

Supplementary Table S10, a: Panther Tool Ontology for Jenoubi breed

Ontology = Biological Process - (*iHS* genes)

Ontology - Category	Gene ID	Gene Name	Panther Family/Subfamily	PANTHER Protein Class
Biological Regulation (GO:0065007)	<i>TNFAIP8</i>	Tumor necrosis factor alpha-induced protein 8	Tumor necrosis factor alpha-induced protein 8 (PTHR12757:SF3)	-
	<i>SLC4A4</i>	Electrogenic sodium bicarbonate cotransporter 1	Electrogenic sodium bicarbonate cotransporter 1 (PTHR11453:SF10)	Cation transporter
Cellular Component Organization or Biogenesis (GO:0071840)	<i>ATG7</i>	Uncharacterized protein	Ubiquitin-like modifier-activating enzyme ATG7 (PTHR10953:SF3)	ligase transfer/carrier protein
	<i>SGCD</i>	Uncharacterized protein	Delta-sarcoglycan (PTHR12939:SF6)	cytoskeletal protein
Cellular Process (GO:0009987)	<i>STXBP6</i>	Syntaxin-binding protein 6 STXBP6 ortholog	Exocyst complex component 1-related (PTHR16092:SF28)	transfer/carrier protein
	<i>MTHFD2L</i>	Uncharacterized protein	Bifunctional methylenetetrahydrofolate dehydrogenase/cyclohydrolase 2-related (PTHR10025:SF42)	dehydrogenase hydrolase
	<i>ATG7</i>	Uncharacterized protein	Ubiquitin-like modifier-activating enzyme ATG7 (PTHR10953:SF3)	ligase transfer/carrier protein
	<i>PRKG1</i>	cGMP-dependent protein kinase 1	SUBFAMILY NOT NAMED (PTHR24353:SF68)	-

	<i>TNFAIP8</i>	Tumor necrosis factor alpha-induced protein 8	Tumor necrosis factor alpha-induced protein 8 (PTHR12757:SF3)	-
	<i>SLC4A4</i>	Electrogenic sodium bicarbonate cotransporter 1	Electrogenic sodium bicarbonate cotransporter 1 (PTHR11453:SF10)	cation transporter
	<i>SGCD</i>	Uncharacterized protein	Delta-sarcoglycan (PTHR12939:SF6)	cytoskeletal protein
Developmental Process (GO:0032502)	<i>EPHA5</i>	Uncharacterized protein	Ephrin type-A receptor 5 (PTHR24416:SF17)	-
	<i>PCDH15</i>	Uncharacterized protein	Protocadherin-15 (PTHR24028:SF11)	-
	<i>TNFAIP8</i>	Tumor necrosis factor alpha-induced protein 8	Tumor necrosis factor alpha-induced protein 8 (PTHR12757:SF3)	-
	<i>SGCD</i>	Uncharacterized protein	Delta-sarcoglycan (PTHR12939:SF6)	cytoskeletal protein
Localization (GO:0051179)	<i>STXBP6</i>	Syntaxin-binding protein 6	Exocyst complex component 1-related (PTHR16092:SF28)	transfer/carrier protein
	<i>SLC4A4</i>	Electrogenic sodium bicarbonate cotransporter 1	Electrogenic sodium bicarbonate cotransporter 1 (PTHR11453:SF10)	cation transporter
Metabolic Process (GO:0008152)	<i>ATG7</i>	Uncharacterized protein	Ubiquitin-like modifier-activating enzyme ATG7 (PTHR10953:SF3)	ligase transfer/carrier protein
	<i>PRKG1</i>	cGMP-dependent protein kinase 1	SUBFAMILY NOT NAMED (PTHR24353:SF68)	-

Multicellular Organismal Process (GO:0032501)				
	<i>SGCD</i>	Uncharacterized protein	Delta-sarcoglycan (PTHR12939:SF6)	cytoskeletal protein
Response to Stimulus (GO:0050896)	<i>ATG7</i>	Uncharacterized protein	Ubiquitin-like modifier-activating enzyme ATG7 (PTHR10953:SF3)	ligase transfer/carrier protein

Supplementary Table S10, b: Panther Tool Ontology for Jenoubi breed

Ontology = Molecular Function - (Jenoubi breed – *iHS* genes – HD data)

Ontology - Category	Gene ID	Gene Name	Panther Family/Subfamily	PANTHER Protein Class
Binding (GO:0005488)	<i>STXBP6</i>	Syntaxin-binding protein 6	Exocyst complex component 1-related (PTHR16092:SF28)	Transfer/carrier protein
Catalytic Activity (GO:0003824)	<i>MTHFD2L</i>	Uncharacterized protein	Bifunctional methylenetetrahydrofolate dehydrogenase/cyclohydrolase 2-related (PTHR10025:SF42)	Dehydrogenase hydrolase
	<i>ATG7</i>	Uncharacterized protein	Ubiquitin-like modifier-activating enzyme ATG7 (PTHR10953:SF3)	Ligase transfer/carrier protein
	<i>TNFAIP8</i>	Tumor necrosis factor alpha-induced protein 8	Tumor necrosis factor alpha-induced protein 8 (PTHR12757:SF3)	-
Transporter Activity (GO:0005215)	<i>SLC4A4</i>	Electrogenic sodium bicarbonate cotransporter 1 SLC4A4 ortholog	Electrogenic sodium bicarbonate cotransporter 1 (PTHR11453:SF10)	Cation transporter

Supplementary Table S10, c: Panther Tool Ontology for Jenoubi breed

Ontology = Protein Class - (Jenoubi breed – *iHS* genes – HD data)

Ontology - Category	Gene ID	Gene Name	Panther Family/Subfamily	PANTHER Protein Class
Cytoskeletal protein (PC00085)	<i>SGCD</i>	Uncharacterized protein	Delta-sarcoglycan (PTHR12939:SF6)	Cytoskeletal protein
Hydrolase (PC00121)	<i>MTHFD2L</i>	Uncharacterized protein	Bifunctional methylenetetrahydrofolate dehydrogenase/cyclohydrolase 2-related (PTHR10025:SF42)	Dehydrogenase hydrolase
Ligase (PC00142)	<i>ATG7</i>	Uncharacterized protein	Ubiquitin-like modifier-activating enzyme ATG7 (PTHR10953:SF3)	Ligase transfer/carrier protein
Oxidoreductase (PC00176)	<i>MTHFD2L</i>	Uncharacterized protein	Bifunctional methylenetetrahydrofolate dehydrogenase/cyclohydrolase 2-related (PTHR10025:SF42)	Dehydrogenase hydrolase
Transfer/carrier protein (PC00219)	<i>STXBP6</i>	Syntaxin-binding protein 6	Exocyst complex component 1-related (PTHR16092:SF28)	Transfer/carrier protein
	<i>ATG7</i>	Uncharacterized protein	Ubiquitin-like modifier-activating enzyme ATG7 (PTHR10953:SF3)	Ligase transfer/carrier protein
Transporter (PC00227)	<i>SLC4A4</i>	Electrogenic sodium bicarbonate cotransporter 1	Electrogenic sodium bicarbonate cotransporter 1 (PTHR11453:SF10)	Cation transporter

Supplementary Table S10, d: Panther Tool Ontology for Jenoubi breed
Ontology = Cellular Components (Jenoubi breed –*iHS* genes - HD data)

Ontology - Category	Gene ID	Gene Name	Panther Family/Subfamily	PANTHER Protein Class
Cell Part (GO:0044464)	<i>STXBP6</i>	Syntaxin-binding protein 6	Exocyst complex component 1-related (PTHR16092:SF28)	Transfer/carrier protein
	<i>MTHFD2L</i>	Uncharacterized protein	Bifunctional methylenetetrahydrofolate dehydrogenase/cyclohydrolase 2-related (PTHR10025:SF42)	Dehydrogenase hydrolase
	<i>ATG7</i>	Uncharacterized protein	Ubiquitin-like modifier-activating enzyme ATG7 (PTHR10953:SF3)	Ligase transfer/carrier protein
	<i>TNFAIP8</i>	Tumor necrosis factor alpha-induced protein 8	Tumor necrosis factor alpha-induced protein 8 (PTHR12757:SF3)	-
	<i>SLC4A4</i>	Electrogenic sodium bicarbonate cotransporter 1	Electrogenic sodium bicarbonate cotransporter 1 (PTHR11453:SF10)	Cation transporter
	<i>SGCD</i>	Uncharacterized protein	Delta-sarcoglycan (PTHR12939:SF6)	Cytoskeletal protein
Macromolecular Complex (GO:0032991)	<i>STXBP6</i>	Syntaxin-binding protein 6	Exocyst complex component 1-related (PTHR16092:SF28)	Transfer/carrier protein
	<i>SGCD</i>	Uncharacterized protein	Delta-sarcoglycan (PTHR12939:SF6)	Cytoskeletal protein

Membrane (GO:0016020)	<i>SLC4A4</i>	Electrogenic sodium bicarbonate cotransporter 1	Electrogenic sodium bicarbonate cotransporter 1 (PTHR11453:SF10)	Cation transporter
Organelle (GO:0043226)	<i>MTHFD2L</i>	Uncharacterized protein	bifunctional methylenetetrahydrofolate dehydrogenase/cyclohydrolase 2-related (PTHR10025:SF42)	Dehydrogenase hydrolase