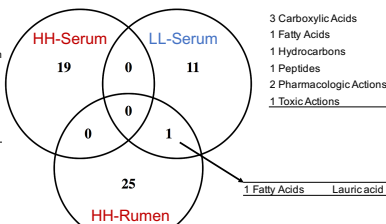


A

Serum metabolites higher in HH cows	
1 Acids, Heterocyclic	Nicotinamide
	Serine, L-Allothreonine, Asparagine, Creatine dehydratase, Trans-4-hydroxy-L-proline
5 Amino Acids	DL-dihydrospingosine
1 Amino Alcohols	N-ethylmaleamic acid
1 Carboxylic Acids	Cyclohexane-1,2-diol
1 Fatty Alcohols	Cytidine-monophosphate dehydratase prod., Salicin
2 Glycosides	Uracil
1 Heterocyclic Compounds	Allantoinic acid, Oxoproline, Palatinol
3 Others	Abietic acid
1 Pharmacologic Actions	Fructose
1 Sugars	D-glycerol 1-phosphate, Beta-Glycerophosphoric acid
2 Sugar Alcohols	

Serum metabolites higher in LL cows	
1 Acids, Carbocyclic	3,4-Dihydroxymandellic acid
1 Amino Acids	Sarcosine
	Phthalic acid, 3-hydroxyphenylacetic acid, Alpha-ketoglutaric acid
3 Carboxylic Acids	Alpha-ketoglutaric acid
1 Fatty Acids	Pelargonic acid
1 Hydrocarbons	Picotannol
1 Peptides	Glutathione-H ₂ O
2 Pharmacologic Actions	Resveratrol, Alpha-Santonin
1 Toxic Actions	1-Hydroxyanthraquinone



Rumen metabolites higher in HH cows

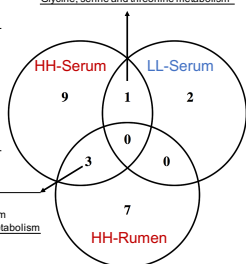
1 Acids, Noncarboxylic	Phosphate
1 Amides	Epsilon-Caprolactam
	Nepsilon-Trimethyllysine, 3-ureidopropionate, Oxamic acid, 3-1-Pyrazolyl-L-alanine
4 Amino Acids	Glucosaminic acid
1 Amino Sugars	Cinnamic acid, Pimelic acid, Beta-hydroxypropionate, Fumaric acid, Sinapyl alcohol
5 Carboxylic Acids	Pyridoxal phosphate
1 Coenzymes	Pentadecanoic acid
1 Fatty Acids	Prostaglandin E2, Trans,trans-Muonic acid
2 Fatty Acids, Unsaturated	Resorcinol, Phthalic acid
2 Hydrocarbons	D-galacturonic acid
1 Polysaccharides	D-Glycercic acid, 6-phosphogluconic acid, Gluconic acid
3 Sugar Acids	D-Glycercic acid, 6-phosphogluconic acid, Gluconic acid
2 Sugars	Glucose, Tagatose

B

Serum metabolic pathways enriched in HH cows

Methane metabolism
Nicotinate and nicotinamide metabolism
Sphingolipid metabolism
Aminocyl-rRNA biosynthesis
Arginine and proline metabolism
Glycerophospholipid metabolism
Cysteine and methionine metabolism
Glutathione metabolism
Purine metabolism

Glycine, serine and threonine metabolism



Rumen metabolic pathways enriched in HH cows

Vitamin B6 metabolism
beta-Alanine metabolism
Pentose phosphate pathway
Pantothenate and CoA biosynthesis
Galactose metabolism
Citrate cycle (TCA cycle)
Alanine, aspartate and glutamate metabolism

Serum metabolic pathways enriched in LL cows

Valine, leucine and isoleucine degradation
Tyrosine metabolism

C

