

Purine Biosynthesis

Adenosine

Oxidative Stress

Glutathione

CoA Acyltransferases

Thymidine

Peptidoglycan biosynthesis

Mevalonate

lipid II

lipid I

lipid I

primary metabolism

Pyrimidine Biosynthesis

Cytosine

CoA Acyltransferases

Thymidine

Peptidoglycan biosynthesis

Mevalonate

lipid II

lipid I

lipid I

primary metabolism

Pyrimidine Biosynthesis

Cytosine

CoA Acyltransferases

Thymidine

Peptidoglycan biosynthesis

Mevalonate

lipid II

lipid I

lipid I

primary metabolism

Pyrimidine Biosynthesis

Cytosine

CoA Acyltransferases

Thymidine

Peptidoglycan biosynthesis

Mevalonate

lipid II

lipid I

lipid I

Maltose

amino acid metabolism: biosynthesis and catabolism

proline

glutamate

glutamine

Arginine

lysine

leucine

isoleucine

valine

Xylose

asparagine

aspartate

threonine

glycine

serine

alanine

cysteine

methionine

glycogen

thioredoxin

C1 - THF pool

phenylalanine

tyrosine

tryptophane

Histidine

Porphyrogen

Cardiolipin

Chitin

glutathione

riboflavin

Coenzyme A

glutathione

riboflavin

Coenzyme A

glutathione

riboflavin

Coenzyme A

glutathione

Additional file 3
Supporting Information for:
Genome-scale Metabolic Model for *Lactococcus lactis* MG1363 and
its Application to the Analysis of Flavor Formation
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