Table S1. Enriched functional terms for different age groups.

positive regulation of cellular process positive regulation of cellular process protein binding middle aged middle	GO term	Age group	p-value
protein binding regulation of cellular process regulation of developmental process middle aged nodes dissue development didle aged nodes sectyl-CoA metabolic process ancient adenyl nucleotide binding ancient nodele aged nodes adenyl ribonucleotide binding ancient node amine biosynthetic process ancient aspartate family amino acid metabolic process ancient aspartate family amino acid metabolic process ancient nodes arbohydrate derivative catabolic process ancient nodes arbohydrate derivative metabolic process ancient nodes arbohydrate derivative metabolic process ancient nodes arbohydrate metabolic process ancient nodes arbohydrate metabolic process ancient nodes arbohydrate derivative metabolic process ancient nodes arbohydrate metabolic process ancient ancient nodes arbohydrate metabolic process ancient nodes ancient nodes ancient nodes nodes notes note	anatomical structure morphogenesis	middle_aged	0.00727
regulation of cellular process regulation of developmental process regulation of developmental process regulation of developmental process acetyl-CoA metabolic process adenyl nucleotide binding ancient 0.00169 adenyl nucleotide binding ancient 3.26e-09 amine biosynthetic process ancient 3.26e-09 amine actabolic process ancient 0.00225 amine metabolic process ancient 0.00225 amine metabolic process ancient 0.0023 amine biosynthetic process ancient 0.0023 amine actabolic process ancient 0.0023 arine actabolic process ancient 0.00193 ATP metabolic process ancient 0.00744 biosynthetic process ancient 0.00744 biosynthetic process ancient 0.00744 biosynthetic process ancient 0.00017 carbohydrate derivative catabolic process ancient 0.00017 carbohydrate derivative metabolic process ancient 0.00017 carbohydrate derivative metabolic process ancient 0.00018 carbohydrate metabolic process ancient 1.4e-05 carbon-carbon lyase activity ancient 3.54e-06 carbon-oxygen lyase activity ancient 3.54e-06 carbon-xygen lyase activity ancient 1.03e-21 carboxy-lyase activity ancient 1.03e-21 carboxy-lyase activity ancient 2.38e-13 catalytic actionity catabolic process ancient 1.00024 carboxy-lyase activity ancient 1.27e-30 cellular amino acid biosynthetic process ancient 1.26e-09 cellular amino acid biosynthetic process ancient 1.26e-09 cellular amino acid metabolic process ancient 1.26e-09 cellular amino acid biosynthetic process ancient 1.27e-30 cellular aromatic compound metabolic process ancient 1.27e-30 cellular aromatic compound metabolic process ancient 1.27e-30 cellular aromatic compound metabolic process ancient 1.27e-30 cellular metabolic process ancient 1.27e-30 cellular metabolic process ancient 1.27e-30 cellular metabolic process ancient 5.46e-06 cellular nutrogen compound biosynthetic process ancient 5.46e-06 cellular nutrogen compound catabolic pro	positive regulation of cellular process	middle_aged	0.00346
regulation of developmental process tissue development ancient middle_aged acetyl-CoA metabolic process adenyl nucleotide binding adenyl ribonucleotide binding adenyl ribonucleotide binding annie biosynthetic process annient ancient aspartate family amino acid metabolic process ancient 5.41e-21 aspartate family amino acid metabolic process ancient ancient 2.36e-34 ancient biosynthetic process ancient ancient 2.36e-34 ancient carbohydrate biosynthetic process ancient ancient 2.36e-34 ancient 2.36e-34 ancient ancie	protein binding	middle_aged	0.00631
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Table S1 - continued from previous page

GO term	Age group	p-value
cellular respiration	ancient	0.0081
coenzyme biosynthetic process	ancient	2.77e-08
coenzyme metabolic process	ancient	7.84e-20
cofactor biosynthetic process	ancient	3.26e-08
cofactor catabolic process	ancient	0.00193
cofactor metabolic process	ancient	1.9e-17
cytoplasm	ancient	8.9e-09
cytoplasmic part	ancient	1.52e-10
cytosol	ancient	0.000178
cytosolic part	ancient	1.63e-06
dicarboxylic acid metabolic process	ancient	0.000403
energy derivation by oxidation of organic compounds	ancient	6.56e-06
gene expression	ancient	2.2e-08
generation of precursor metabolites and energy	ancient	6.03e-10
glucose catabolic process	ancient	0.000183
glucose metabolic process	ancient	3.8e-05
glutamine family amino acid metabolic process	ancient	0.000382
heterocycle biosynthetic process	ancient	9.02e-15
heterocycle catabolic process	ancient	6.34e-05
heterocycle metabolic process	ancient	5.49e-28
hexose catabolic process	ancient	1.72e-05
hexose metabolic process	ancient	2.9e-07
hydrolase activity	ancient	8.29e-07
hydrolase activity, acting on acid anhydrides	ancient	0.000662
hydrolase activity, acting on acid anhydrides, in phosphorus-	ancient	0.000662
containing anhydrides	different	0.000002
hydrolase activity, acting on carbon-nitrogen (but not peptide) bonds	ancient	0.0081
intracellular	ancient	0.0001
intracellular part	ancient	0.00112
isomerase activity	ancient	0.00308
large ribosomal subunit	ancient	0.00308
lyase activity	ancient	7.91e-10
macromolecule biosynthetic process	ancient	9.97e-09
macromolecule metabolic process	ancient	0.00217
metabolic process	ancient	2.95e-35
microbody	ancient	0.00928
mitochondrial matrix	ancient	1.02e-07
mitochondrial matrix mitochondrial part	ancient	2.73e-08
mitochondrian part mitochondrian	ancient	
		1.23e-14
molecular function	ancient	7.68e-08
monocarboxylic acid metabolic process	ancient	0.00421
monosaccharide catabolic process	ancient	3.54e-06
monosaccharide metabolic process	ancient	2.11e-07
ncRNA metabolic process	ancient	8.14e-07
ncRNA processing	ancient	8.43e-05
nicotinamide nucleotide metabolic process	ancient	0.00926

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GO term	Age group	p-value
nitrogen compound metabolic process	ancient	1.37e-26
nucleobase-containing compound biosynthetic process	ancient	1.32e-08
nucleobase-containing compound catabolic process	ancient	7.16e-05
nucleobase-containing compound metabolic process	ancient	1.56e-13
nucleobase-containing small molecule metabolic process	ancient	3.05e-23
nucleoside metabolic process	ancient	0.000124
nucleoside phosphate metabolic process	ancient	1.56e-20
nucleoside triphosphate catabolic process	ancient	0.00216
nucleoside triphosphate metabolic process	ancient	2.37e-05
nucleotide binding	ancient	3.1e-06
nucleotide biosynthetic process	ancient	4.32e-05
nucleotide catabolic process	ancient	0.000317
nucleotide metabolic process	ancient	3.32e-20
organic acid biosynthetic process	ancient	4.16e-08
organic acid catabolic process	ancient	0.00639
organic acid metabolic process	ancient	1.23e-22
organic substance metabolic process	ancient	3.19e-08
oxidation-reduction process	ancient	1.16e-08
oxidoreductase activity	ancient	1.46e-06
oxidoreductase activity, acting on CH-OH group of donors	ancient	0.000128
oxidoreductase activity, acting on the CH-OH group of donors, NAD	ancient	0.00193
or NADP as acceptor		
oxidoreduction coenzyme metabolic process	ancient	0.000403
oxoacid metabolic process	ancient	2.51e-22
plastid	ancient	0.000132
polysaccharide biosynthetic process	ancient	8.35e-05
primary metabolic process	ancient	3.35e-24
purine-containing compound biosynthetic process	ancient	6.18e-05
purine-containing compound metabolic process	ancient	6.56e-13
purine nucleoside metabolic process	ancient	0.00313
purine nucleoside triphosphate catabolic process	ancient	0.00803
purine nucleoside triphosphate metabolic process	ancient	0.000325
purine nucleotide binding	ancient	0.000327
purine nucleotide biosynthetic process	ancient	0.0038
purine nucleotide catabolic process	ancient	0.00111
purine nucleotide metabolic process	ancient	1.6e-11
purine ribonucleoside metabolic process	ancient	0.00313
purine ribonucleoside triphosphate metabolic process	ancient	0.000619
purine ribonucleotide binding	ancient	0.000327
purine ribonucleotide catabolic process	ancient	0.00417
purine ribonucleotide metabolic process	ancient	3.26e-09
pyridine-containing compound metabolic process	ancient	0.00424
pyridine nucleotide metabolic process	ancient	0.00424
pyrophosphatase activity	ancient	0.00111
ribonucleoprotein complex	ancient	0.00565
ribonucleoside metabolic process	ancient	0.000382
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GO term	Age group	p-value
ribonucleoside triphosphate metabolic process	ancient	0.000325
ribonucleotide binding	ancient	0.000327
ribonucleotide catabolic process	ancient	0.00417
ribonucleotide metabolic process	ancient	4.23e-09
ribosomal subunit	ancient	1.57e-09
ribosome	ancient	5.52e-09
RNA binding	ancient	0.00321
small molecule binding	ancient	2.74e-05
small molecule biosynthetic process	ancient	1.15e-09
small molecule catabolic process	ancient	0.0019
small molecule metabolic process	ancient	3.4e-34
structural constituent of ribosome	ancient	3.01e-08
sulfur compound biosynthetic process	ancient	0.00221
sulfur compound metabolic process	ancient	4.51e-05
transferase activity	ancient	2.35e-07
translation	ancient	8.11e-10
tRNA metabolic process	ancient	3.19e-07