

Women's health is a team effort: probiogenomics supports the development of a multi-species vaginal probiotic

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Online Resource 4. Key GOs found in the vaginal pangenomes

Key GOs found in core genes of vaginal genomes

Species	GO terms	Molecular function/ Biological process	Key function
<i>L. paragasseri</i>	GO:0006012	GM - Galactose metabolism	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. paragasseri</i>	GO:00022857	PTTA – passive transmembrane transporter activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. paragasseri</i>	GO:00097367	CDB – Carbohydrate derivative binding	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. paragasseri</i>	GO:0006457	CA - Chaperone activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. paragasseri</i>	GO:0140359	ABC transporter	Bacteriocin synthesis
<i>L. paragasseri</i>	GO:0008324	TTA – Transmembrane transporter activity	Bacteriocin synthesis
<i>L. paragasseri</i>	GO:1901135	GCMP – Glycosyl compound metabolic process	Biosurfactant synthesis
<i>L. paragasseri</i>	GO:00016787	Hydrolase transferase	Biosurfactant synthesis
<i>L. paragasseri</i>	GO:0006631	FAB – Fatty acid biosynthesis	Plasma membrane integrity
<i>L. paragasseri</i>	GO:0006633	FAB – Fatty acid biosynthesis	Plasma membrane integrity
<i>L. gasseri</i>	GO:0006012	GM - Galactose metabolism	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri</i>	GO:0006457	CA - Chaperone activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri</i>	GO:00022857	PTTA – passive transmembrane transporter activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri</i>	GO:00097367	CDB – Carbohydrate derivative binding	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri</i>	GO:0008324	TTA – Transmembrane transporter activity	Bacteriocin synthesis
<i>L. gasseri</i>	GO:0140359	ABC transporter	Bacteriocin synthesis
<i>L. gasseri</i>	GO:00016787	Hydrolase transferase	Biosurfactant synthesis
<i>L. gasseri</i>	GO:1901135	GCMP – Glycosyl compound metabolic process	Biosurfactant synthesis
<i>L. gasseri</i>	GO:0008152	OSMP – Organic substance metabolic process	Hydrogen peroxide and organic acid biosynthesis D/L-lactate metabolic processes
<i>L. gasseri</i>	GO:0006631	FAB – Fatty acid biosynthesis	Plasma membrane integrity
<i>L. gasseri</i>	GO:0006633	FAB – Fatty acid biosynthesis	Plasma membrane integrity

<i>L. gasseri/L.paragasseri</i>	GO:0006012	GM - Galactose metabolism	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri/L.paragasseri</i>	GO:0006457	CA - Chaperone activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri/L.paragasseri</i>	GO:0022857	PTTA – passive transmembrane transporter activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri/L.paragasseri</i>	GO:0097367	CDB – Carbohydrate derivative binding	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri/L.paragasseri</i>	GO:0008324	TTA – Transmembrane transporter activity	Bacteriocin synthesis
<i>L. gasseri/L.paragasseri</i>	GO:0140359	ABC transporter	Bacteriocin synthesis
<i>L. gasseri/L.paragasseri</i>	GO:0016787	Hydrolase transferase	Biosurfactant synthesis
<i>L. gasseri/L.paragasseri</i>	GO:1901135	GCMP – Glycosyl compound metabolic process	Biosurfactant synthesis
<i>L. gasseri/L.paragasseri</i>	GO:0008152	OSMP – Organic substance metabolic process	Hydrogen peroxide and organic acid biosynthesis D/L-lactate metabolic processes
<i>L. gasseri/L.paragasseri</i>	GO:0006631	FAB – Fatty acid biosynthesis	Plasma membrane integrity
<i>L. gasseri/L.paragasseri</i>	GO:0006633	FAB – Fatty acid biosynthesis	Plasma membrane integrity
<i>L.crispatus</i>	GO:0006012	GM - Galactose metabolism	Adherence, aggregation, and exopolysaccharide synthesis
<i>L.crispatus</i>	GO:0006457	CA - Chaperone activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L.crispatus</i>	GO:0022857	PTTA – passive transmembrane transporter activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L.crispatus</i>	GO:0097367	CDB – Carbohydrate derivative binding	Adherence, aggregation, and exopolysaccharide synthesis
<i>L.crispatus</i>	GO:0008324	TTA – Transmembrane transporter activity	Bacteriocin synthesis
<i>L.crispatus</i>	GO:0140359	ABC transporter	Bacteriocin synthesis
<i>L.crispatus</i>	GO:0016787	Hydrolase transferase	Biosurfactant synthesis
<i>L.crispatus</i>	GO:1901135	GCMP – Glycosyl compound metabolic process	Biosurfactant synthesis

<i>L.crispatus</i>	GO:0008152	OSMP – Organic substance metabolic process	Hydrogen peroxide and organic acid biosynthesis D/L-lactate metabolic processes
<i>L.crispatus</i>	GO:0006631	FAB – Fatty acid biosynthesis	Plasma membrane integrity
<i>L.crispatus</i>	GO:0006633	FAB – Fatty acid biosynthesis	Plasma membrane integrity
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0004177	Basic survival functions	aminopeptidase activity
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0004816	Basic survival functions	asparagine-tRNA ligase activity
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0006421	Basic survival functions	asparaginyl-tRNA aminoacylation
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0005524	Basic survival functions	ATP binding
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0005524	Basic survival functions	ATP binding
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0005524	Basic survival functions	ATP binding
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0016887	Basic survival functions	ATP hydrolysis activity
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0004176	Basic survival functions	ATP-dependent peptidase
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0009986	Basic survival functions	cell surface
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0005737	Basic survival functions	cytoplasm
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0005737	Basic survival functions	cytoplasm
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0005737	Basic survival functions	cytoplasm
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0005737	Basic survival functions	cytoplasm
<i>L.gasseri/L.paragasseri/L.crispatus</i>	GO:0005737	Basic survival functions	cytoplasm

<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0003677	Basic survival functions	DNA binding
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0031975	Basic survival functions	envelope
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0005576	Basic survival functions	extracellular region
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0006096	Basic survival functions	glycolytic process
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0015934	Basic survival functions	large ribosomal subunit
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0000287	Basic survival functions	magnesium ion binding
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0008168	Basic survival functions	methyltransferase activity
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0051287	Basic survival functions	NAD binding
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0045892	Basic survival functions	negative regulation of DNA-templated transcription
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0016616	Basic survival functions	oxidoreductase activity, acting on the CH-OH group of donors, NAD or NADP as acceptor
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0004634	Basic survival functions	phosphopyruvate hydratase activity
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0006508	Basic survival functions	proteolysis
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0006508	Basic survival functions	proteolysis
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:190904	Basic survival functions	ribonucleoprotein complex
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:190904	Basic survival functions	ribonucleoprotein complex
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0043023	Basic survival functions	ribosomal large subunit binding
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0005840	Basic survival functions	ribosome

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<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0043022	Basic survival functions	ribosome binding
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0001510	Basic survival functions	RNA methylation
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0019843	Basic survival functions	rRNA binding
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0019843	Basic survival functions	rRNA binding
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0019843	Basic survival functions	rRNA binding
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0004252	Basic survival functions	serine-type endopeptidase activity
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0003735	Basic survival functions	structural constituent of ribosome
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0003735	Basic survival functions	structural constituent of ribosome
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0016740	Basic survival functions	transferase activity
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0006412	Basic survival functions	translation
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<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0003746	Basic survival functions	translation elongation factor activity
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0003743	Basic survival functions	translation initiation factor activity
<i>L. gasseri/L.paragasseri/L.crispatus</i>	GO:0008270	Basic survival functions	zinc ion binding

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<i>L. paragasseri</i>	GO:0006457	CA - Chaperone activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. paragasseri</i>	GO:0019318	GM - Galactose metabolism	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. paragasseri</i>	GO:0022857	PTTA – passive transmembrane transporter activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. paragasseri</i>	GO:0097367	CDB – Carbohydrate derivative binding	Adherence, aggregation, and exopolysaccharide synthesis
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<i>L. paragasseri</i>	GO:0008152	OSMP – Organic substance metabolic process	Hydrogen peroxide and organic acid biosynthesis D/L-lactate metabolic processes
<i>L. gasseri</i>	GO:0006012	GM - Galactose metabolism	Adherence, aggregation, and exopolysaccharide synthesis
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<i>L. gasseri</i>	GO:0071704	OSMP – Organic substance metabolic process	Hydrogen peroxide and organic acid biosynthesis D/L-lactate metabolic processes
<i>L. gasseri</i>	GO:0006631	FAB – Fatty acid biosynthesis	Plasma membrane integrity

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<i>L. crispatus</i>	GO:0006012	GM - Galactose metabolism	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. crispatus</i>	GO:0006457	CA - Chaperone activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. crispatus</i>	GO:0022857	PTTA – passive transmembrane transporter activity	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. crispatus</i>	GO:0097367	CDB – Carbohydrate derivative binding	Adherence, aggregation, and exopolysaccharide synthesis
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<i>L. gasseri/L.paragasseri</i>	GO:0022857	PTTA – passive transmembrane transporter activity	Adherence, aggregation, and exopolysaccharide synthesis

<i>L. gasseri/L.paragas seri</i>	GO:0097367	CDB – Carbohydrate derivative binding	Adherence, aggregation, and exopolysaccharide synthesis
<i>L. gasseri/L.paragas seri</i>	GO:0008324	TTA – Transmembrane transporter activity	Bacteriocin synthesis
<i>L. gasseri/L.paragas seri</i>	GO:0140359	ABC transporter	Bacteriocin synthesis
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