

## Table S4

metabolic, catabolic, biosynthetic processes, metabolite transport  
sporulation, meiosis, reproduction, differentiation  
detoxification of reactive oxygen species, response to stress and stimulus  
receptor linked signal transduction  
maintanence of telomere or condensed chromosome

Gene Ontology category	avg. Set1
allantoin metabolic process	1.01550 v
allantoin catabolic process	1.01550 v
heterocycle catabolic process	1.01550 v
solute:cation symporter activity	0.99083 v
symporter activity	0.99083 v
fructose transmembrane transporter activity	0.93482 v
mannose transmembrane transporter activity	0.93482 v
aryl-alcohol dehydrogenase activity	0.93438
sugar transmembrane transporter activity	0.89429 v
carbohydrate transmembrane transporter activity	0.85789 v
hexose transmembrane transporter activity	0.85085 v
monosaccharide transmembrane transporter activity	0.85085 v
glucose transmembrane transporter activity	0.85085 v
glucosidase activity	0.83744 v
vitamin B6 metabolic process	0.83314 v
pyridoxine metabolic process	0.83314 v
carbohydrate transport	0.81267 v
monosaccharide transport	0.79281 v
hexose transport	0.79281 v
glutathione metabolic process	0.78500
meiotic DNA double-strand break formation	0.73417 v
cysteine-type peptidase activity	0.71318
peroxisomal matrix	0.71278 v
siderophore transport	0.70950
pre-autophagosomal structure	0.70850 v
aldehyde metabolic process	0.69267
oxidoreductase activity, oxidizing metal ions, NAD or NADP as acceptor	0.69233 v
ferric-chelate reductase activity	0.69233 v
heterocycle metabolic process	0.68933
response to toxin	0.68543
prospore membrane	0.68415 v
immature spore	0.68415 v
prospore	0.68415 v
hydrolase activity, hydrolyzing O-glycosyl compounds	0.68000
iron ion transport	0.67556
polyamine transmembrane transporter activity	0.67167
secondary metabolic process	0.66617
thiamin metabolic process	0.66565 v
DNA catabolic process, endonucleolytic	0.65825 v

aldo-keto reductase activity	0.65783
unfolded protein binding	0.65777
spore wall assembly (sensu Fungi)	0.65677 v
spore wall assembly	0.65677 v
reproductive sporulation	0.64264 v
sporulation (sensu Fungi)	0.64264 v
thiamin and derivative metabolic process	0.64017 v
secondary active transmembrane transporter activity	0.62729
thiamin biosynthetic process	0.62719 v
thiamin and derivative biosynthetic process	0.62719 v
G-protein coupled receptor protein signaling pathway	0.62629 v
cell surface receptor linked signal transduction	0.62629 v
response to nutrient	0.62314
oxidoreductase activity, oxidizing metal ions	0.62263 v
DNA catabolic process	0.62189 v
sporulation	0.61975 v
nucleobase metabolic process	0.61400
polyamine transport	0.61129
hydrolase activity, acting on glycosyl bonds	0.60574
de novo pyrimidine base biosynthetic process	0.60517
sister chromatid cohesion	0.60267
regulation of transcription by carbon catabolites	0.60117 v
vitamin transport	0.59767
amine transmembrane transporter activity	0.59700
reproductive process in single-celled organism	0.59188 v
reproductive cellular process	0.59188 v
monocarboxylic acid transmembrane transporter activity	0.59175
spore wall	0.59067 v
spore wall (sensu Fungi)	0.59067 v
vitamin biosynthetic process	0.58707 v
water-soluble vitamin biosynthetic process	0.58707 v
oxidoreductase activity, acting on the CH-OH group of donors, NAD or NADP as acceptor	0.58570
cellular developmental process	0.58389 v
cell differentiation	0.58389 v
di-, tri-valent inorganic cation transport	0.58262
oxidoreductase activity, acting on CH-OH group of donors	0.58129
synapsis	0.57100 v
oxidoreductase activity, acting on peroxide as acceptor	0.57000
peroxidase activity	0.57000
reproductive process	0.56892 v
vitamin metabolic process	0.56298
water-soluble vitamin metabolic process	0.56298
glycogen metabolic process	0.56242
NADH metabolic process	0.55783
carboxy-lyase activity	0.55590
reproduction of a single-celled organism	0.55397
meiosis	0.55351 v
meiotic cell cycle	0.55351 v
M phase of meiotic cell cycle	0.55351 v

<b>sulfur metabolic process</b>	0.54413
<b>meiotic gene conversion</b>	0.54367 v
transcription factor binding	0.54250
<b>sulfur compound biosynthetic process</b>	0.54120
<b>active transmembrane transporter activity</b>	0.53997
<b>nitrogen utilization</b>	0.53388
<b>pyrimidine base biosynthetic process</b>	0.53100
<b>cellular carbohydrate catabolic process</b>	0.52968
<b>carbohydrate catabolic process</b>	0.52968
<b>condensed nuclear chromosome</b>	0.52944 v
<b>transition metal ion transport</b>	0.52924
plasma membrane	0.52275
RNA methyltransferase activity	0.52000
<b>carbon-carbon lyase activity</b>	0.51307
<b>fermentation</b>	0.50950 v
<b>telomeric DNA binding</b>	0.50667 v
endodeoxyribonuclease activity	0.50644 v
<b>meiosis I</b>	0.50587 v
<b>transition metal ion transmembrane transporter activity</b>	0.50308
<b>reproduction</b>	0.50206 v
<b>cell division</b>	0.50160
deoxyribonuclease activity	0.50127
<b>energy reserve metabolic process</b>	0.50080
<b>O-acyltransferase activity</b>	0.50063