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## Unique proteins by lactobacillus Group

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### Group A

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response regulator  
hypothetical protein  
ATP-dependent helicase  
ABC transporter ATP binding and permease protein  
hypothetical protein  
amino acid permease  
putative cell shape determining protein  
chromosome replication initiation  
hypothetical protein  
cell division protein  
ribose operon repressor  
hypothetical protein  
hypothetical protein  
transketolase, beta subunit  
pyridine mercuric reductase  
ATP-dependent exonuclease subunit B  
putative multidrug efflux permease  
2-deoxyribosyltransferase  
hypothetical protein  
putative ribose operon repressor  
hypothetical protein  
cation transporter P-ATPase  
putative HAD superfamily hydrolase  
hypothetical protein  
hypothetical protein  
alkylphosphonate ABC transporter  
glycosyl transferase  
alkaline phosphatase  
transcriptional regulator, glucose kinase  
putative glycosyl transferase  
hypothetical protein  
sucrose phosphorylase  
cell division regulator  
ABC transporter ATPase and permease protein  
putative glucan mod. protein

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### Group B

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chloride channel protein  
PTS system galactitol-specific IIC component  
transport protein  
hypothetical protein  
hypothetical protein  
putative transport protein

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### Group C

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Beta-galactosidase/beta-glucuronidase  
2-dehydro-3-deoxygluconokinase

hypothetical protein  
permease of the major facilitator superfamily  
cAMP-binding protein - catabolite gene activator and regulatory subunit of cAMP-dependent protein kinase  
transcriptional regulator  
Amino acid transporter  
Na<sup>+</sup>/xyloside symporter related transporter  
Predicted membrane protein

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#### **Group D**

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transcription regulator  
purine transport regulator  
2-keto-3-deoxygluconate kinase  
transport protein  
teichoic acid biosynthesis protein  
phosphonates ABC transporter, permease protein  
oxidoreductase  
cell surface hydrolase, membrane-bound (putative)  
transport protein  
citrate lyase regulator  
transcription regulator  
unknown  
sulfate adenylyltransferase  
transcription regulator  
transcription regulator  
unknown  
UDP-N-acetylmuramoylalanyl-D-glutamate--2, 6-diaminopimelate ligase  
phosphoglycolate phosphatase  
ABC transporter, substrate binding protein  
transcription regulator  
unknown  
(2-aminoethyl)phosphonate--pyruvate aminotransferase  
ABC transporter, ATP-binding protein  
response regulator PInC, activator  
glycosyltransferase  
myo-inositol 2-dehydrogenase  
prophage Lp2 protein 2, integrase  
transcription regulator  
glycosyltransferase  
purine/pyrimidine phosphoribosyltransferase (putative)  
unknown  
cobalt transport protein  
transcription regulator  
transcription regulator (putative)  
3-phosphoshikimate 1-carboxyvinyltransferase  
transcription regulator  
transcription regulator  
transport protein  
integrase/recombinase, fragment (putative)  
histidine protein kinase; sensor protein  
glycosyltransferase  
prophage Lp1 protein 52, endolysin  
histidinol-phosphate aminotransferase

histidine--tRNA ligase (putative)  
amino acid transport protein  
glycosyltransferase (rhamnosyltransferase)  
nitrate ABC transporter, permease protein  
unknown  
unknown  
transcription regulator  
DegV family protein  
transport protein  
transport protein  
bifunctional protein-glutamate kinase; acetyl-ornithine deacetylase (putative) 435955:437793 forward  
myo-inositol 2-dehydrogenase  
transcription regulator  
transcription regulator  
cell surface hydrolase  
cell surface protein precursor  
poly(glycerol-phosphate) alpha-glucosyltransferase  
rhamnulokinase  
sugar kinase and transcription regulator  
2-haloacid dehalogenase (putative)  
transcription regulator  
glycosyltransferase  
transcription regulator  
transcription regulator  
non-ribosomal peptide synthetase NpsB  
glucose-1-phosphate adenylyltransferase, subunit  
5-methyltetrahydropteroyltriglutamate-- homocysteine S-methyltransferase  
extracellular protein  
transport protein  
transcription regulator  
aminotransferase with N-terminal regulator domain  
oxidoreductase  
unknown  
glycosyltransferase

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**Group E**

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Amino acid ABC transporter, substrate binding protein  
marR family Transcriptional regulator  
Cell division protein FtsL  
Hypothetical membrane protein  
Chromosome replication initiation / membrane attachment protein  
DNA topoisomerase III  
Conserved hypothetical protein  
oligoendopeptidase F  
Hypothetical membrane protein

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**Group X**

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hypothetical protein  
Predicted phosphatase  
transcriptional antiterminator, BglG family  
aminotransferase  
permease of the major facilitator superfamily

Uncharacterized membrane-bound protein conserved in bacteria  
Nucleotidyltransferase/DNA polymerase for DNA repair  
pyruvate phosphate dikinase  
hypothetical protein  
permease of the major facilitator superfamily