatty acid metabolism ; p-value: 0.359



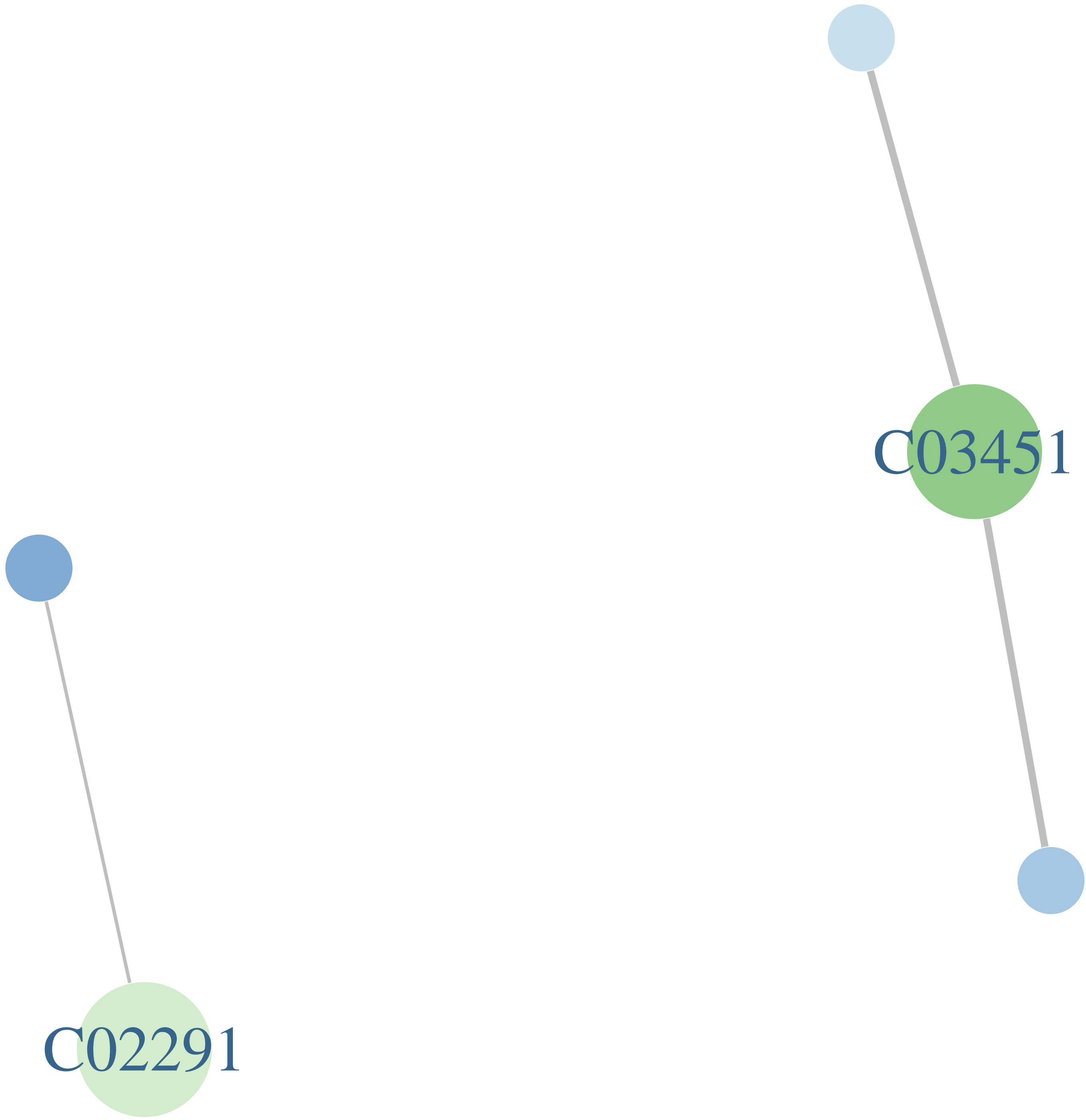
folate biosynthesis ; p-value: 0.233



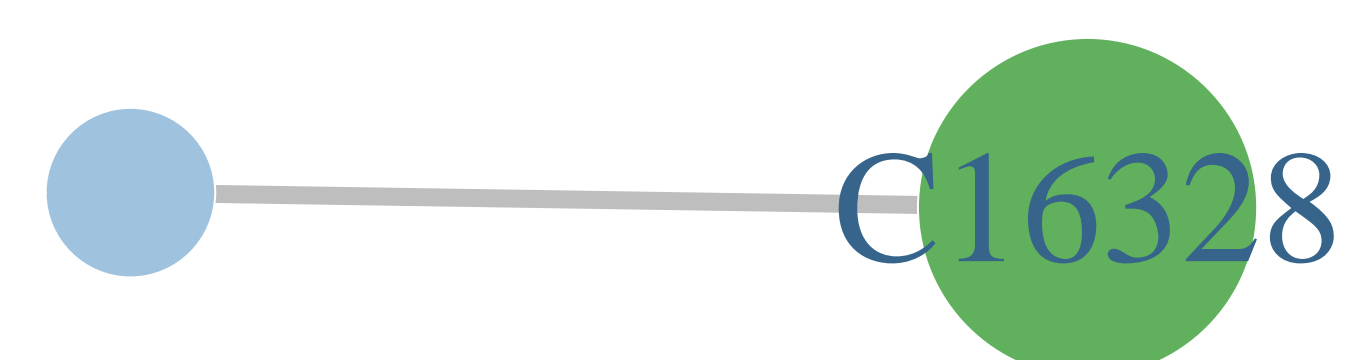
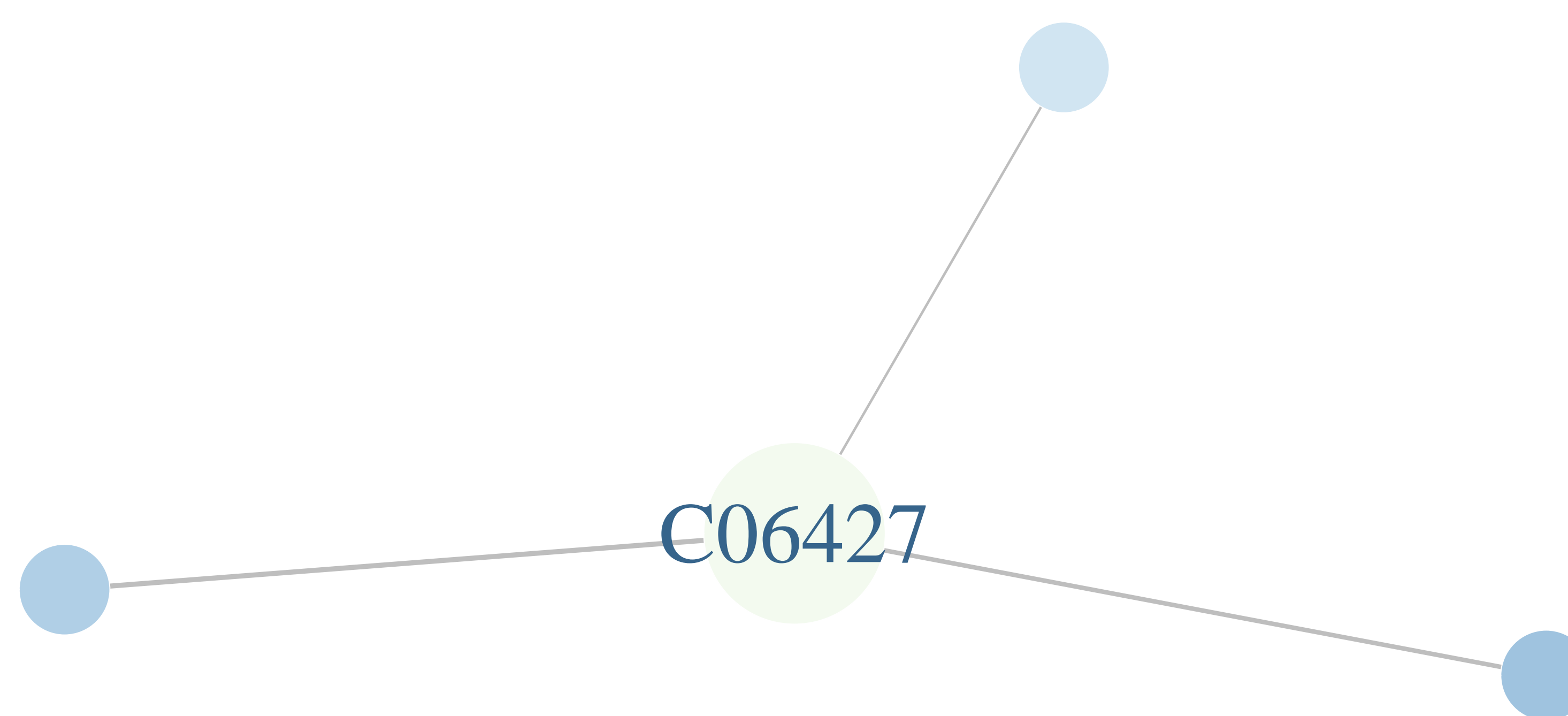
folate metabolism ; p-value: 0.116



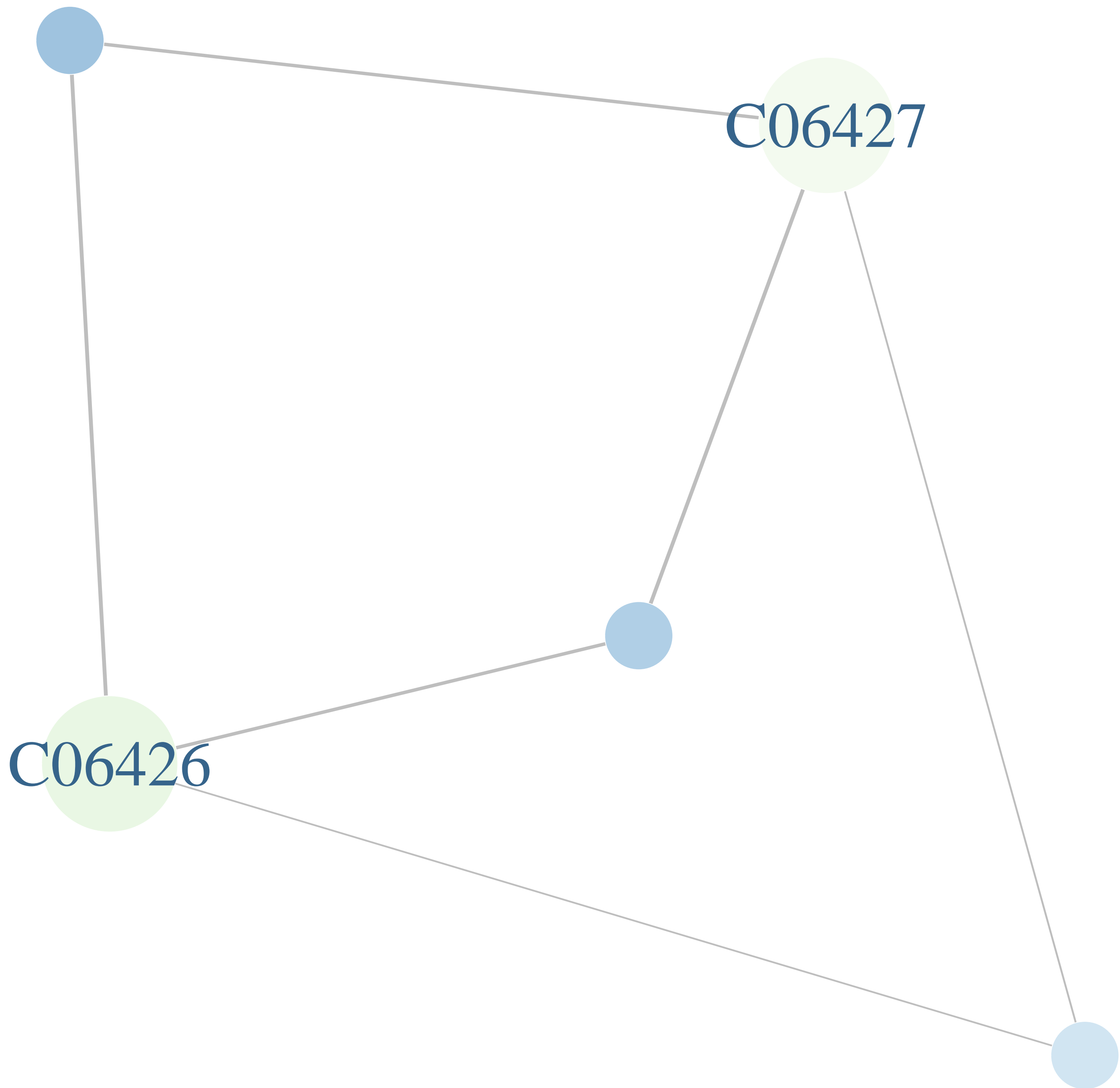
glycine, serine, alanine and threonine metabolism ; p-value: 0.633



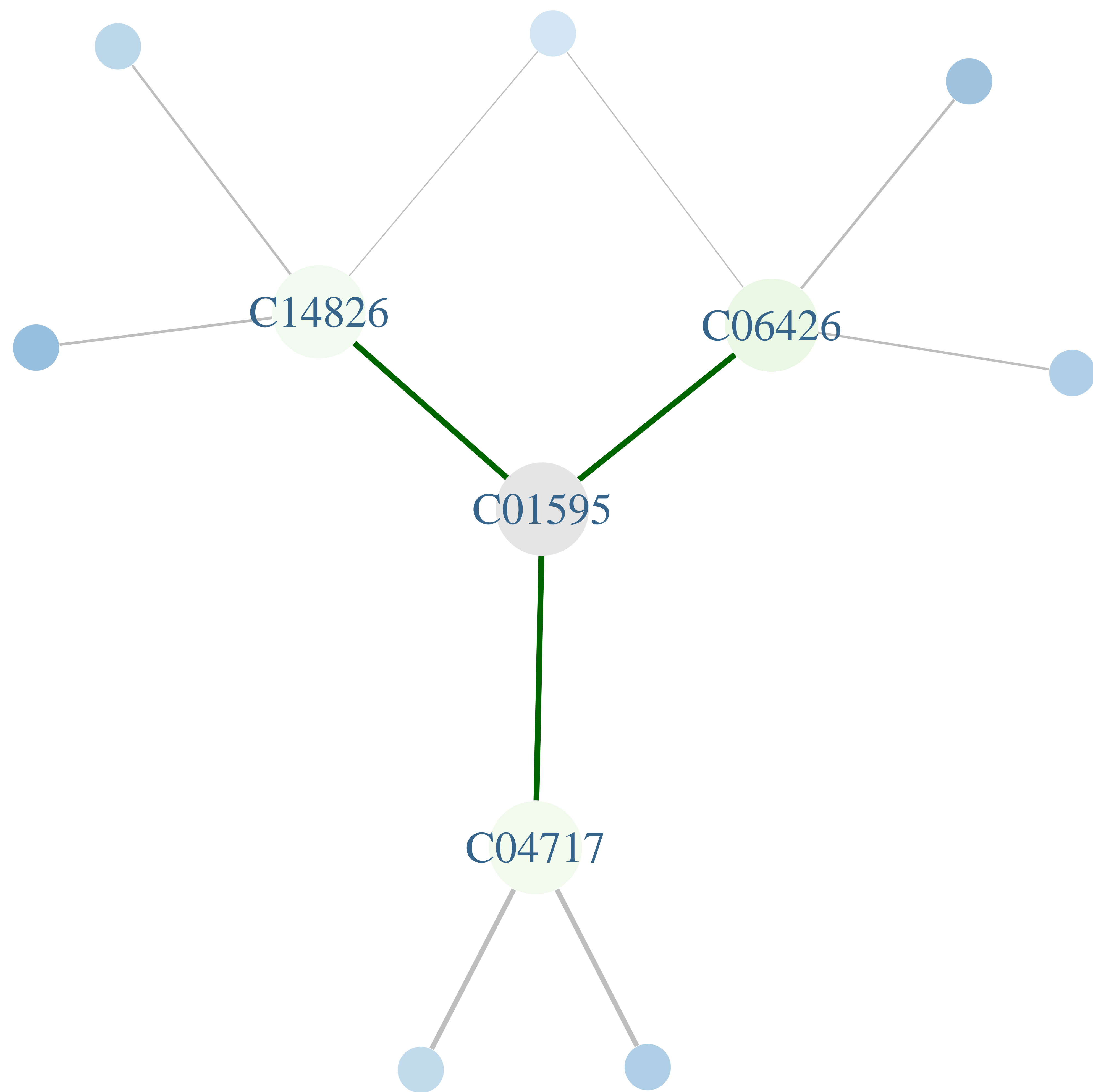
alpha-linolenic acid metabolism ; p-value: 0.116



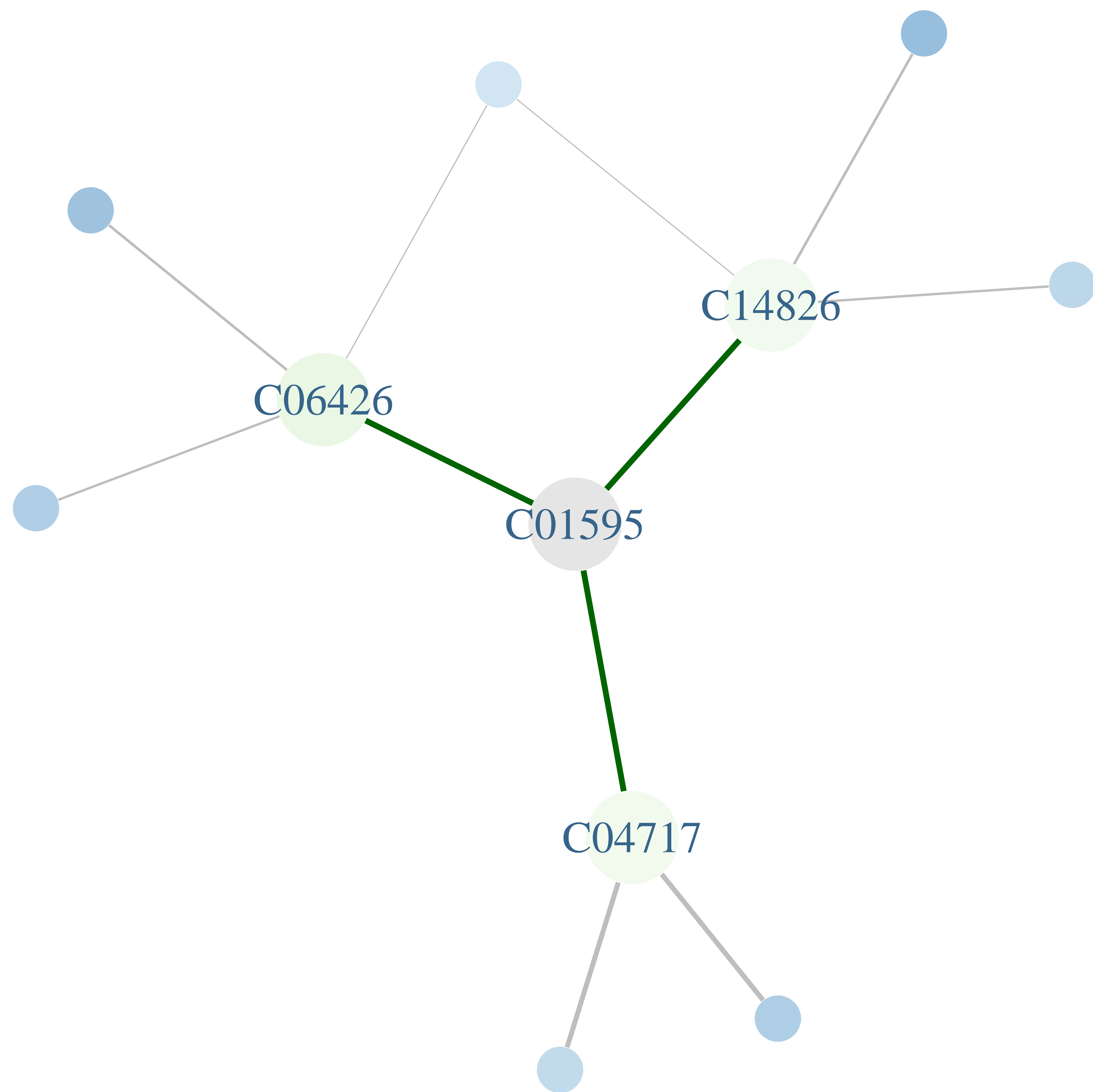
alpha linolenic acid and linoleic acid metabolism ; p-value: 0.051



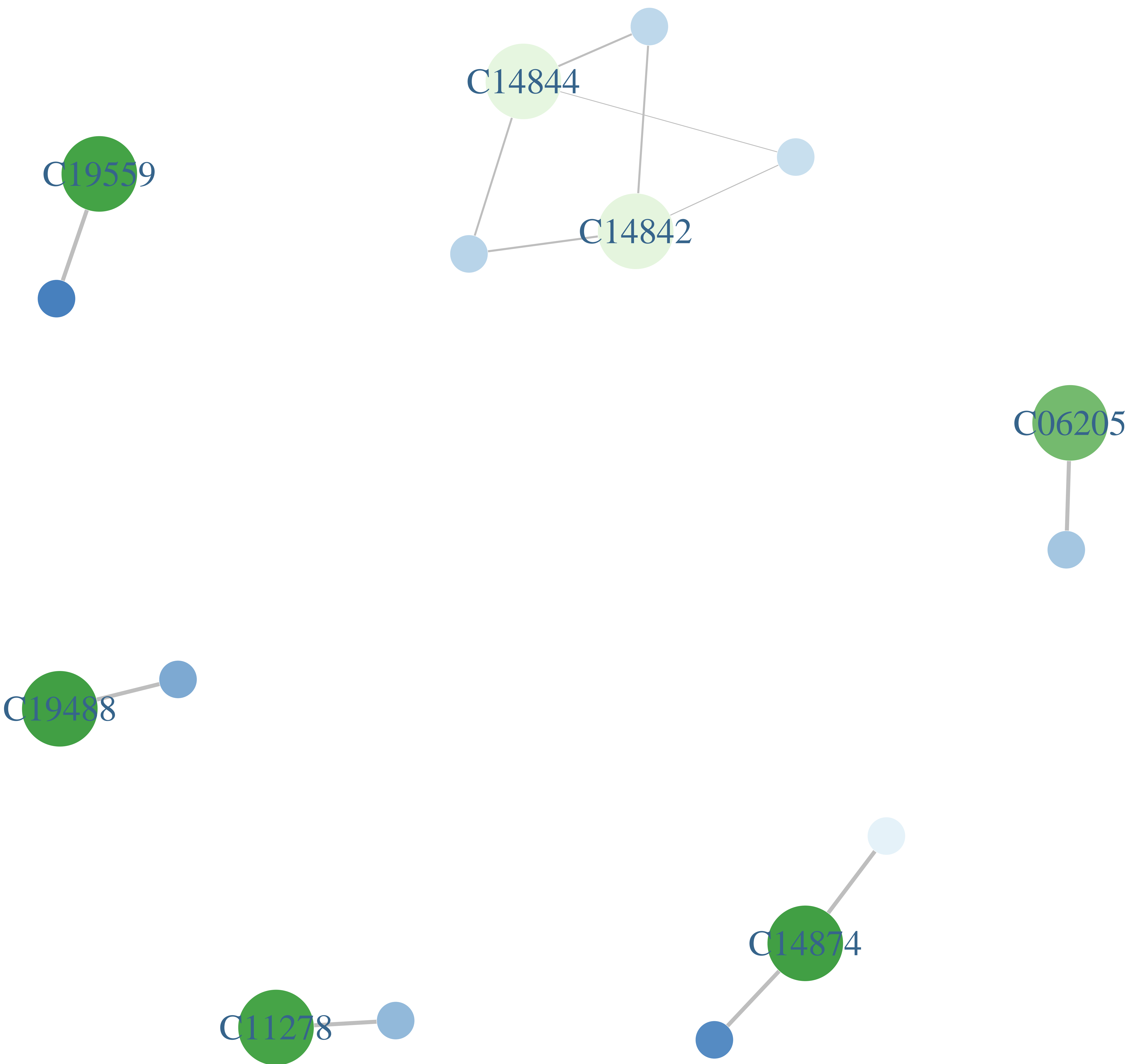
linoleate metabolism ; p-value: 0.01



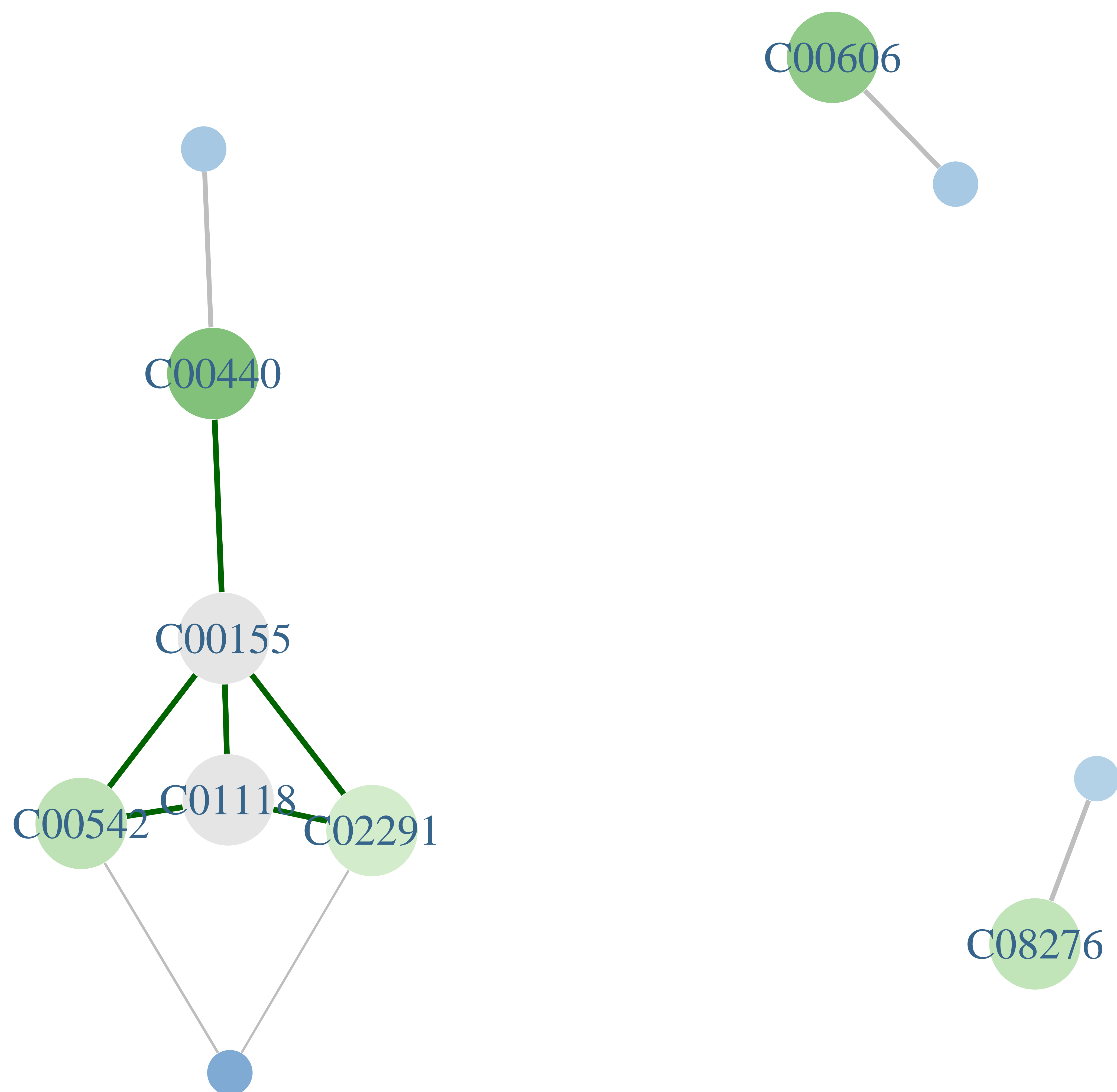
linoleic acid metabolism ; p-value: 0.007



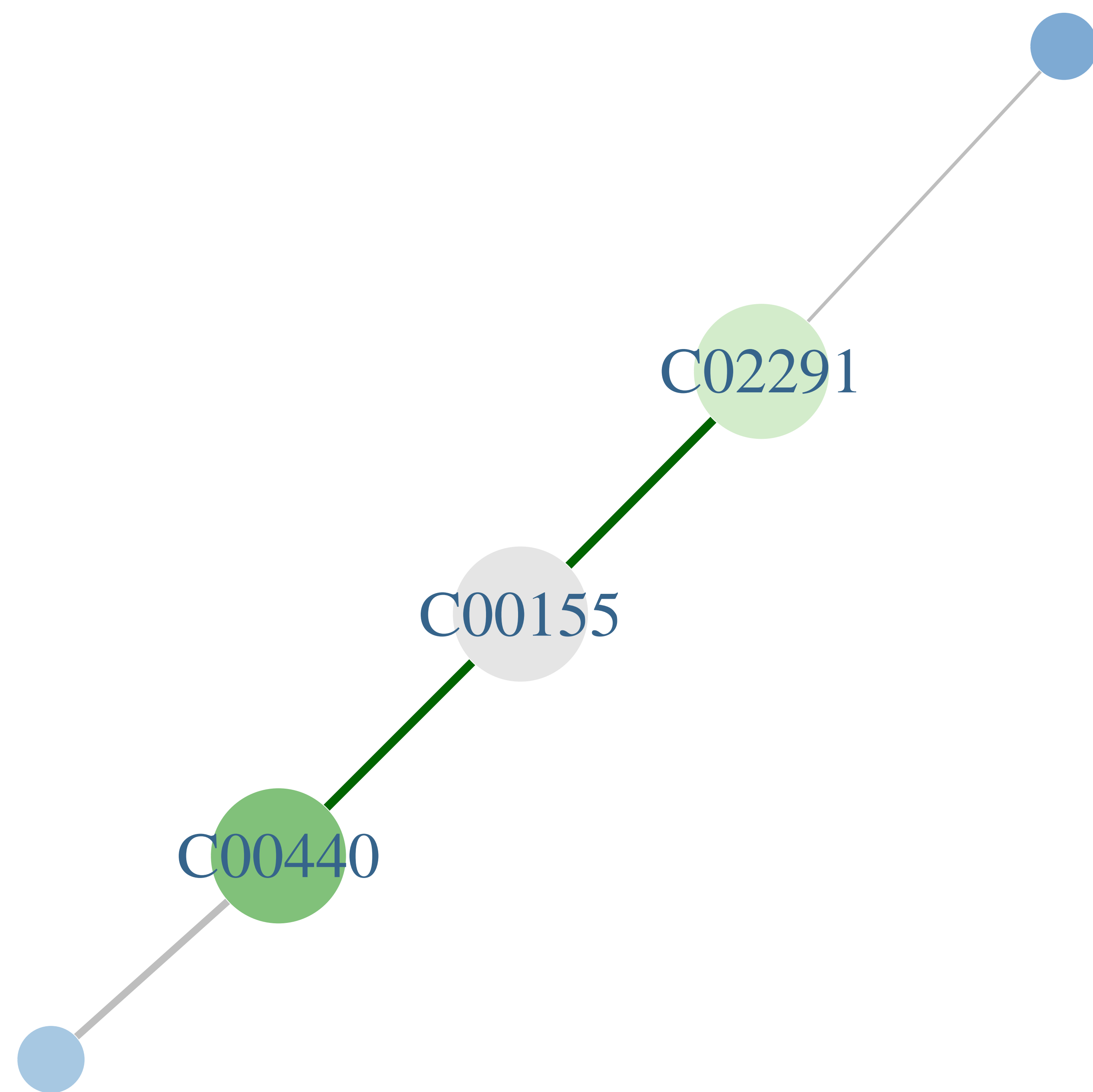
metabolism of xenobiotics by cytochrome p450 ; p-value: 0.024



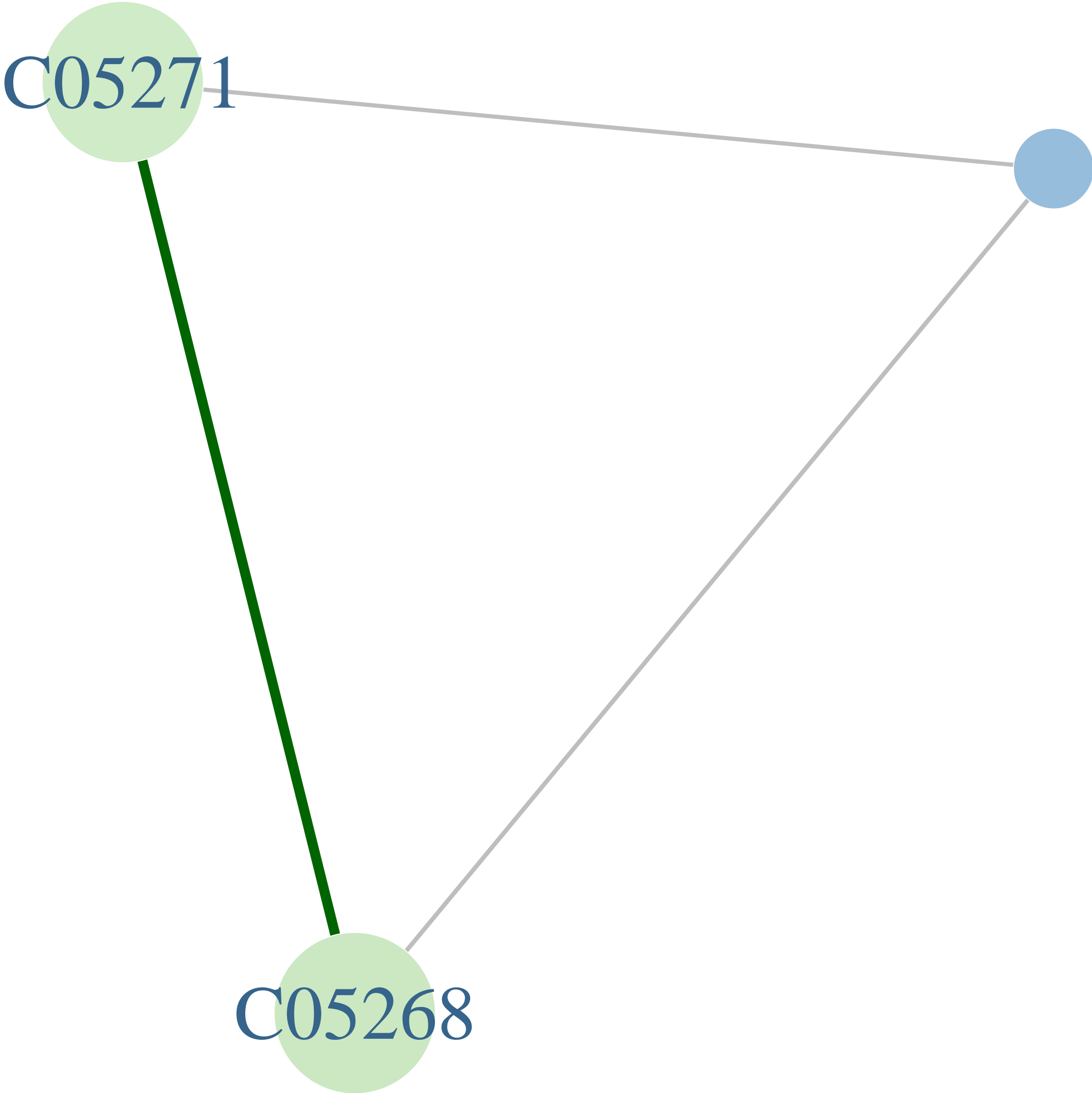
methionine and cysteine metabolism ; p-value: 0.056



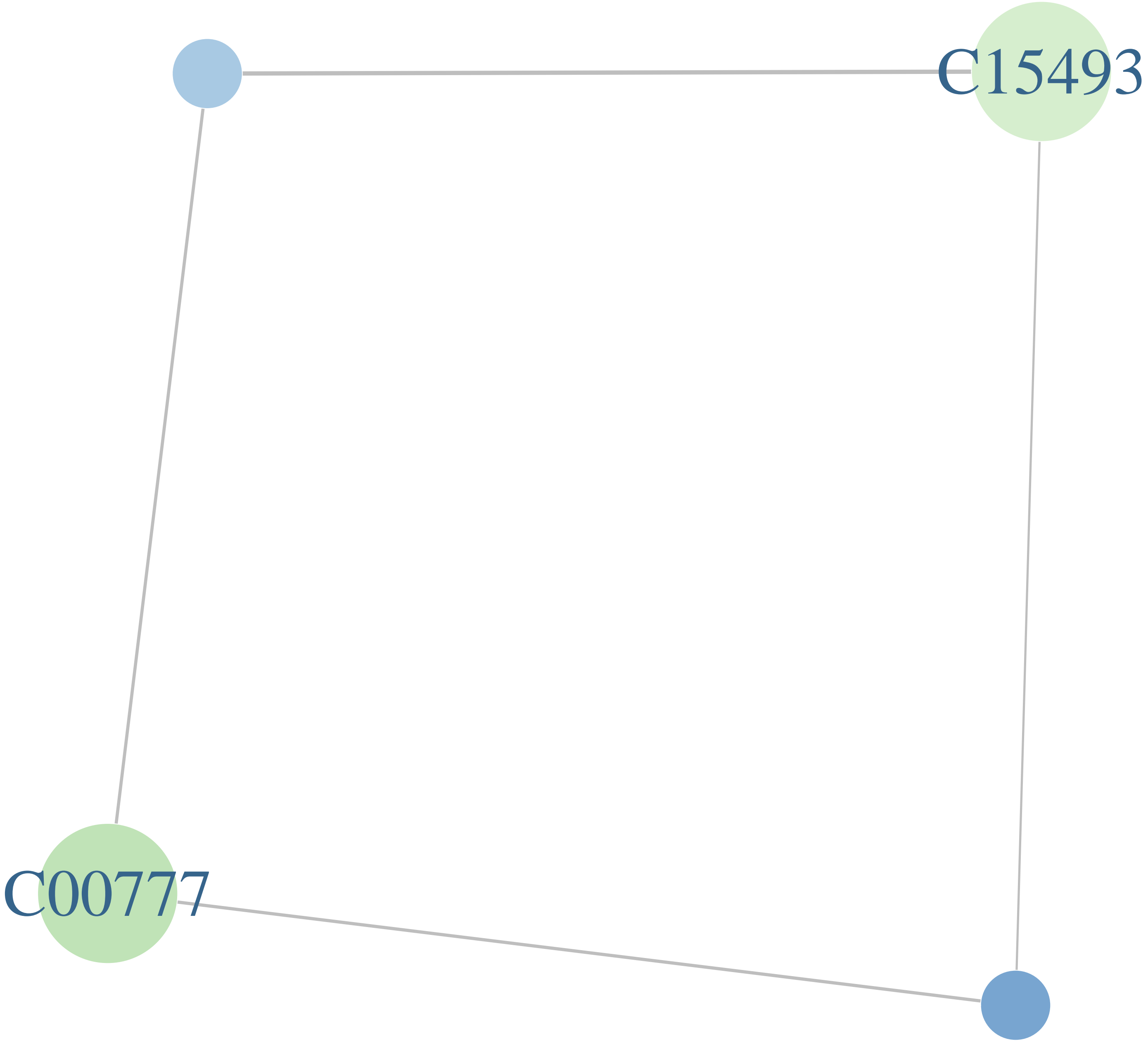
methionine metabolism ; p-value: 0.275



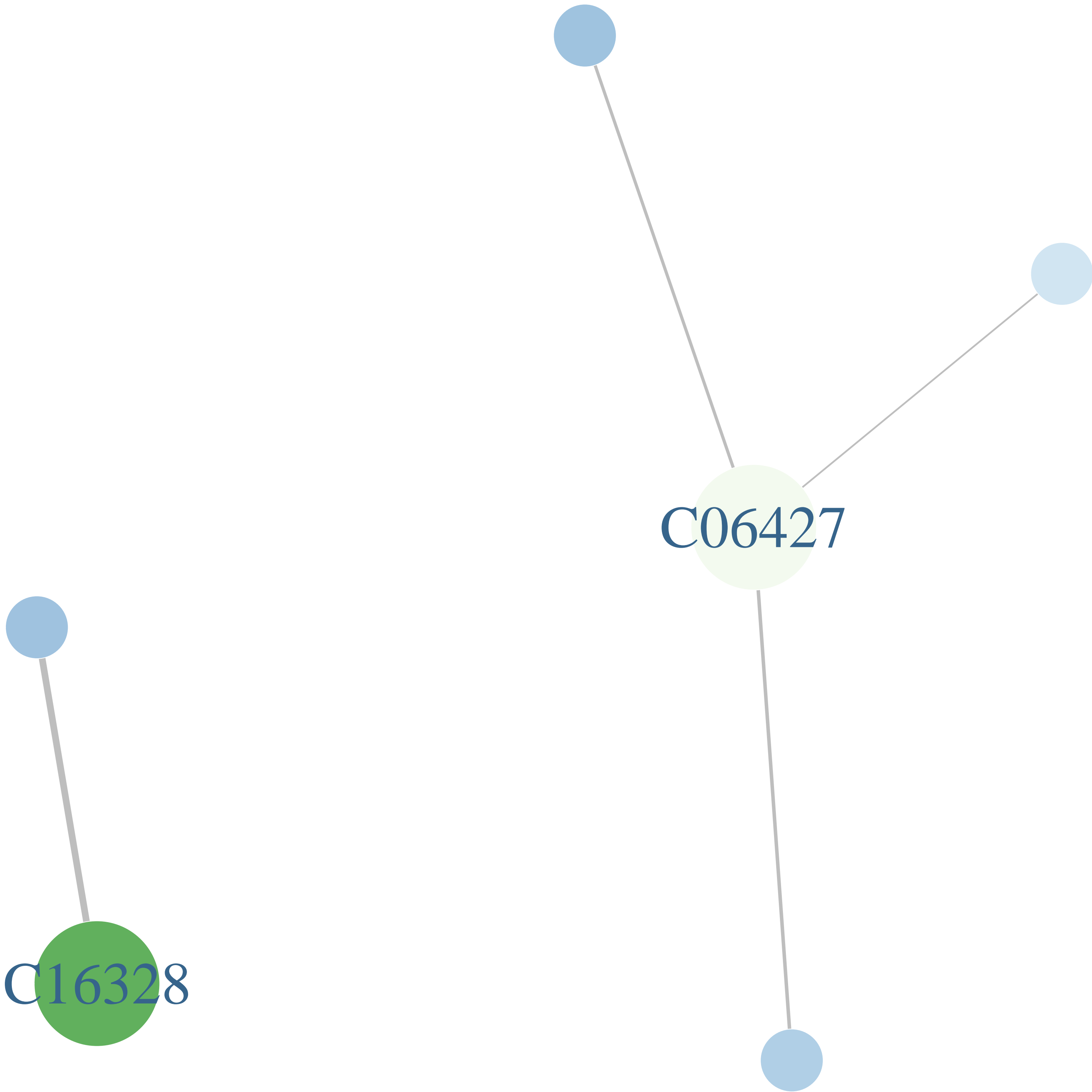
mitochondrial beta-oxidation of short chain saturated fatty acids ; p-value: 0.051



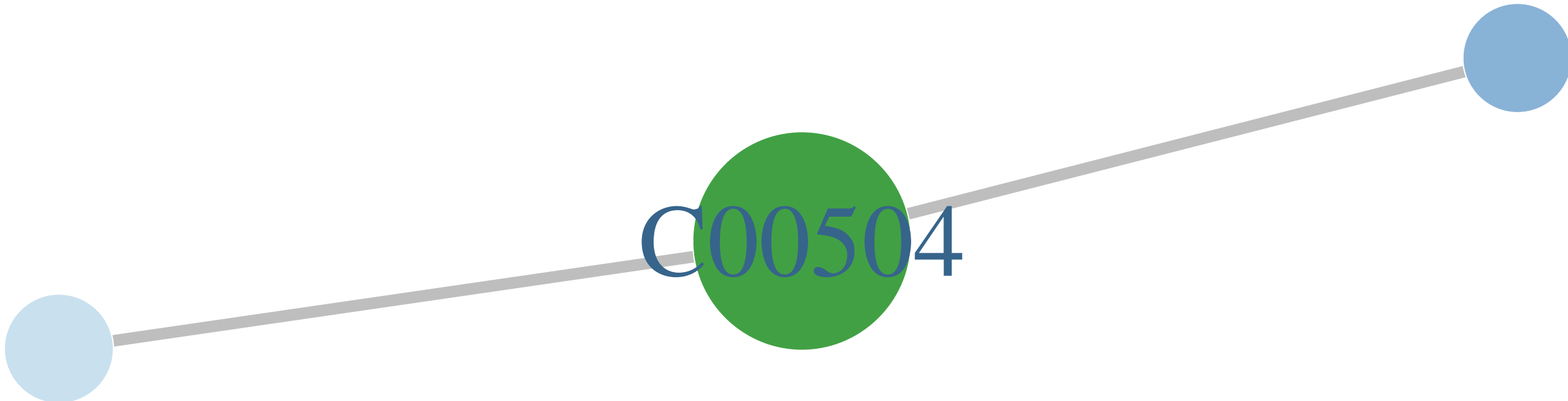
non-small cell lung cancer ; p-value: 0.026



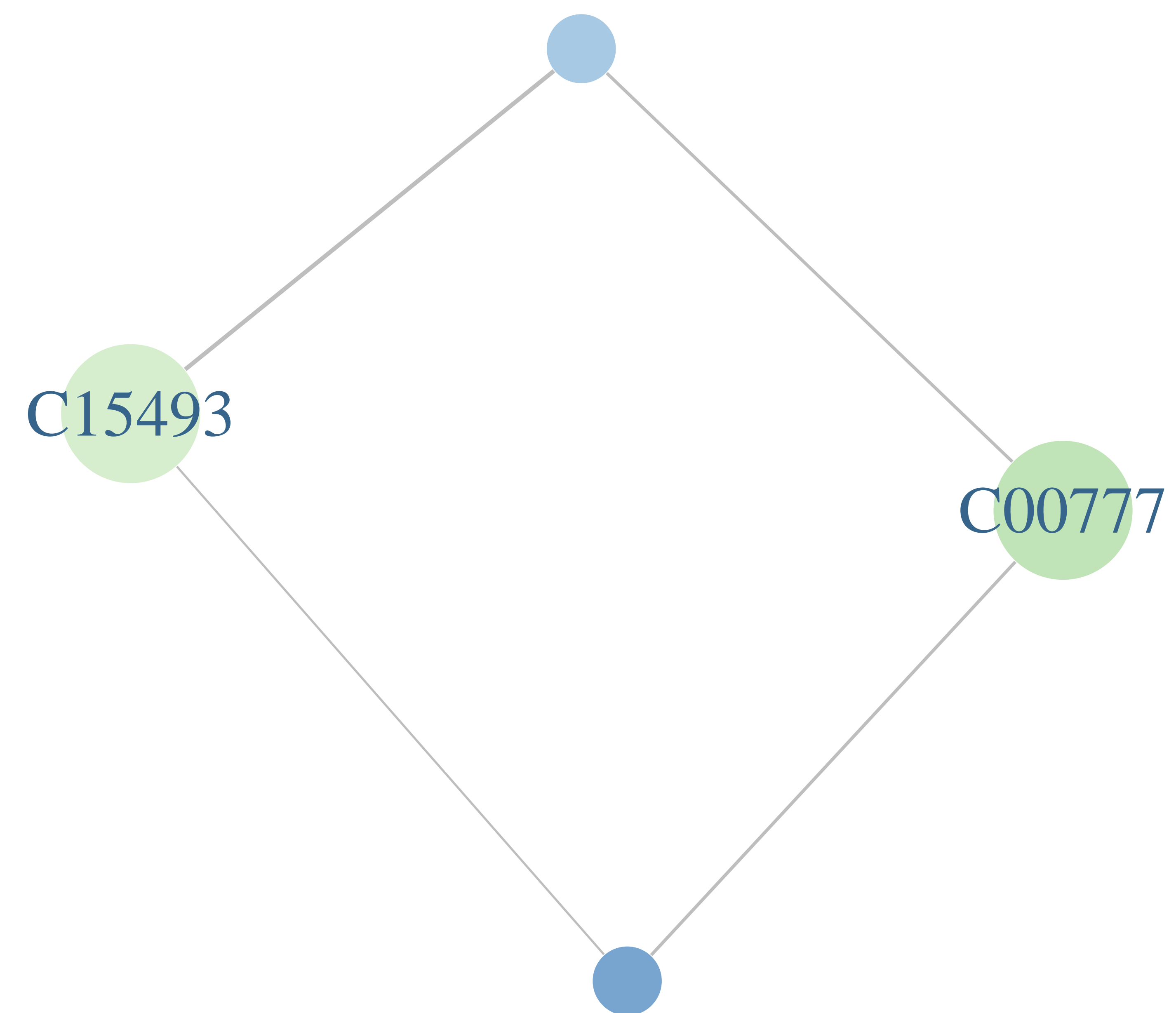
omega-3 fatty acid metabolism ; p-value: 0.038



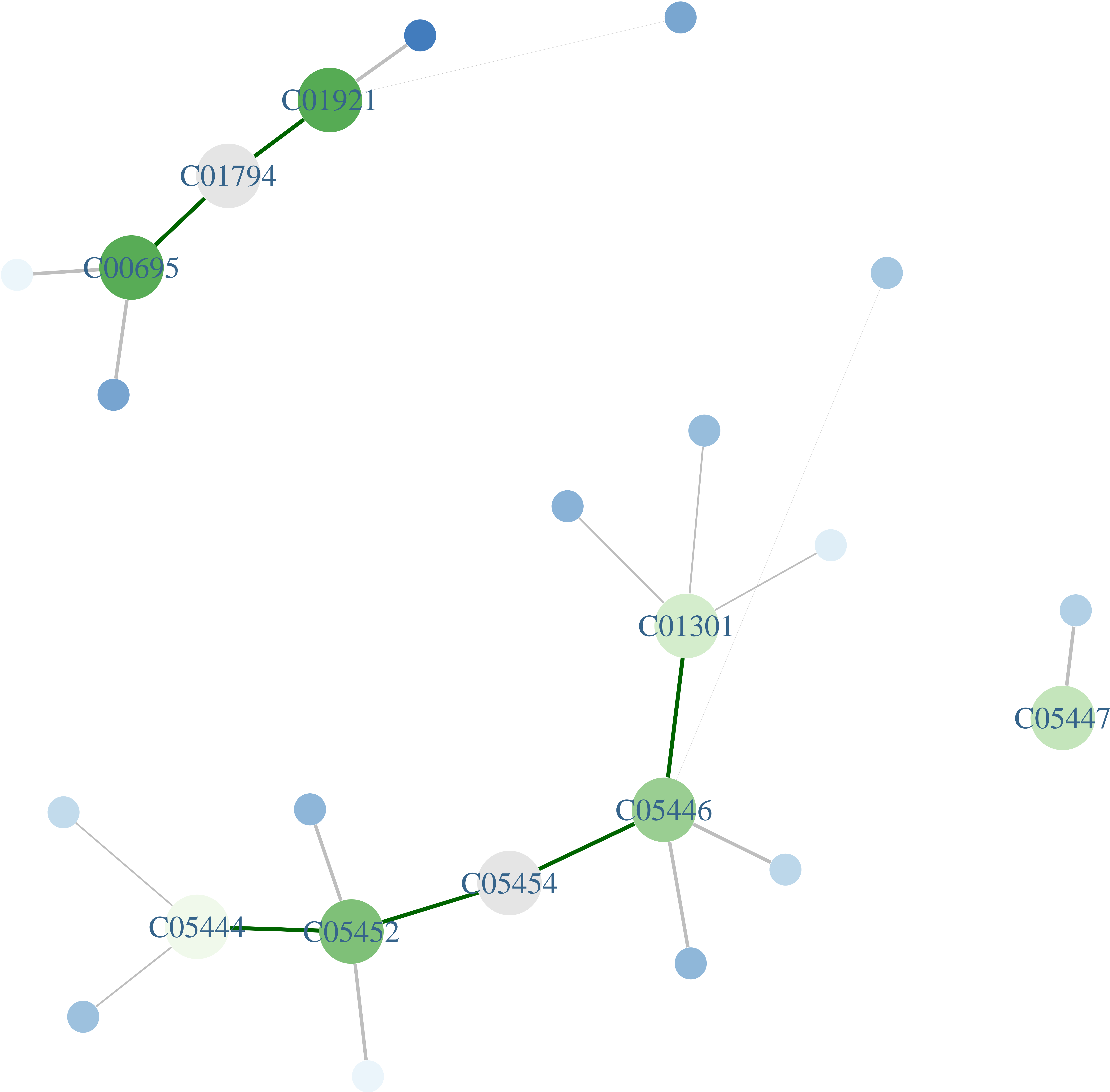
one carbon pool by folate ; p-value: 0.066



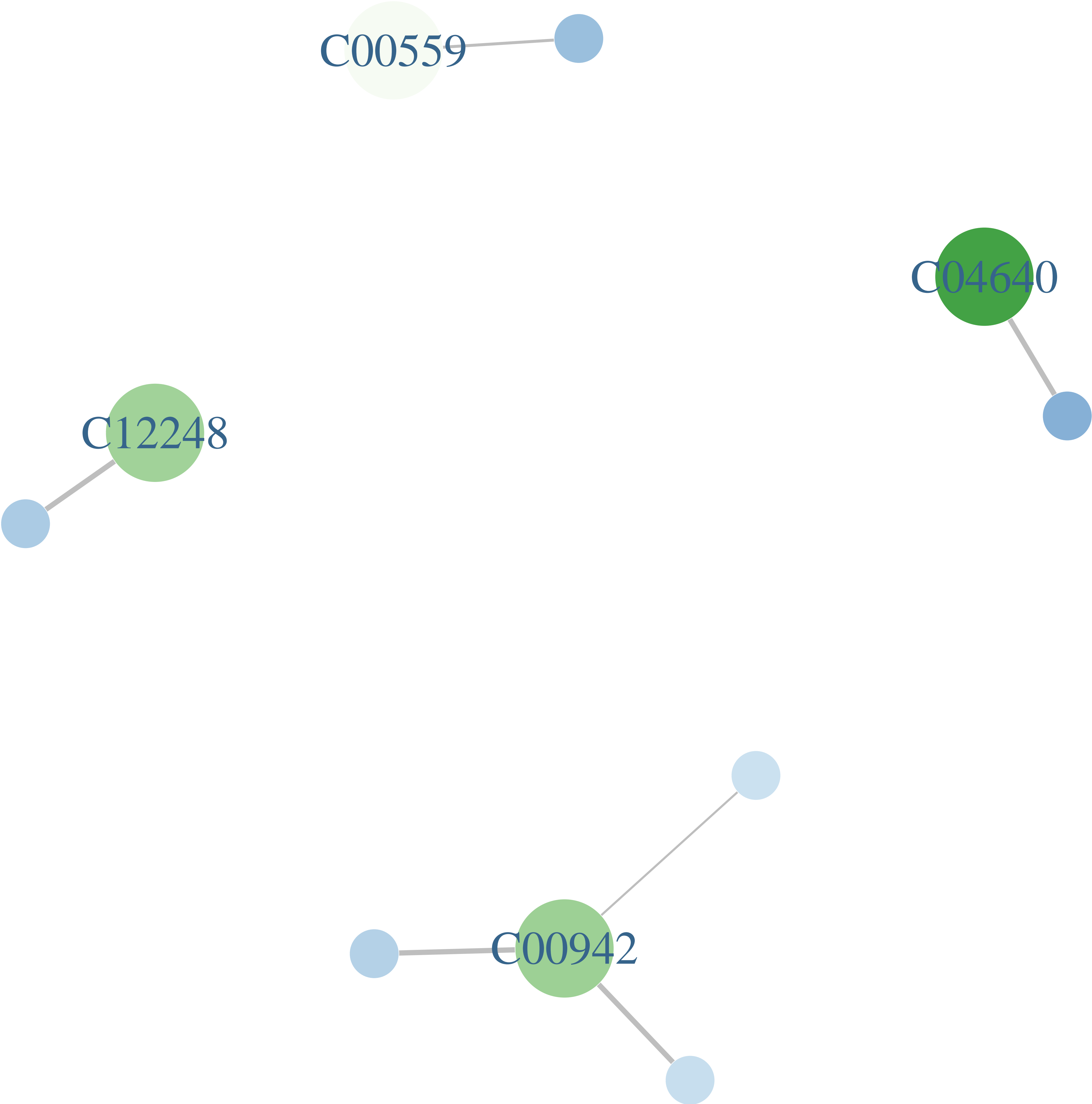
pathways in cancer ; p-value: 0.254



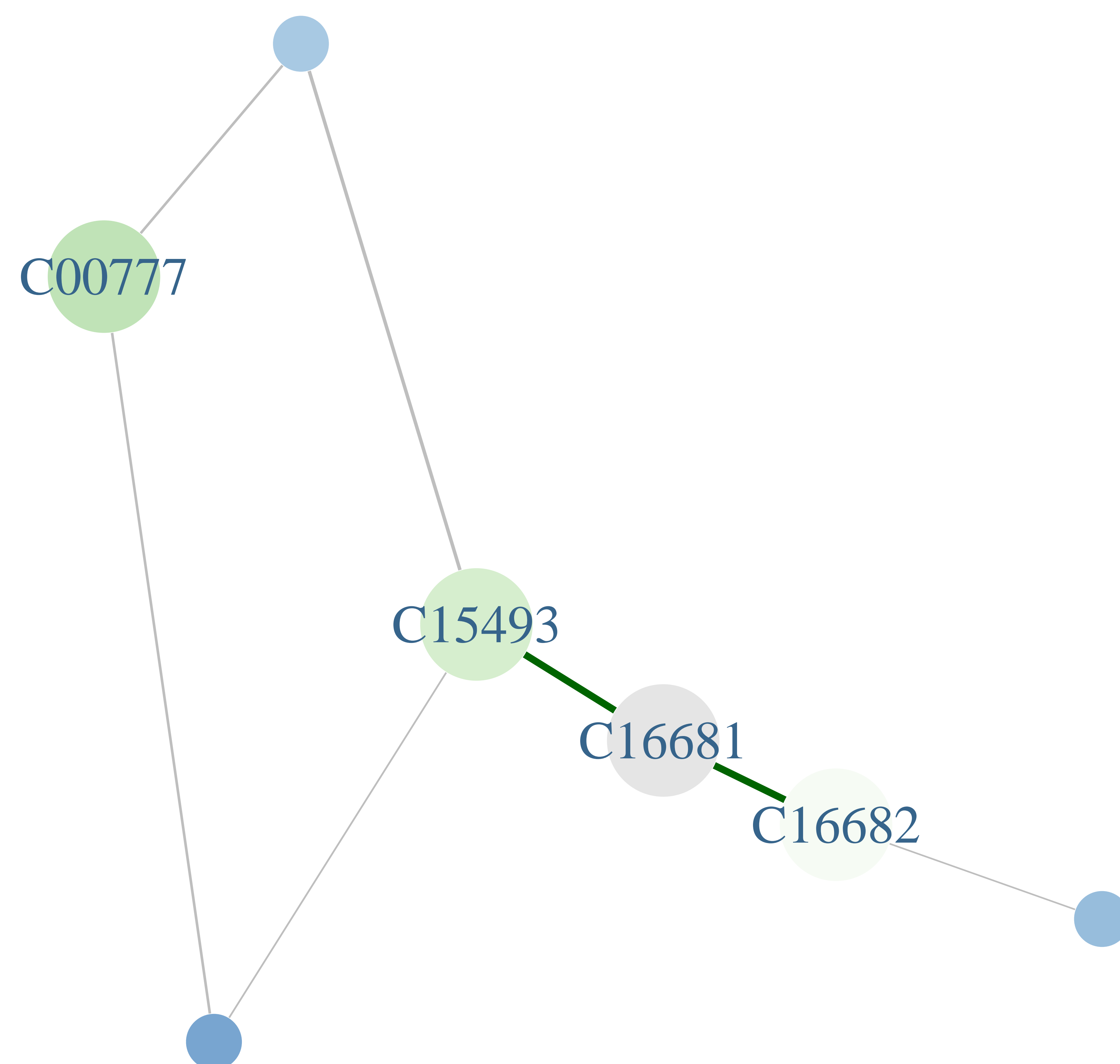
primary bile acid biosynthesis ; p-value: 0.003



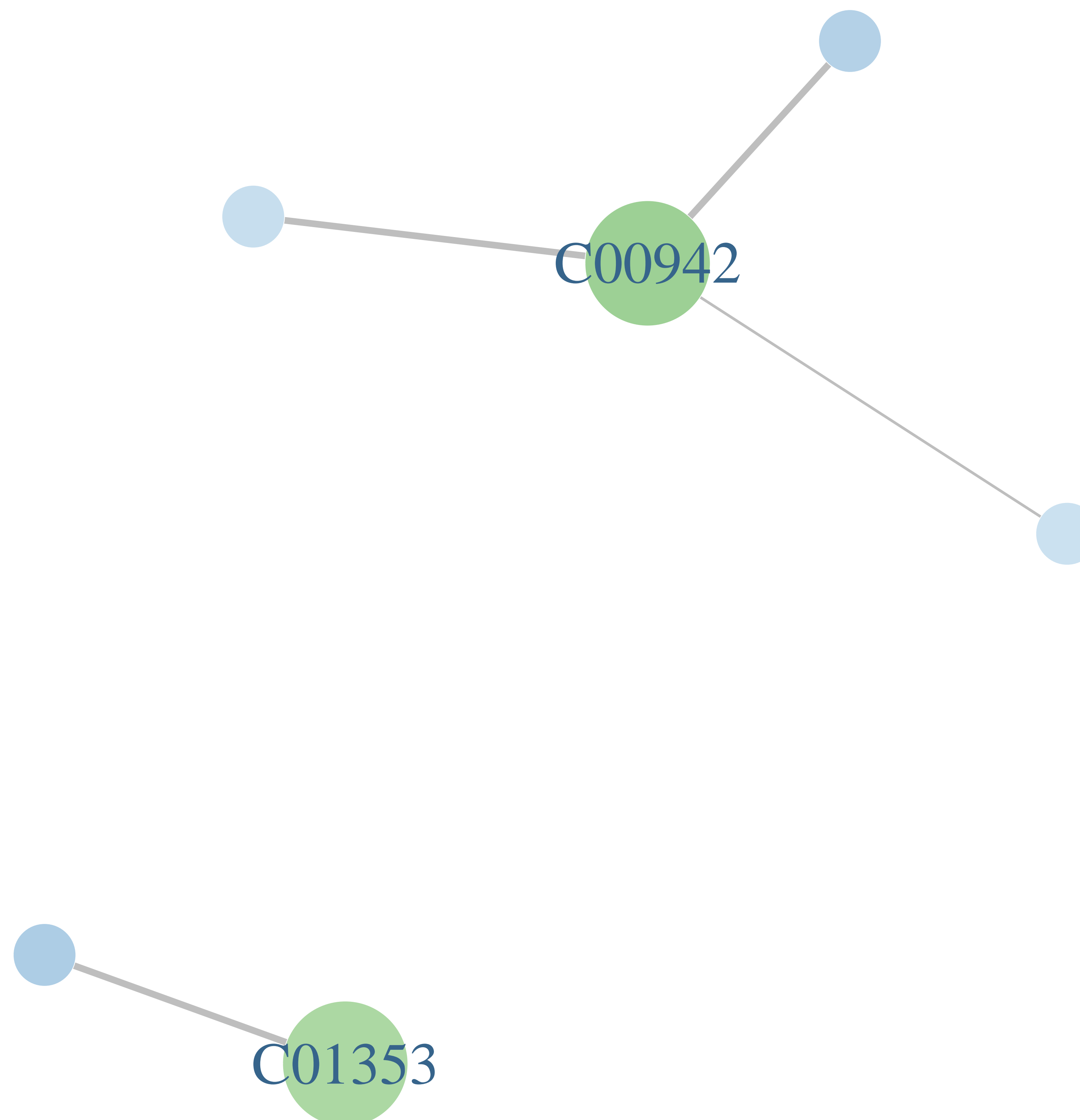
purine metabolism ; p-value: 0.483



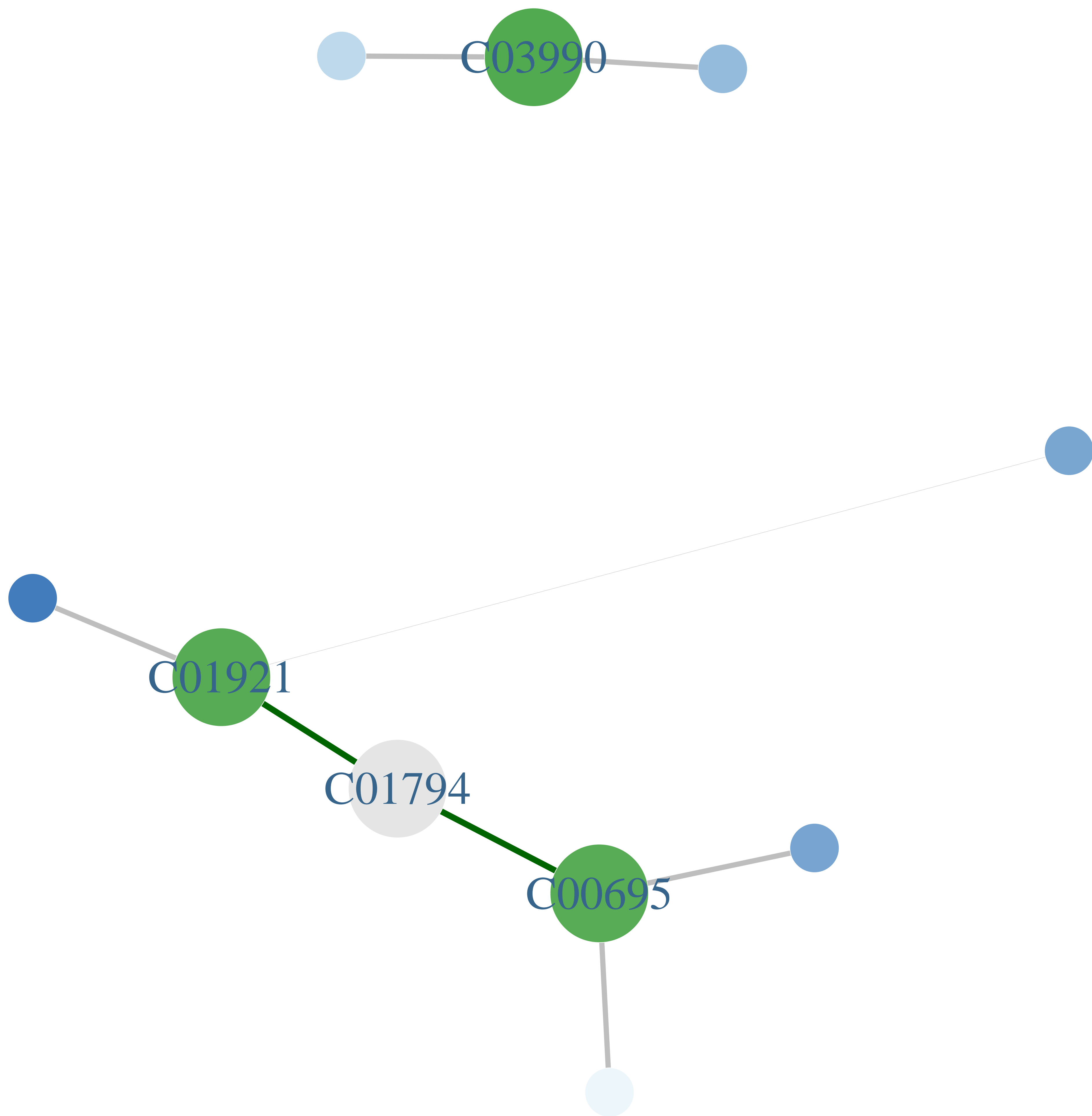
retinol metabolism ; p-value: 0.09



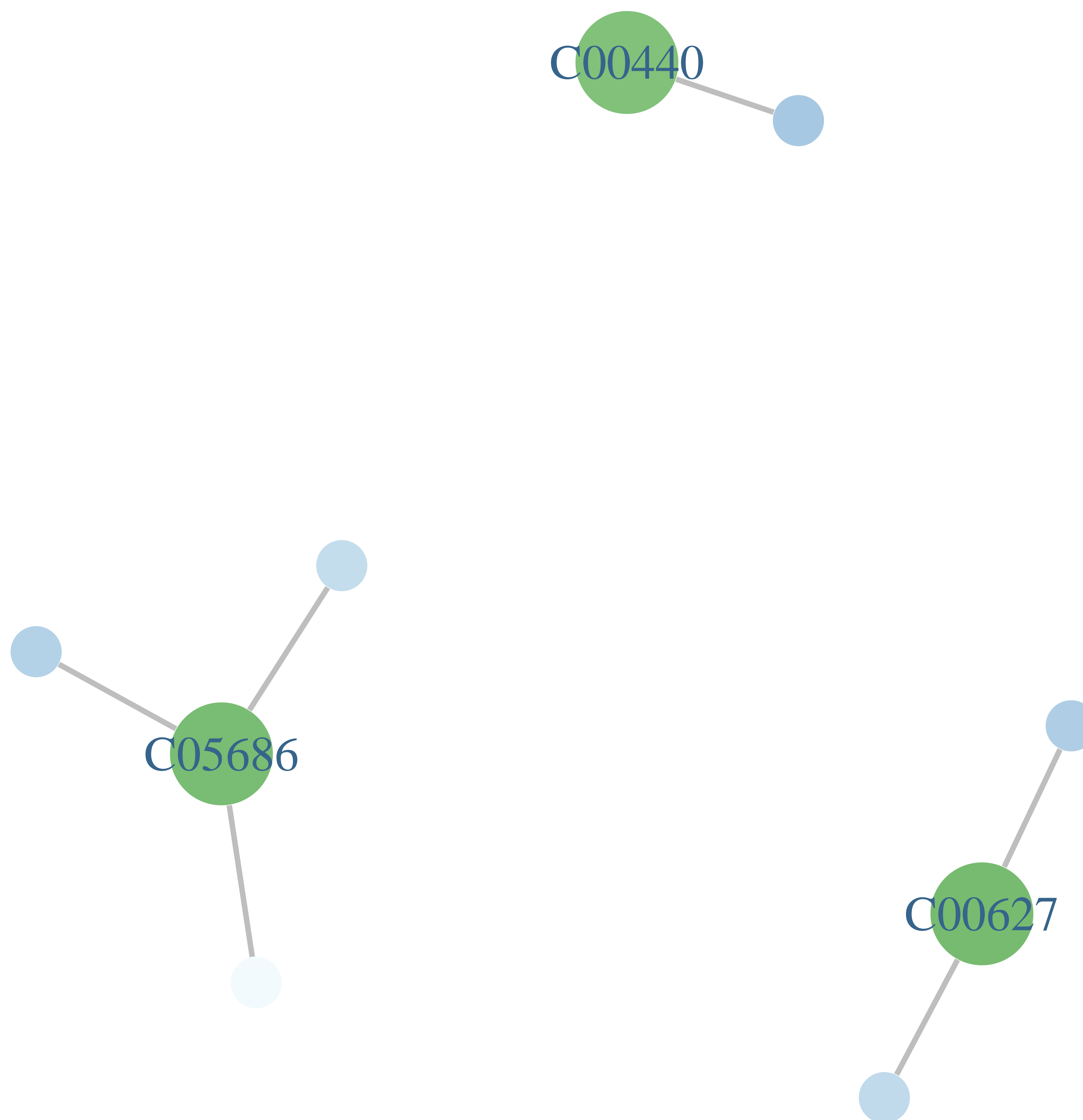
salivary secretion ; p-value: 0.066



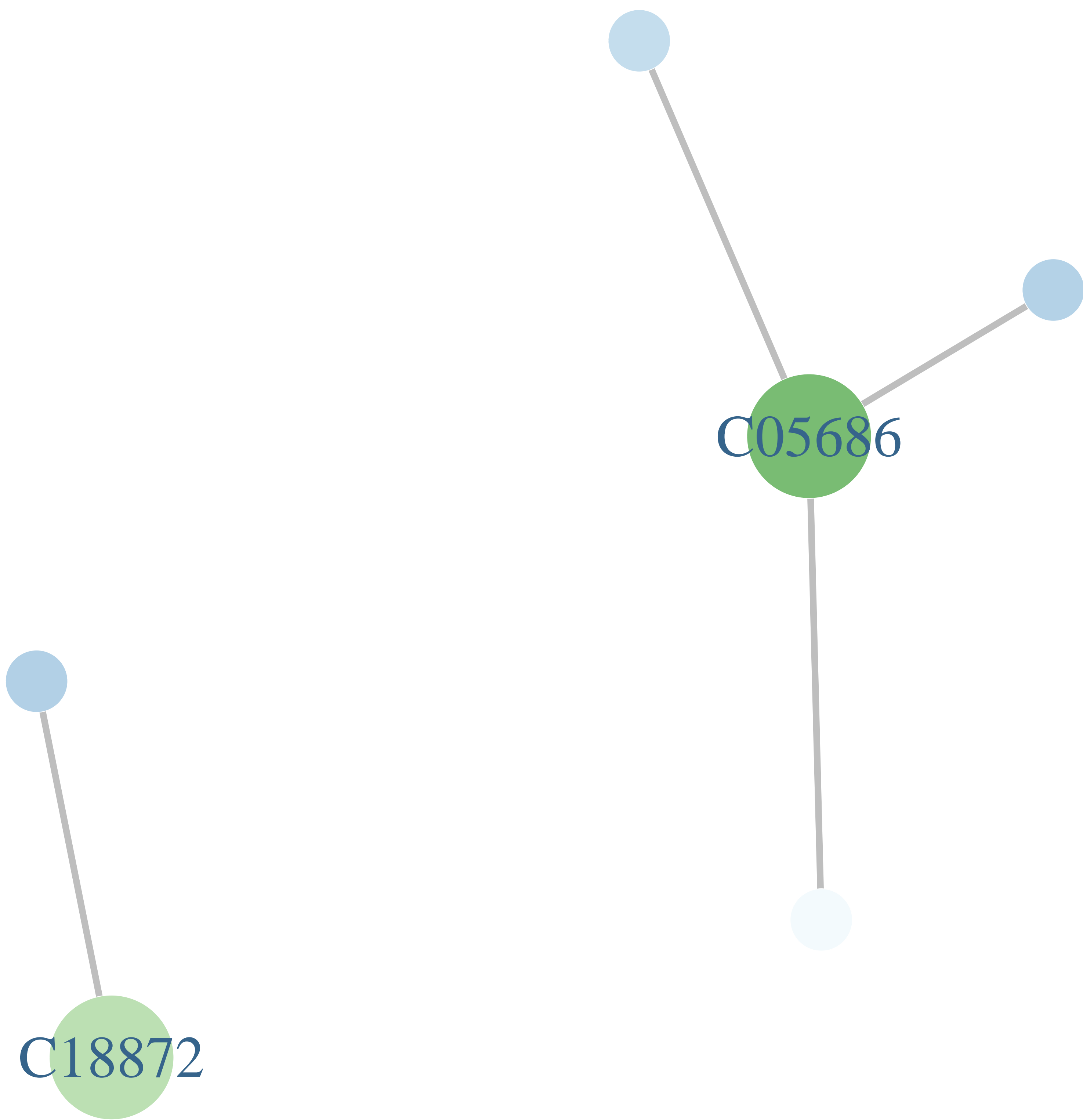
secondary bile acid biosynthesis ; p-value: 0.007



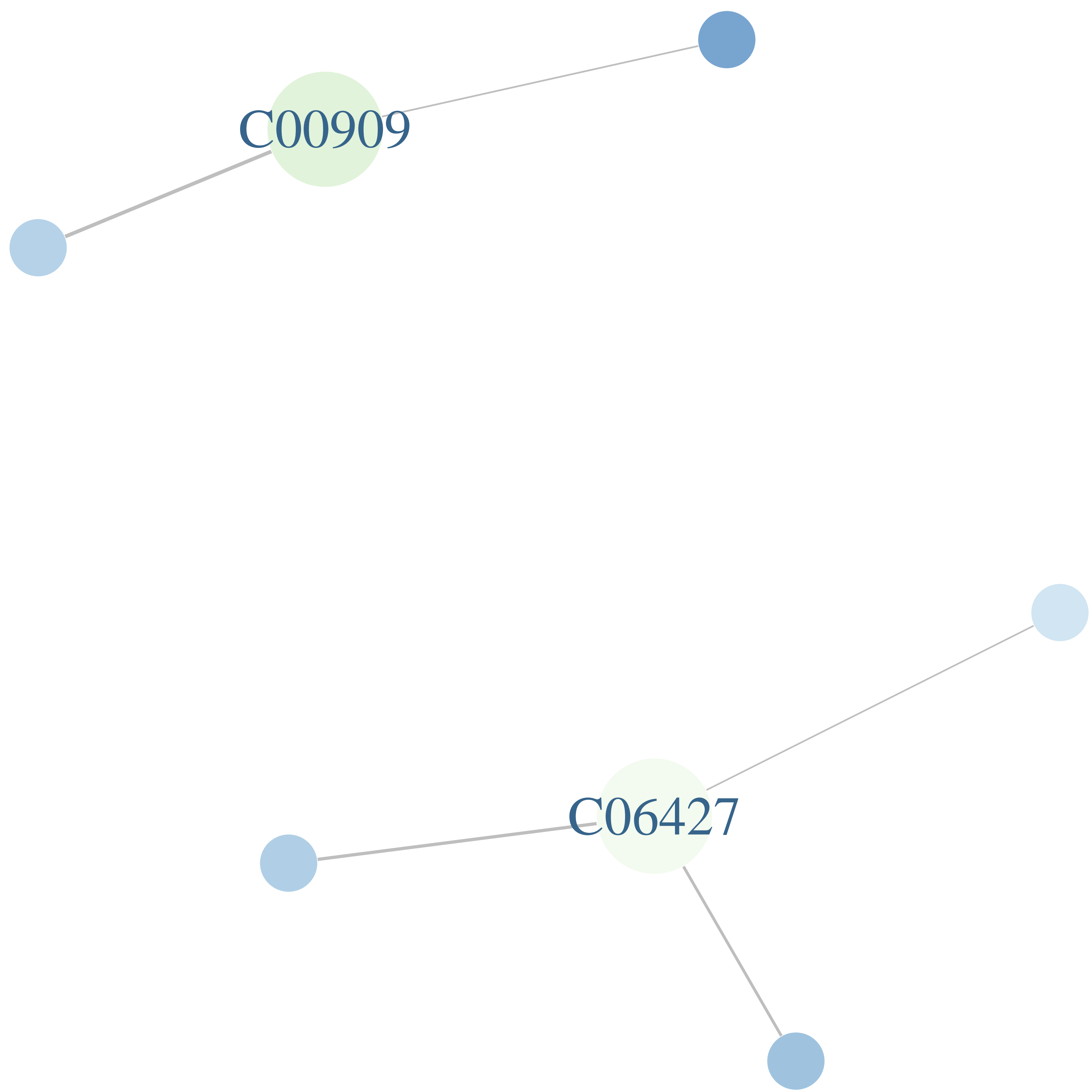
selenoamino acid metabolism ; p-value: 0.079



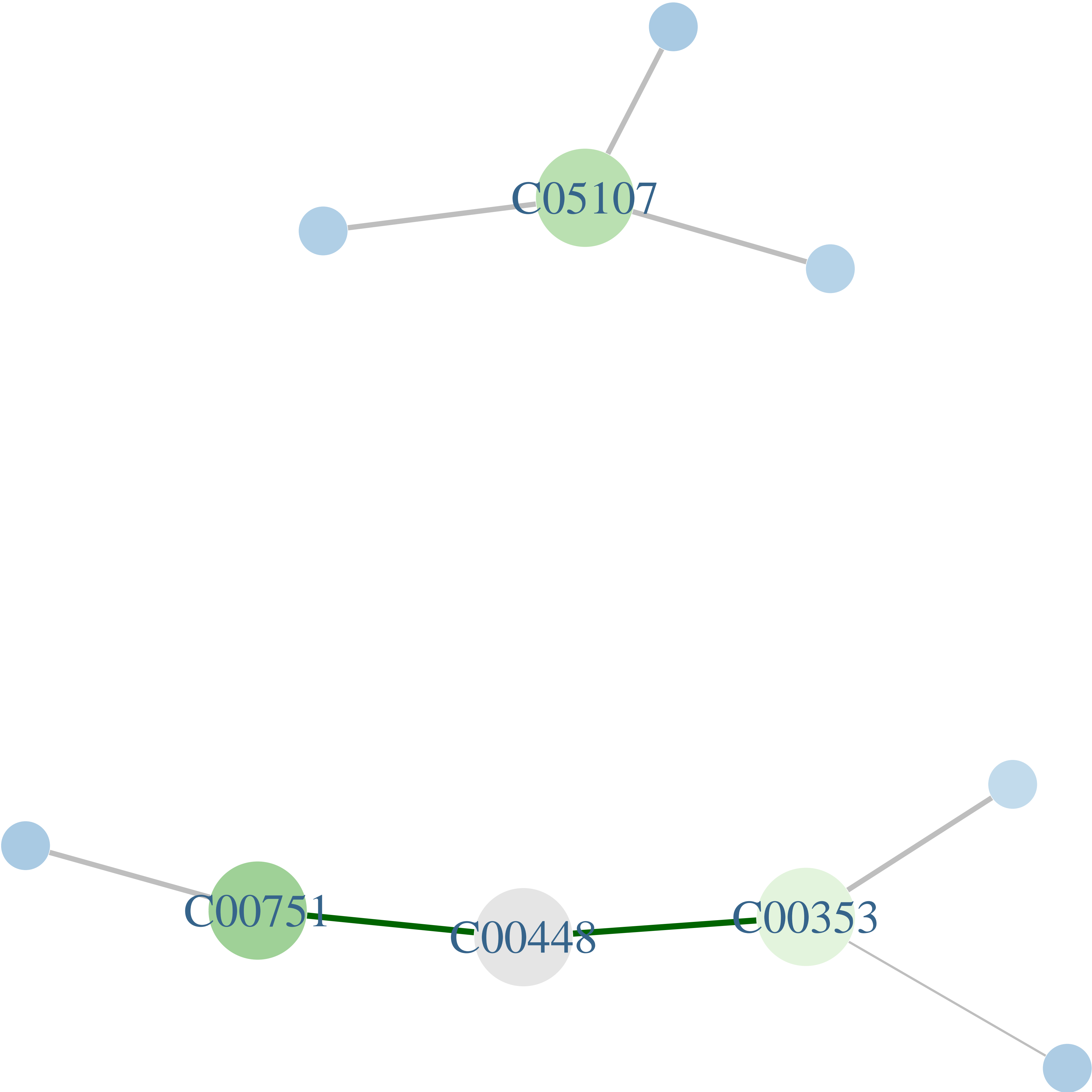
selenocompound metabolism ; p-value: 0.134



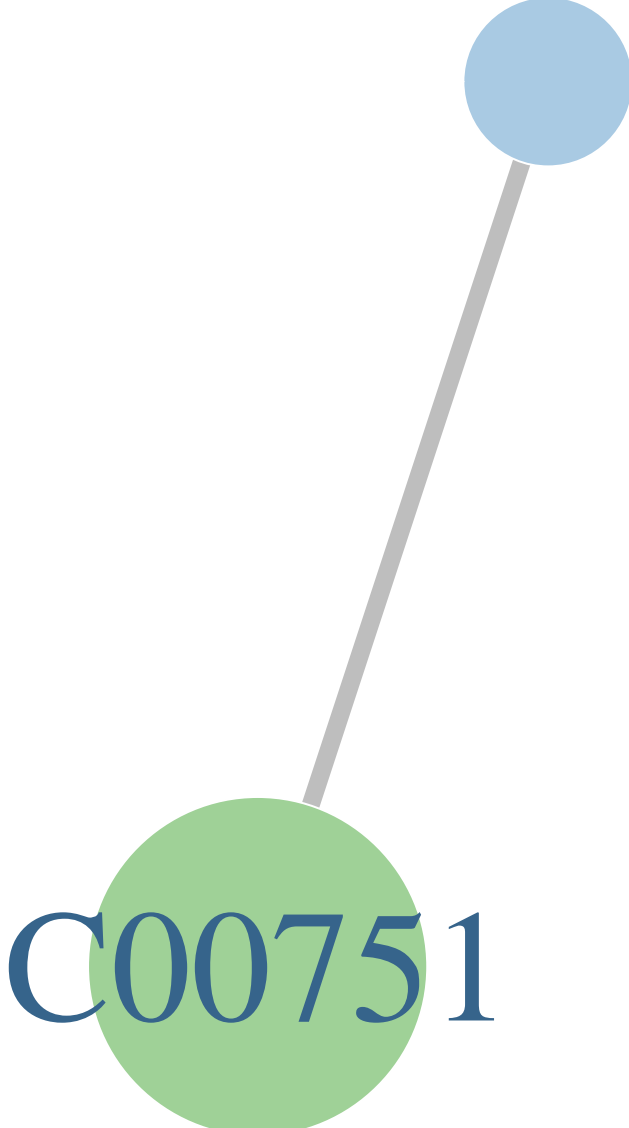
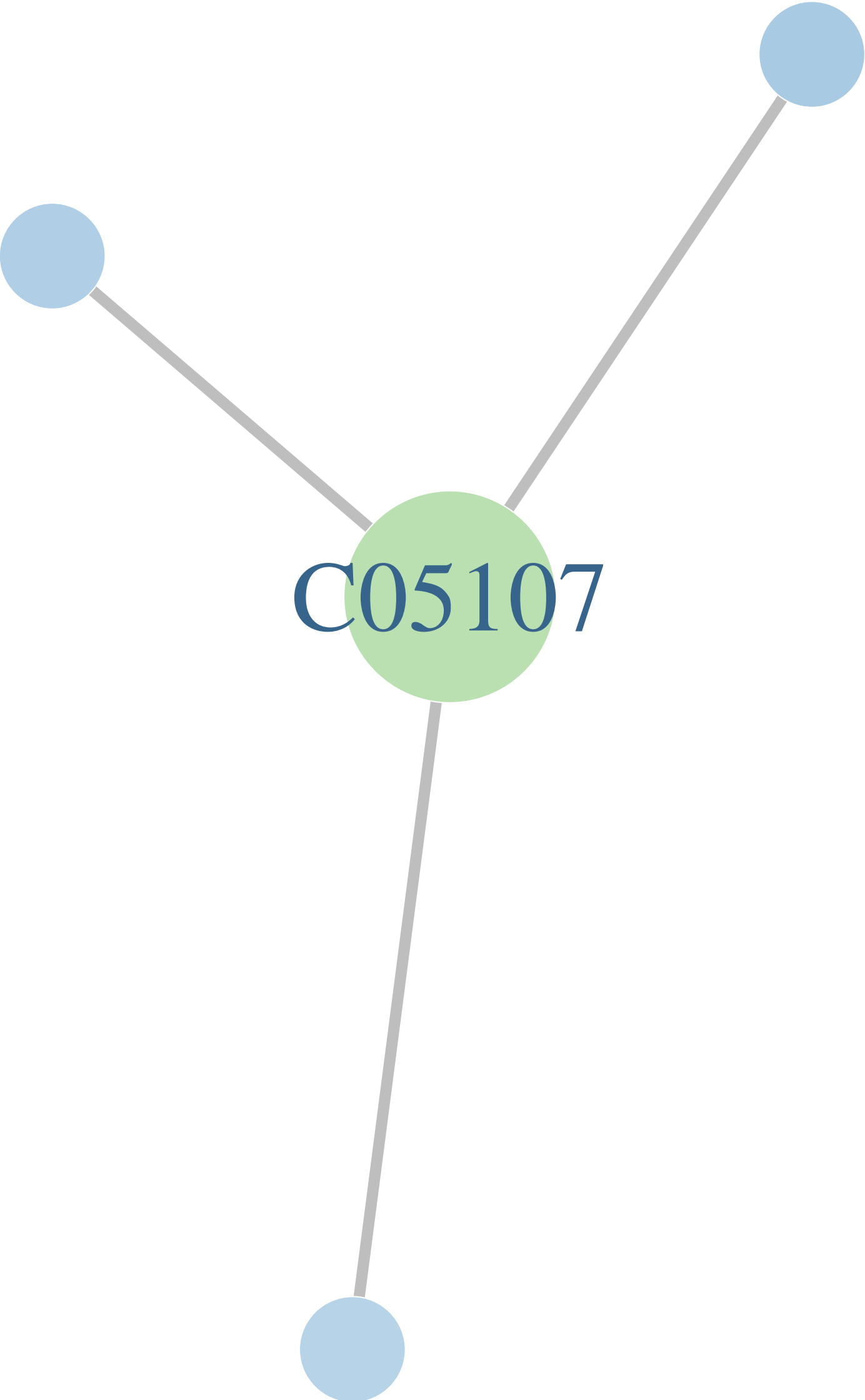
arachidonic acid metabolism ; p-value: 0.661



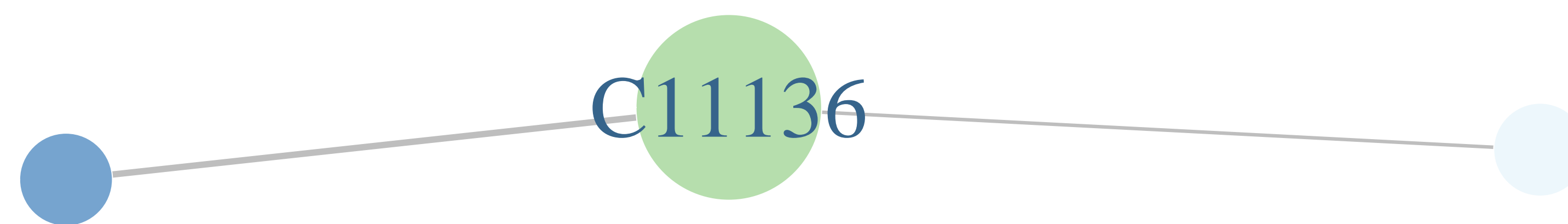
squalene and cholesterol biosynthesis ; p-value: 0.233



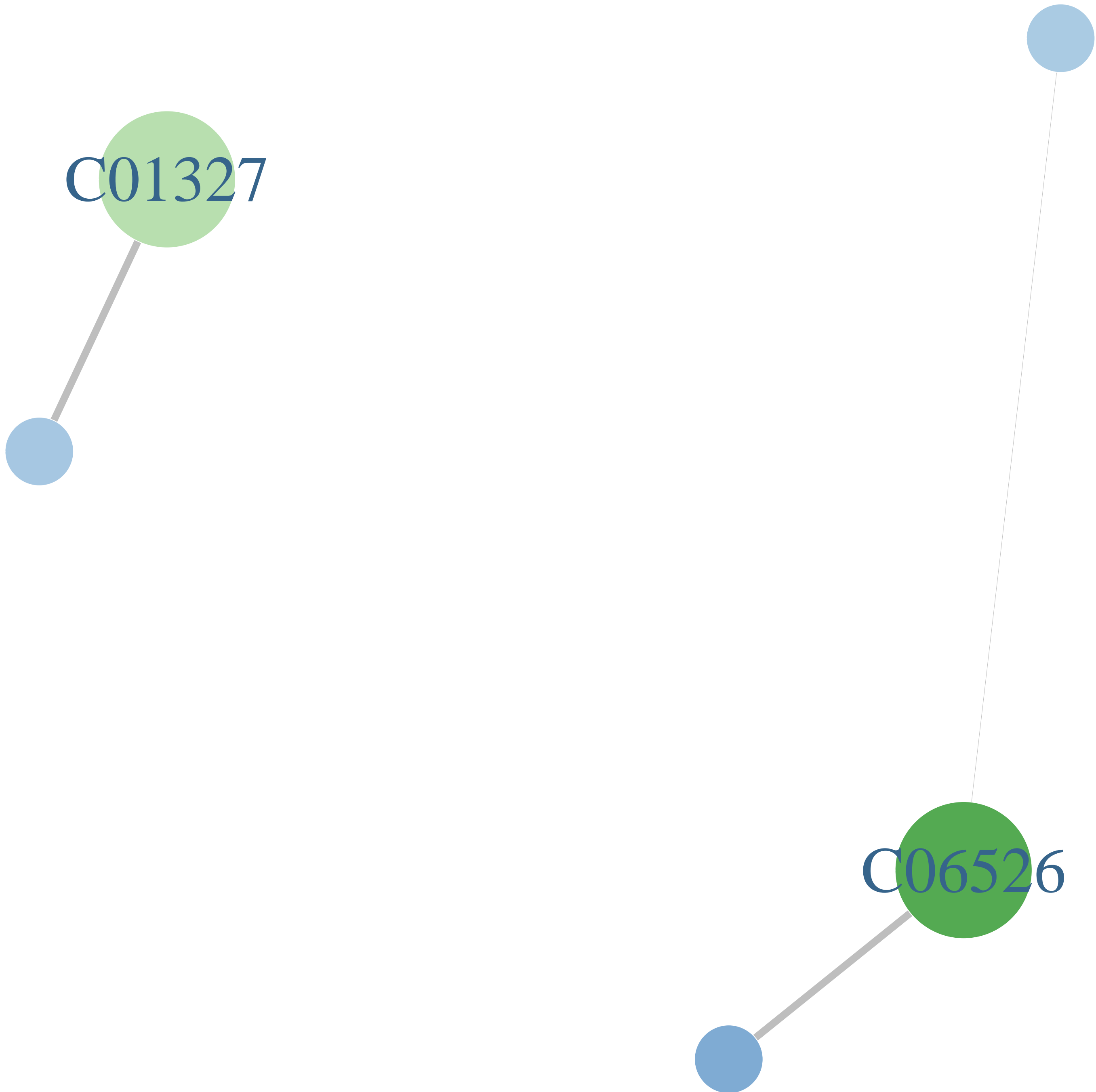
steroid biosynthesis ; p-value: 0.647



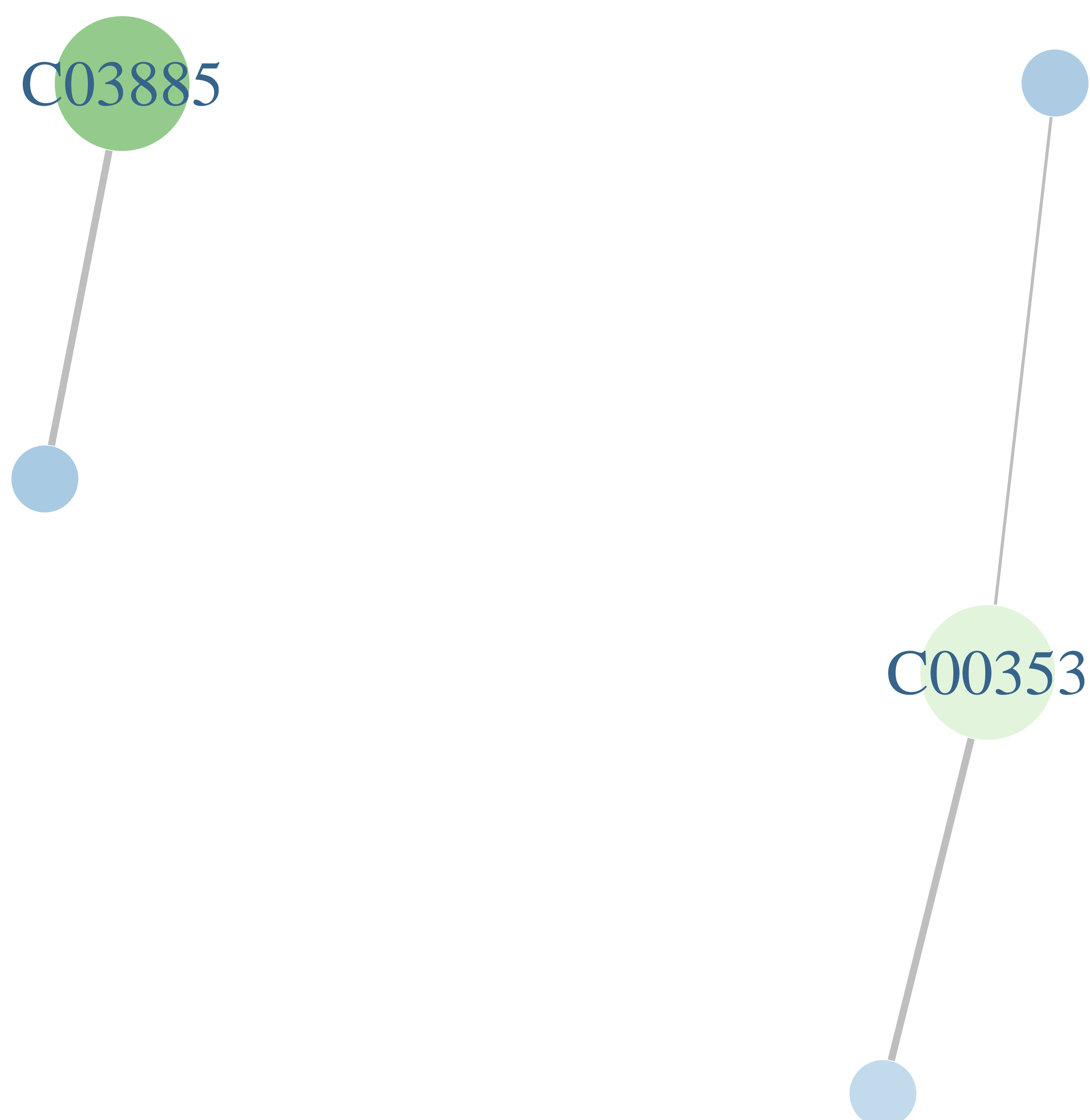
steroid hormone biosynthesis ; p-value: 0.91



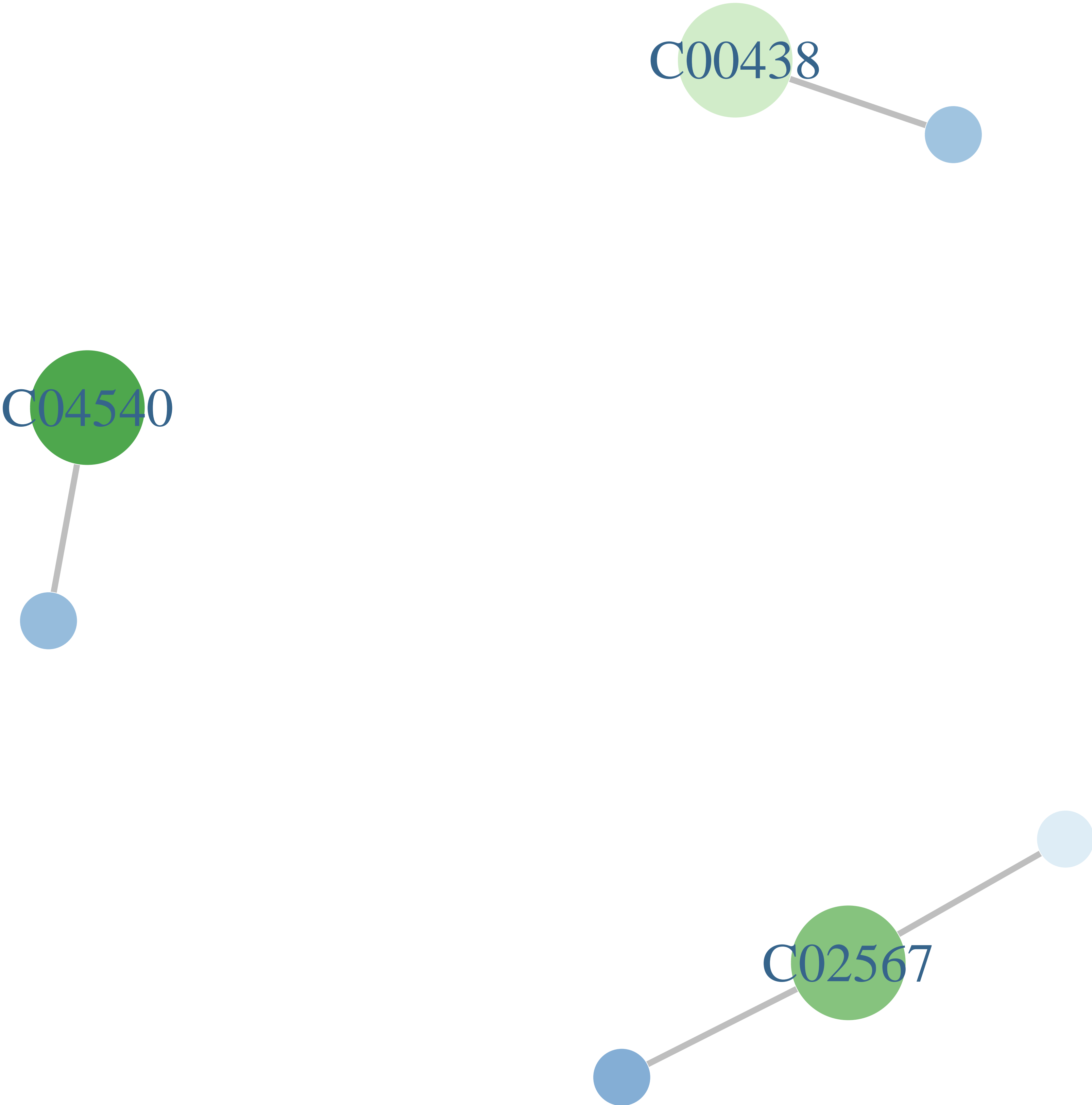
taste transduction ; p-value: 0.173



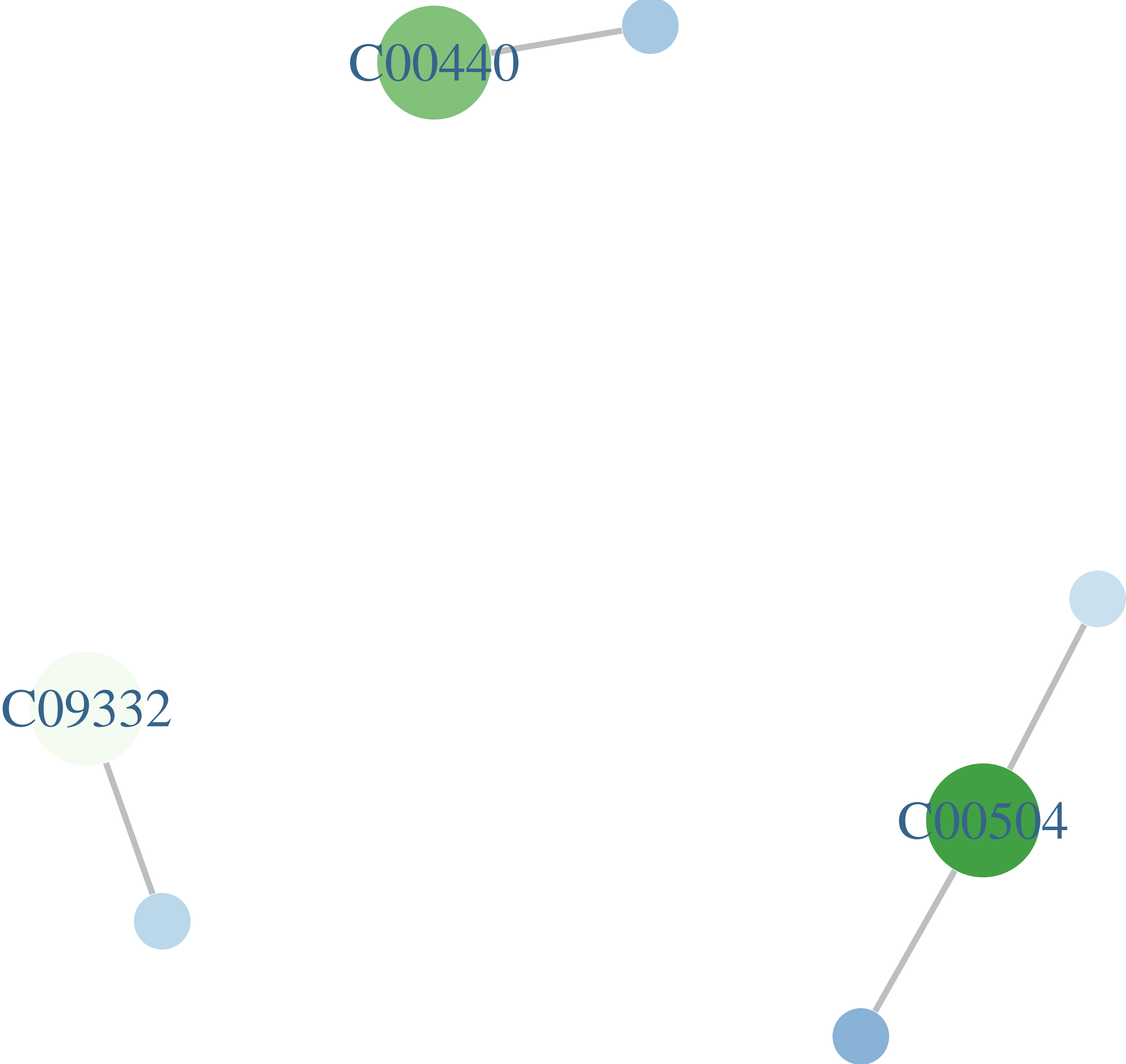
ubiquinone and other terpenoid–quinone biosynthesis ; p-value: 0.295



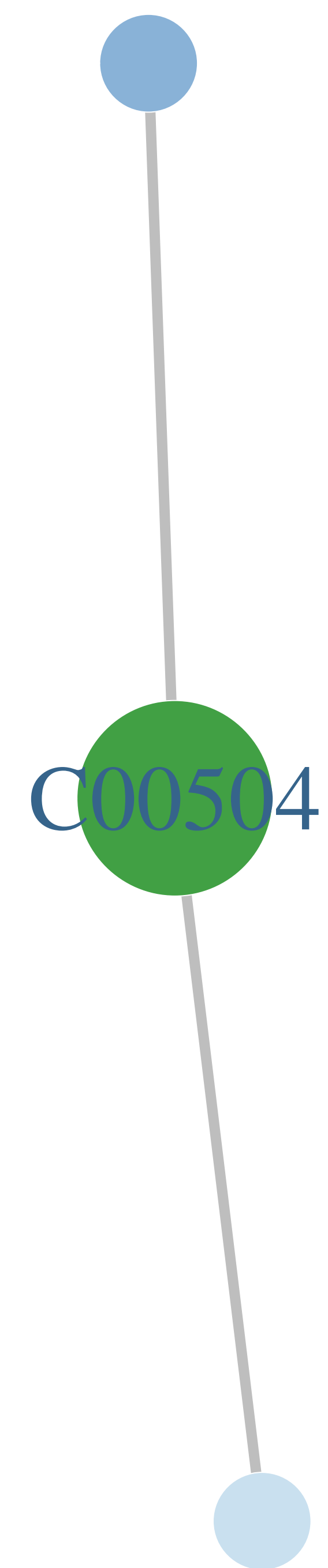
aspartate and asparagine metabolism ; p-value: 0.414



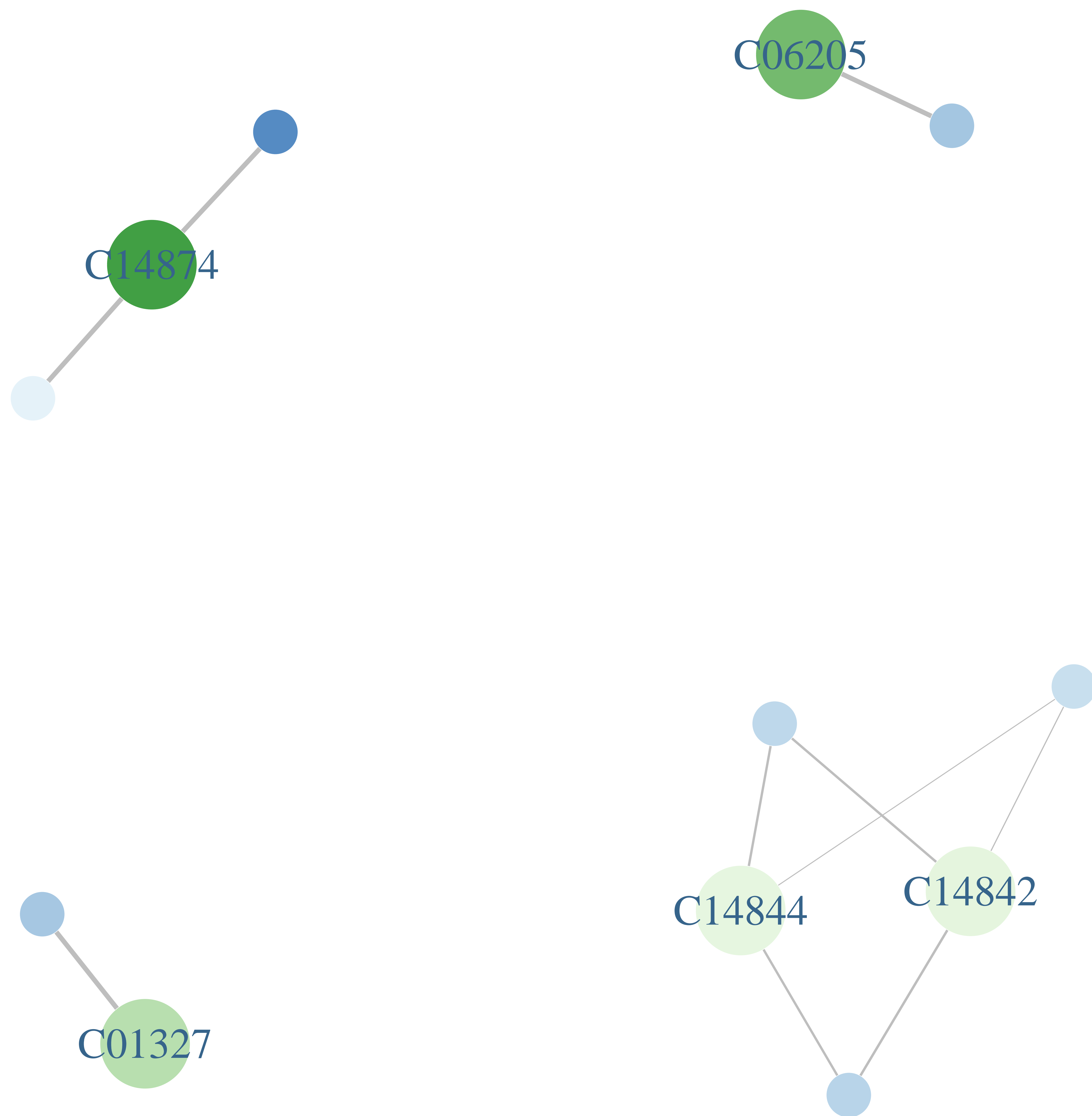
vitamin b9 (folate) metabolism ; p-value: 0.03



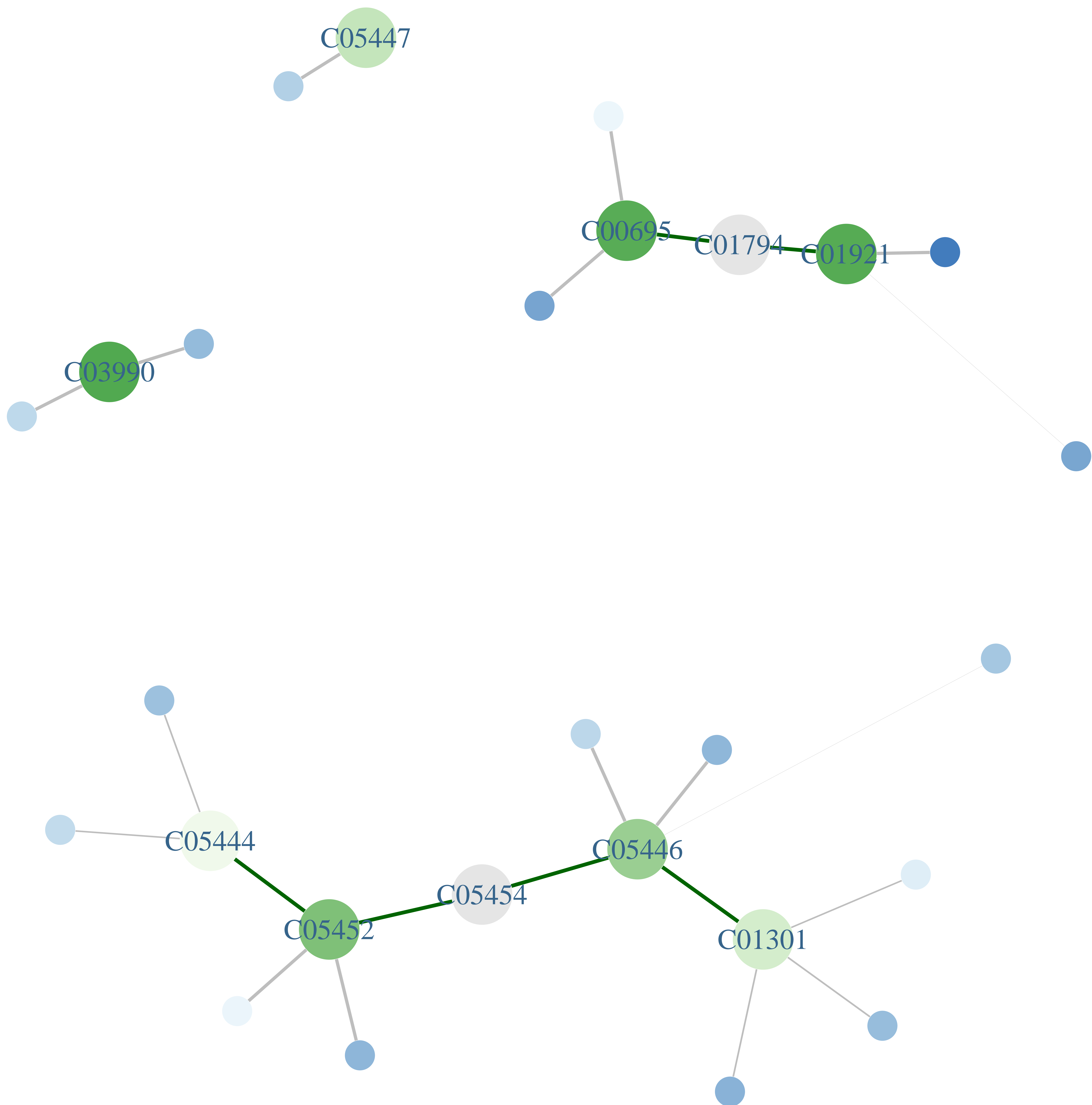
vitamin digestion and absorption ; p-value: 0.233



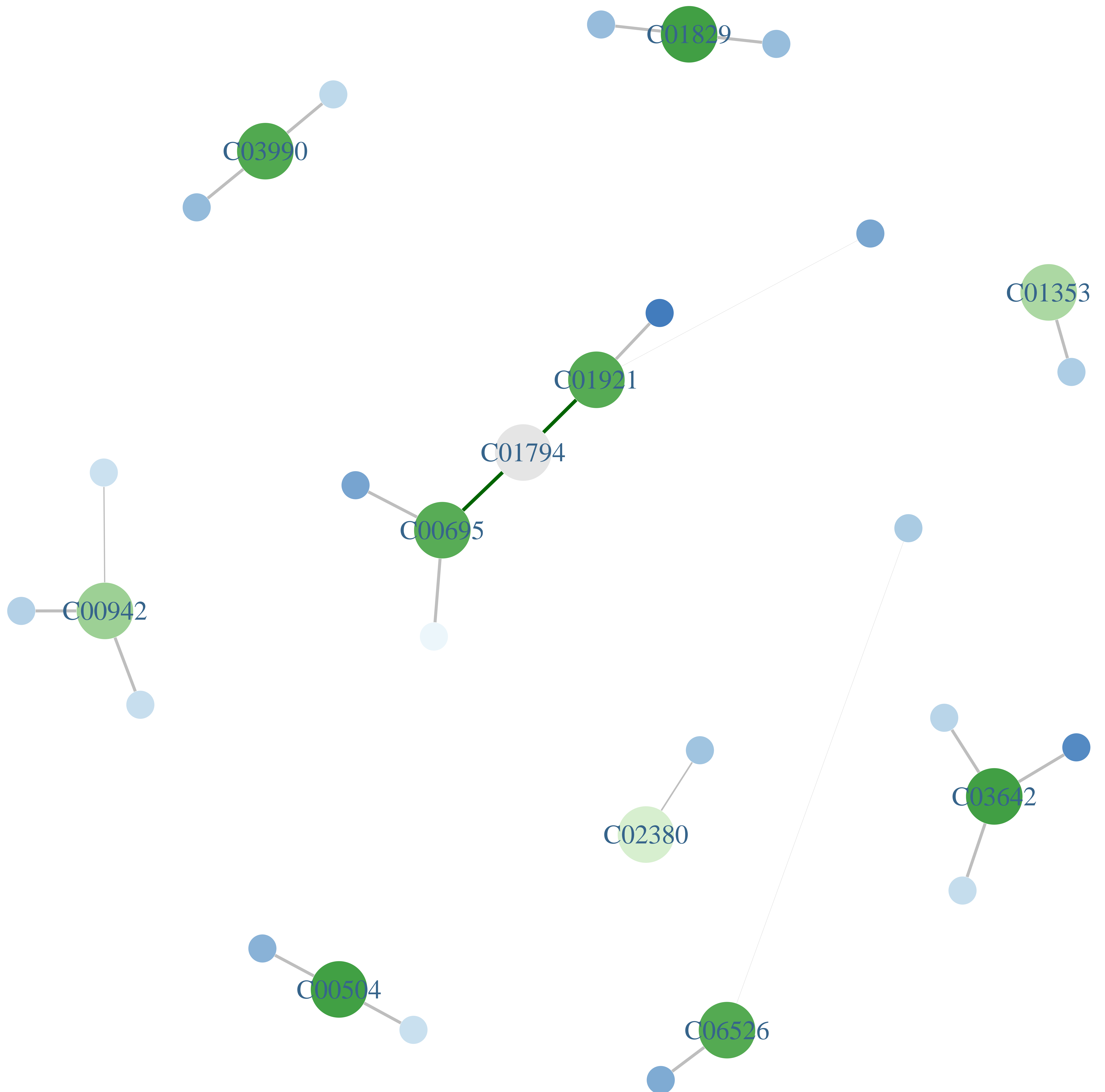
xenobiotics metabolism ; p-value: 0.086



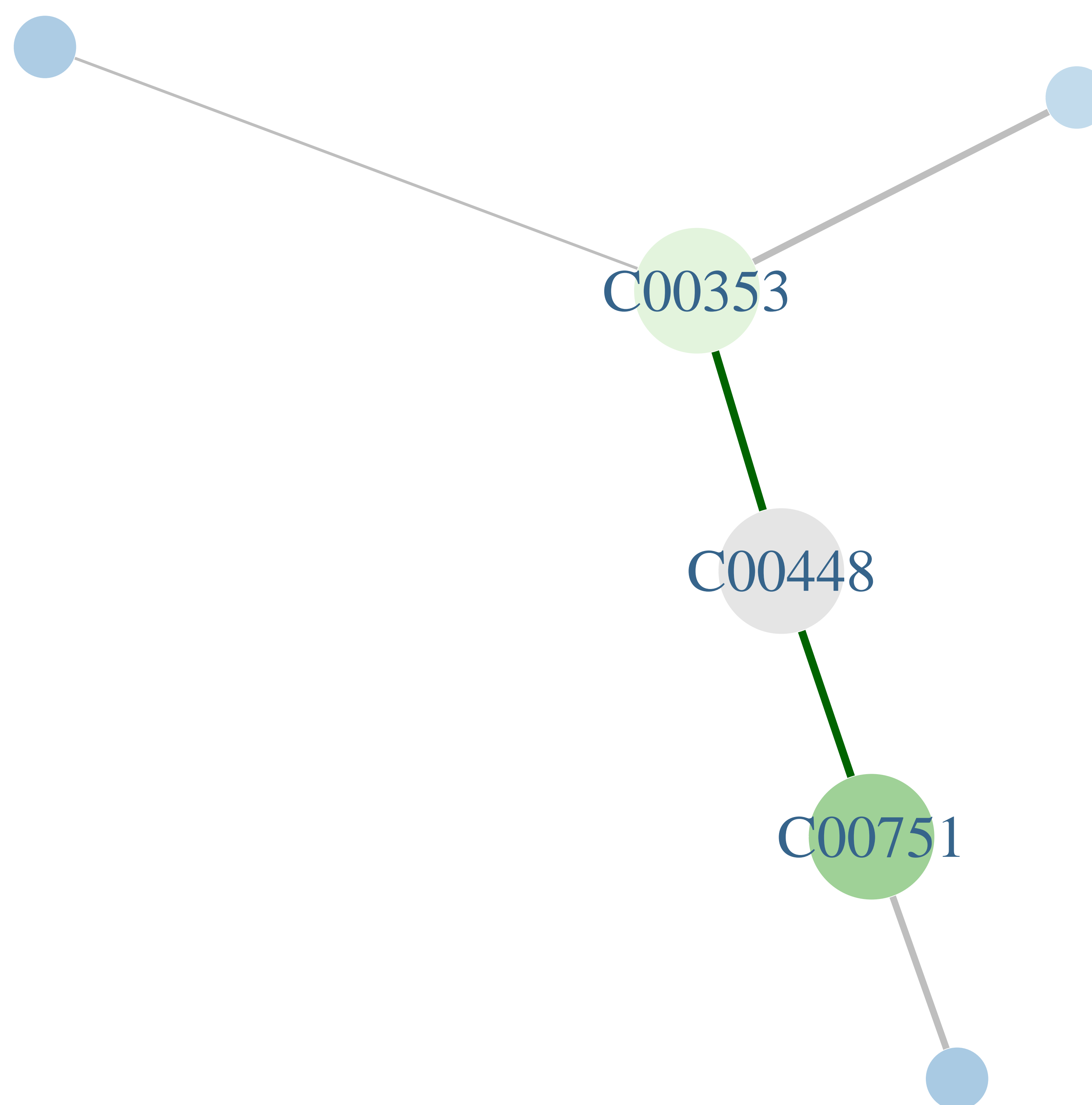
bile acid biosynthesis ; p-value: 0.003



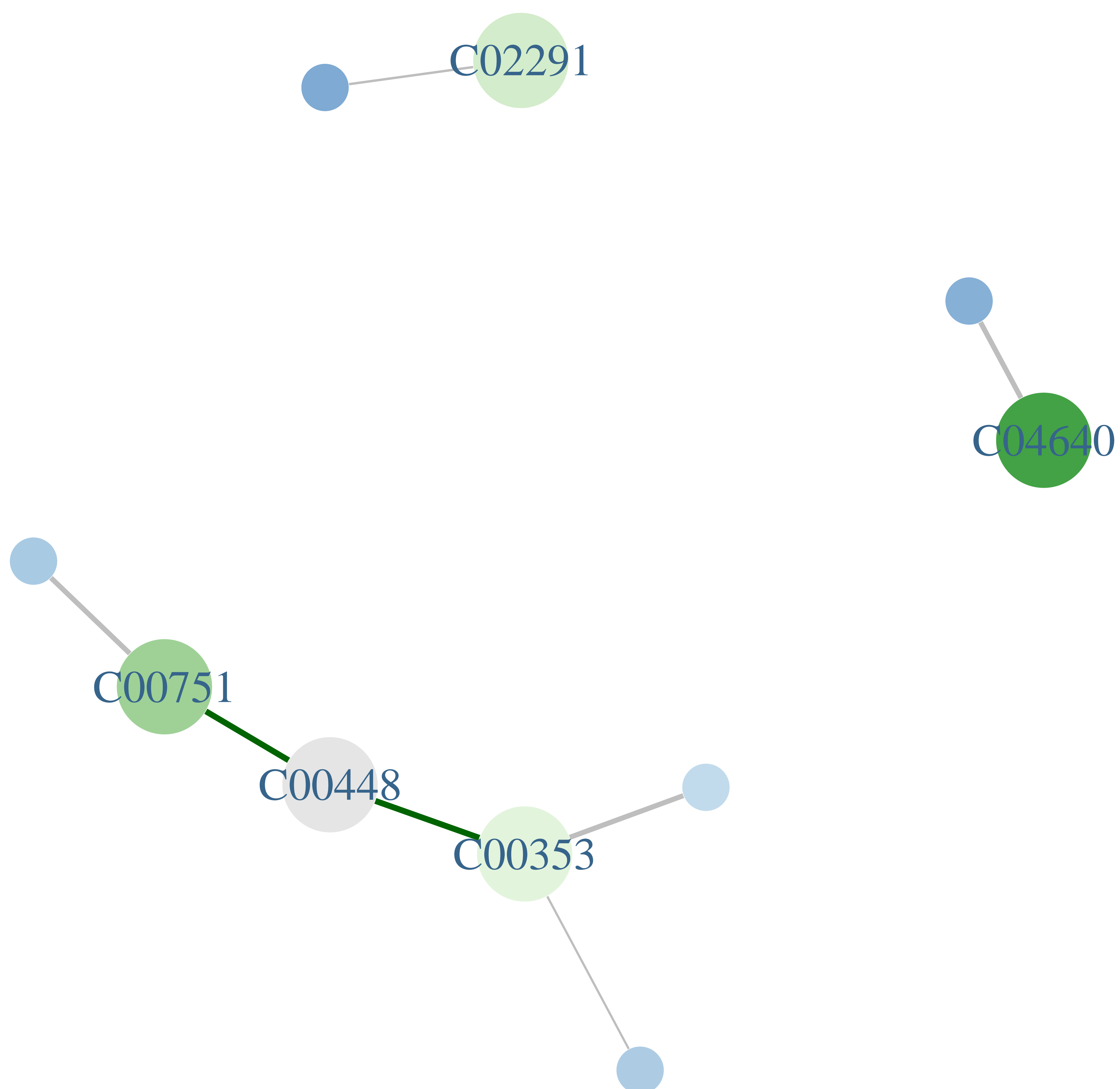
bile secretion ; p-value: 0



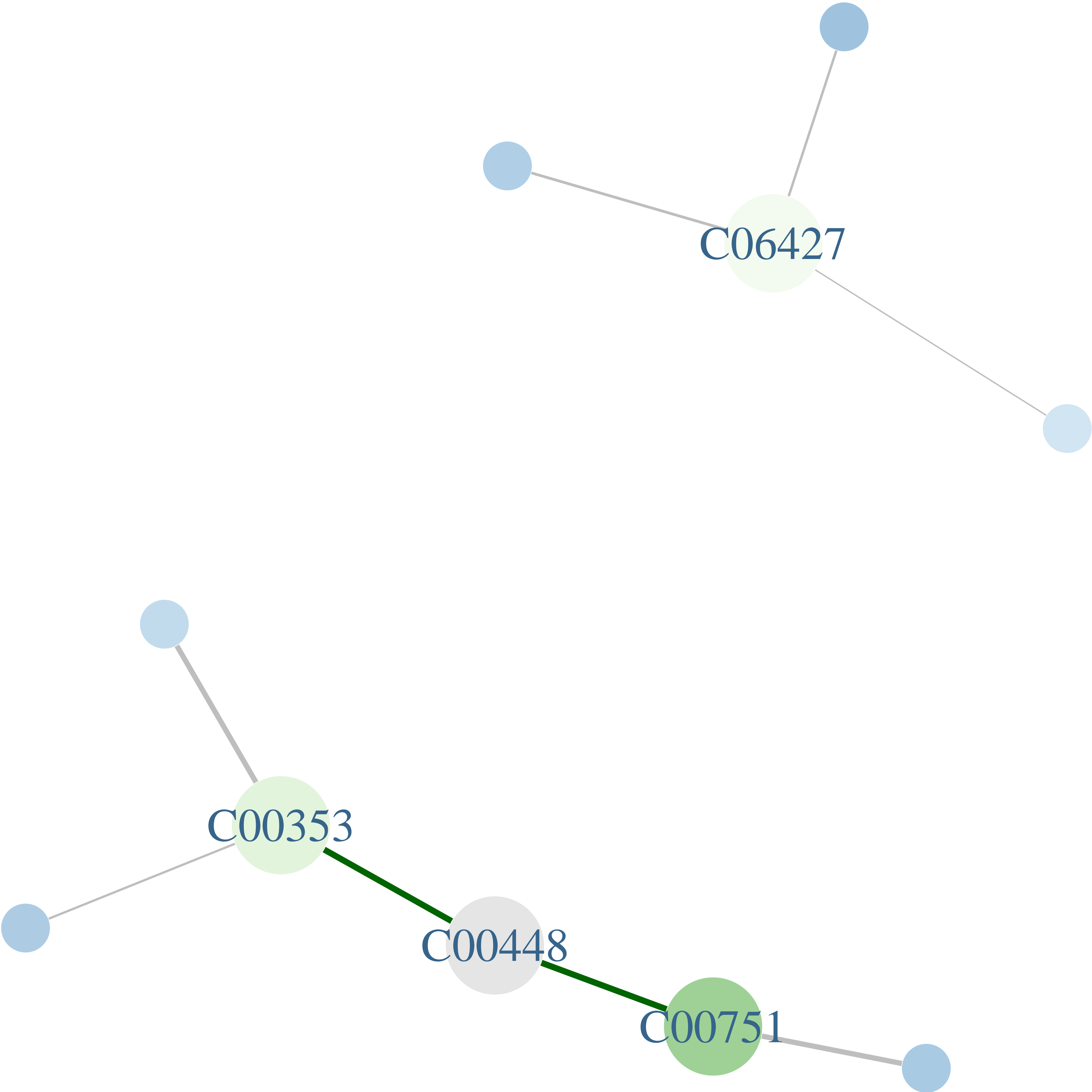
biosynthesis of alkaloids derived from terpenoid and polyketide ; p-value: 0.193



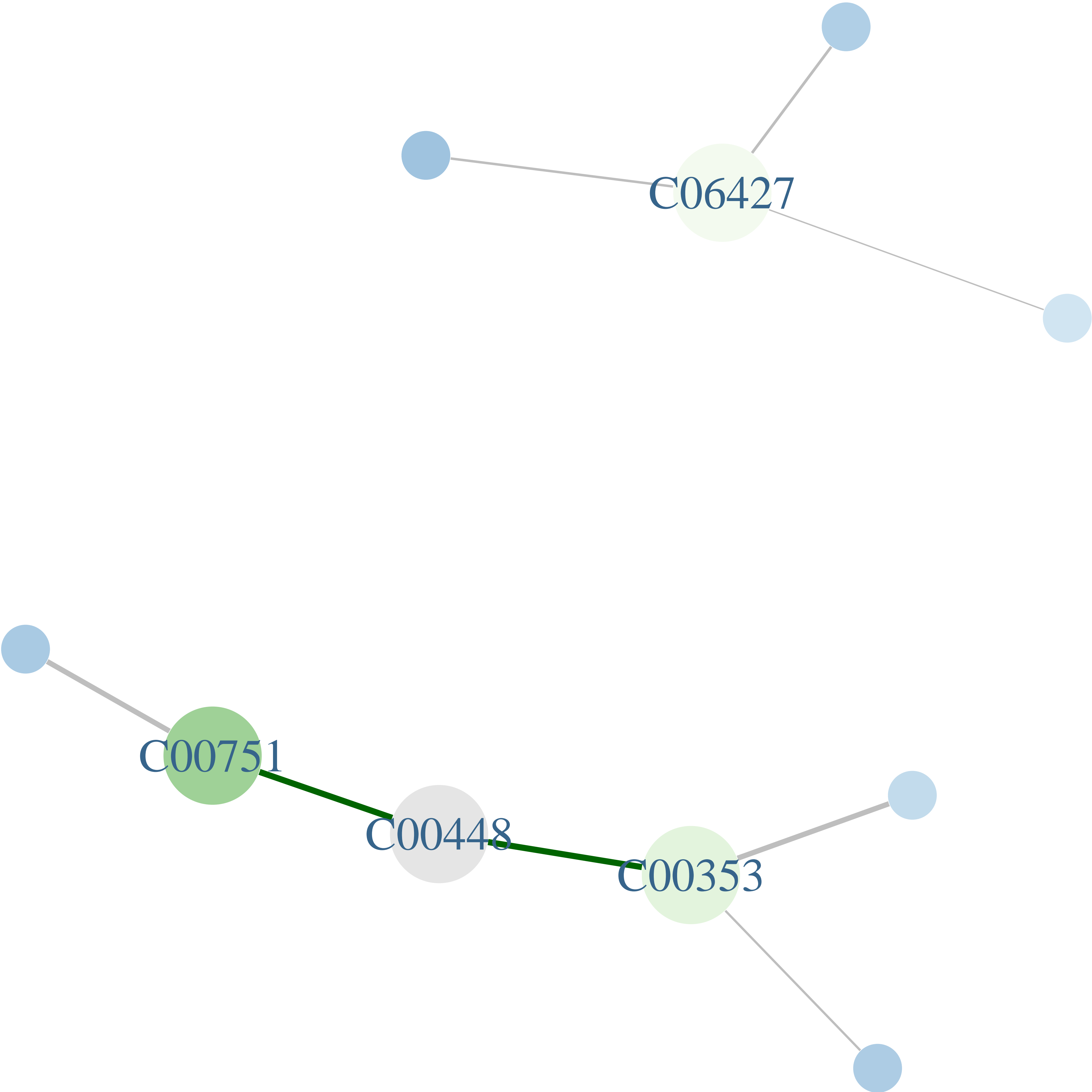
biosynthesis of antibiotics ; p-value: 0.952



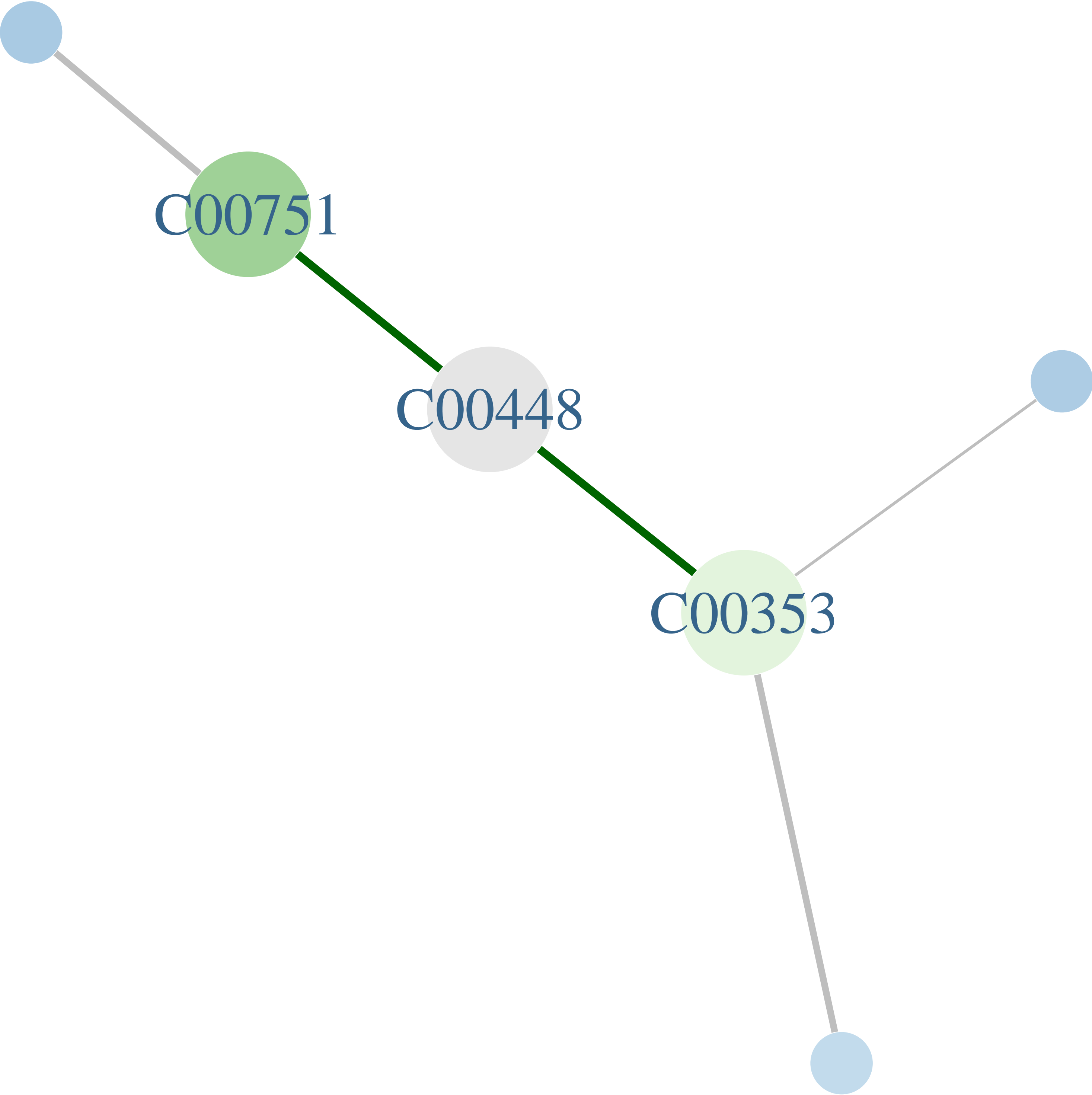
biosynthesis of plant hormones ; p-value: 0.219



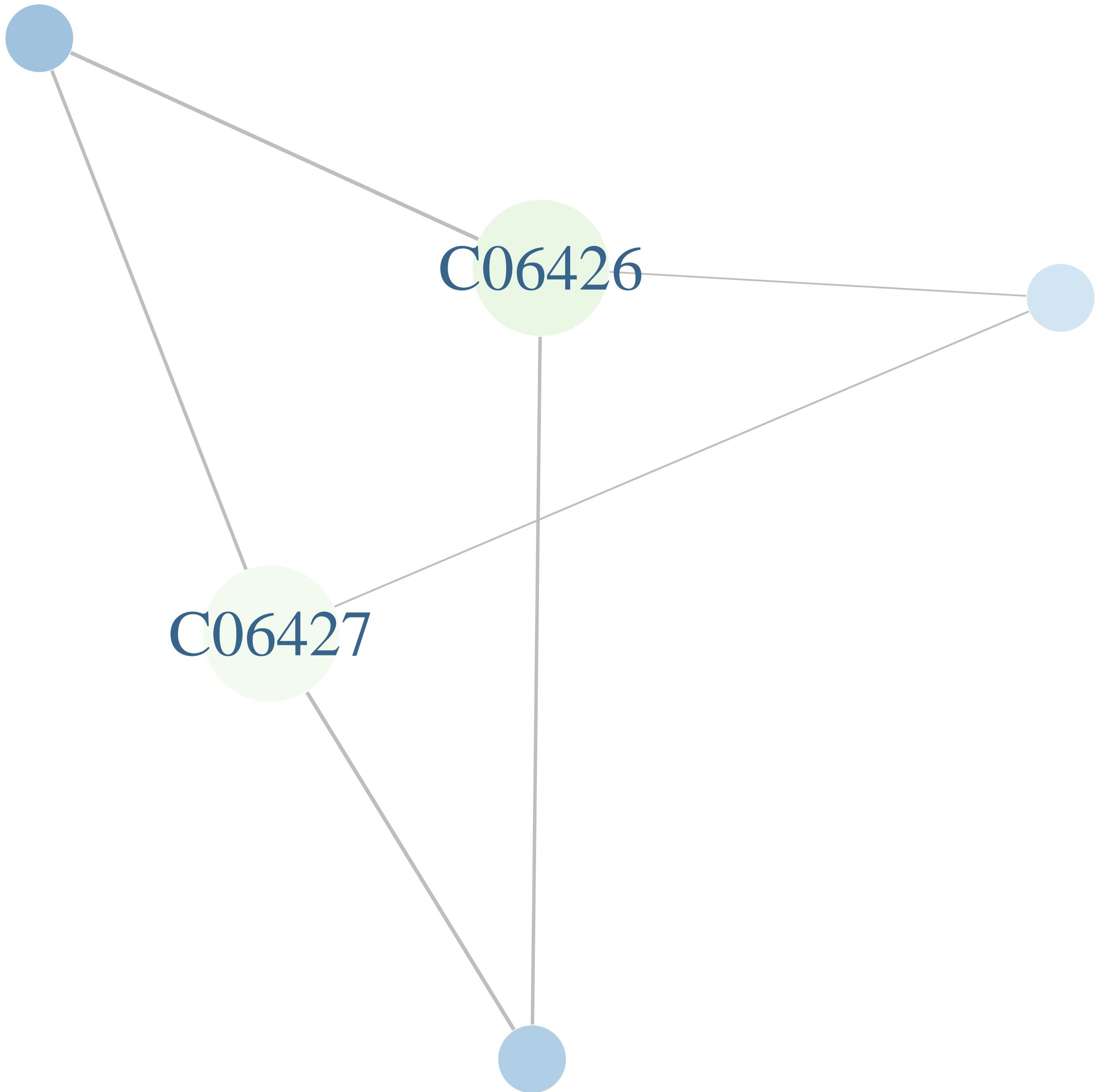
biosynthesis of plant secondary metabolites ; p-value: 0.742



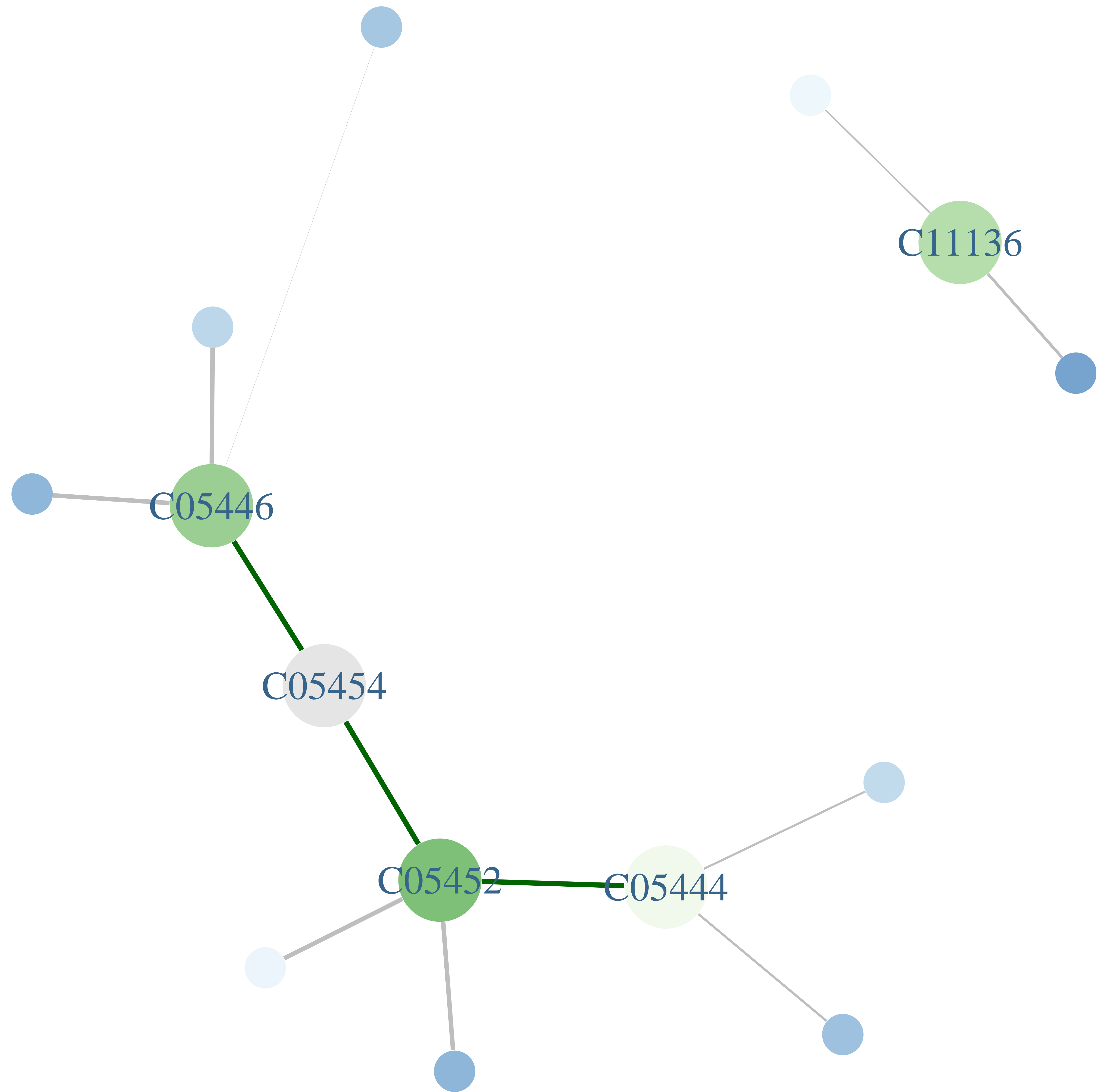
biosynthesis of terpenoids and steroids ; p-value: 0.315



biosynthesis of unsaturated fatty acids ; p-value: 0.275



c21-steroid hormone biosynthesis and metabolism ; p-value: 0.422



chemical carcinogenesis ; p-value: 0.219

