Category	Description	Examples	*geneID*	*S. molnari* specific	Regulation	Homologue in other organisms/ parasites	References
Adhesion molecules	Genes regulating cell to cell attachment (critical for attaching to host cells and initial infection).	Cadherin-like beta sandwich domain	GG_SM_NEW_LIB4189; GG_SM_NEW_LIB7013	YES	**Up**	*Trichomonas vaginalis*	[1]
		MAP domain	GG_SM_NEW_LIB633	YES	**Up**	*Staphylococcus aureus*	[2]
		Ornatin	GG_SM_NEW_LIB3731	YES	**Up**	*Placobdella ornata*	[3]
		Invasin	GG_SM_NEW_LIB14677	YES	**Up**	Gram-negative bacteria	[4]
		Fibronectin binding protein	GG_SM_NEW_LIB10455	YES	**Up**	*Ceratonova shasta*	[5]
		Glycoprotein GP40 of Cryptosporidium	GG_SM_NEW_LIB5974	YES	**Up**	*Cryptosporidium parvum*	[6]
Anticoagulants	Genes regulating blood clotting and anticoagulation. Genes regulating blood flow and helping facilitate parasite movement and feeding.	Fibrinogen beta and gamma chains, C-terminal globular domain	GG_SM_NEW_LIB7195; GG_SM_NEW_LIB7198	NO	**Down**	*Proteobacteria* and Eukaryotes (including other *Cnidaria* and *Amphimedon*)	[7]
		Coagulation Factor Xa inhibitory site	GG_SM_NEW_LIB10936; GG_SM_NEW_LIB11008; GG_SM_NEW_LIB19268; GG_SM_NEW_LIB4202	NO	**Up**	*Ancylostoma ceylanicum*	[8]
		Disintegrin and metalloproteinase domain-containing protein	GG_SM_NEW_LIB2466	NO	**Down**	Eukaryotes (including Nematoda)	[7,9]
Heme metabolism	Genes regulating heme metabolism and transport or iron scavenging.	Siderophore-interacting FAD-binding domain	GG_SM_NEW_LIB10509; GG_SM_NEW_LIB3174	YES	**Up**	*Aeromonas hydrophila*	[10]
		Heme NO binding associated	GG_SM_NEW_LIB19525	NO	**Up**	Hemoparasites (e.g., *malaria and schistosomes)*	[11]

		Iron Transport-associated domain	GG_SM_NEW_LIB12616	YES	**Up**	*Trypanosoma cruzi*	[12]
Host invasion-related	Genes regulating host cell invasion processes (entering host cells)	Microneme protein Etmic-2	GG_SM_NEW_LIB16080	YES	**Up**	*Leishmania, Plasmodium, Trypanosoma*	[13]
		Membrane-associated apoptosis protein	GG_SM_NEW_LIB13100	NO	**Down**	*Eimeria tenella*	[14]
		GTPase-activator protein for Ras-like GTPase	GG_SM_NEW_LIB10543; GG_SM_NEW_LIB4861	NO	**Down**	*Plasmodium falciparum*	[15]
		MSP1 EGF domain 1	GG_SM_NEW_LIB1272	NO	**Down**	*Plasmodium falciparum*	[16]
		Rab-GTPase-TBC domain	GG_SM_NEW_LIB11083; GG_SM_NEW_LIB1125; GG_SM_NEW_LIB15474;	NO	**Down**	*Entamoeba histolytica*	[17]
		Orthoreovirus membrane fusion protein p10	GG_SM_NEW_LIB1689	NO	**Down**	Viruses	[18]
		Hyaluronidase	GG_SM_NEW_LIB1611	NO	**Down**	*Ancylostoma caninum, Anisakis simplex*	[19]
		Giardia variant-specific surface protein	GG_SM_NEW_LIB10363; GG_SM_NEW_LIB10369; GG_SM_NEW_LIB10545; GG_SM_NEW_LIB1073; GG_SM_NEW_LIB11951; GG_SM_NEW_LIB12123; GG_SM_NEW_LIB12929;	YES	**Up**	*Giardia intestinalis, G. muris*	[20,21]

			GG_SM_NEW_LIB14148; GG_SM_NEW_LIB15276; GG_SM_NEW_LIB15641; GG_SM_NEW_LIB16587; GG_SM_NEW_LIB1846; GG_SM_NEW_LIB18588; GG_SM_NEW_LIB18941; GG_SM_NEW_LIB33; GG_SM_NEW_LIB587; GG_SM_NEW_LIB6187; GG_SM_NEW_LIB6265; GG_SM_NEW_LIB8168;				
		Malarial early transcribed membrane protein (ETRAMP)	GG_SM_NEW_LIB10042; GG_SM_NEW_LIB10326; GG_SM_NEW_LIB10493; GG_SM_NEW_LIB12174; GG_SM_NEW_LIB12323; GG_SM_NEW_LIB13811; GG_SM_NEW_LIB15821; GG_SM_NEW_LIB20785; GG_SM_NEW_LIB3891; GG_SM_NEW_LIB4780; GG_SM_NEW_LIB5621; GG_SM_NEW_LIB7132; GG_SM_NEW_LIB9425;	YES	**Up**	*Plasmodium yoelii, P. berghei, P. vivax, P. falciparum*	[22–25]
Immunity-related	Genes regulating components of the immune system and parasite evasion strategies	Rifin/stevor family	GG_SM_NEW_LIB10037; GG_SM_NEW_LIB1046; GG_SM_NEW_LIB11011; GG_SM_NEW_LIB11020; GG_SM_NEW_LIB12895; GG_SM_NEW_LIB13405; GG_SM_NEW_LIB13806; GG_SM_NEW_LIB15096; GG_SM_NEW_LIB1513; GG_SM_NEW_LIB1530; GG_SM_NEW_LIB1541; GG_SM_NEW_LIB15811; GG_SM_NEW_LIB15812; GG_SM_NEW_LIB16801; GG_SM_NEW_LIB16925; GG_SM_NEW_LIB17604;	YES	**Up**	*Plasmodium falciparum*	[26]

			GG_SM_NEW_LIB20026; GG_SM_NEW_LIB20304; GG_SM_NEW_LIB2244; GG_SM_NEW_LIB3205; GG_SM_NEW_LIB3630; GG_SM_NEW_LIB4307; GG_SM_NEW_LIB4786; GG_SM_NEW_LIB5586; GG_SM_NEW_LIB5637; GG_SM_NEW_LIB5677; GG_SM_NEW_LIB5678; GG_SM_NEW_LIB5886; GG_SM_NEW_LIB6555; GG_SM_NEW_LIB7474; GG_SM_NEW_LIB8988; GG_SM_NEW_LIB9046; GG_SM_NEW_LIB9974				
		alpha/beta hydrolase	GG_SM_NEW_LIB2663; GG_SM_NEW_LIB8749;	NO	**Up**	Myxozoans and almost all parasites	[9,27]
		Carboxypeptidase regulatory	GG_SM_NEW_LIB8835	YES	**Down**		
		Metallo-peptidase	GG_SM_NEW_LIB5892	NO	**Up**		
		OUT-like cysteine protease	GG_SM_NEW_LIB11794; GG_SM_NEW_LIB1514; GG_SM_NEW_LIB5631; GG_SM_NEW_LIB7480	NO	**Up**		
		Aspartyl protease	GG_SM_NEW_LIB7692	NO	**Down**		
		Serpins (serine protease inhibitors)	GG_SM_NEW_LIB20062; GG_SM_NEW_LIB13170	NO	**Down**	Myxozoans and other parasites (nematodes, schistosomes)	[28]
		WXG100 protein secretion system (Wss), protein EssA	GG_SM_NEW_LIB10058 GG_SM_NEW_LIB11799 GG_SM_NEW_LIB12784 GG_SM_NEW_LIB15082	YES	**Up**	*Mycobacterium tuberculosis*	[29]

			GG_SM_NEW_LIB16970 GG_SM_NEW_LIB17594 GG_SM_NEW_LIB1778 GG_SM_NEW_LIB18417 GG_SM_NEW_LIB19626 GG_SM_NEW_LIB3247 GG_SM_NEW_LIB7478				
		Immunity protein 40, 43, 59, 64	GG_SM_NEW_LIB19308; GG_SM_NEW_LIB435; GG_SM_NEW_LIB17422; GG_SM_NEW_LIB19229; GG_SM_NEW_LIB12709; GG_SM_NEW_LIB19694;	YES	**Up**	*Helminths*	[30]
		Macrophage migration inhibitory factor (MIF)	GG_SM_NEW_LIB18476	NO	**Up**	Bacteria and Eukaryota (including Nematoda)	[31]
		Phlebovirus nonstructural protein NS-M	GG_SM_NEW_LIB600	YES	**Up**	Viruses	[32]
		Avirulence protein ATR13, RxLR effector	GG_SM_NEW_LIB15366	YES	**Up**	Eukaryota (*Hyaloperonospora*)	[33]
		Alpha-2-macroglobulin family N-terminal region	GG_SM_NEW_LIB1839	YES	**Up**	Bacteria and Eukaryota	[34]
		CD80-like C2-set immunoglobulin domain	GG_SM_NEW_LIB5654	YES	**Up**	Eukaryota	[35]
		CD99 antigen like protein 2	GG_SM_NEW_LIB15637	YES	**Up**	Eukaryota	[35]

		Interleukin 17, 7/9	GG_SM_NEW_LIB5914; GG_SM_NEW_LIB17754;	YES	**Up**	Eukaryota (including Nematoda and *Trypanosoma cruzi*)	[18]
		Amb V Allergen	GG_SM_NEW_LIB8760	YES	**Down**	Eukaryota *Ambrosia* spp.	[36]
		ERAP1-like C-terminal domain	GG_SM_NEW_LIB19288; GG_SM_NEW_LIB19290	NO	**Down**	Bacteria and Eukaryota (including Nematoda)	[27]
		Eukaryotic aspartyl protease	GG_SM_NEW_LIB10331	NO	**Down**	Eukaryota (including Nematoda and *Plasmodium falciparum*)	[37]
		Immunoglobulin domain	GG_SM_NEW_LIB11539; GG_SM_NEW_LIB12937; GG_SM_NEW_LIB14383; GG_SM_NEW_LIB14888; GG_SM_NEW_LIB14889; GG_SM_NEW_LIB15221; GG_SM_NEW_LIB16436; GG_SM_NEW_LIB1782; GG_SM_NEW_LIB20898; GG_SM_NEW_LIB20899; GG_SM_NEW_LIB2318; GG_SM_NEW_LIB4456; GG_SM_NEW_LIB5311; GG_SM_NEW_LIB12935; GG_SM_NEW_LIB20361; GG_SM_NEW_LIB20362; GG_SM_NEW_LIB7127;	YES	**Down**	Eukaryota	[35,38]
		Pathogenicity island protein gp6 in Staphylococcus	GG_SM_NEW_LIB15249; GG_SM_NEW_LIB16577; GG_SM_NEW_LIB17105	YES	**Up**	*Staphylococcus aureus*	[39]

		Anthrax toxin lethal factor, N- and C-terminal domain	GG_SM_NEW_LIB12567	NO	**Down**	Bacteria	[40]
		LXG domain of WXG superfamily	GG_SM_NEW_LIB6154	NO	**Down**	Bacteria	[41]
		TcdB toxin N-terminal helical domain	GG_SM_NEW_LIB6137	YES	**Down**	*Clostridium difficile*	[1]
		Diphtheria toxin, T domain	GG_SM_NEW_LIB7690	NO	**Down**	*Corynebacterium diphtheriae*	[42]
		RNB domain	GG_SM_NEW_LIB12713	NO	**Down**	Bacteria	[43]
Toxins	Genes homologous to bacterial/viral toxins and virulence factors	AhpC/TSA family	GG_SM_NEW_LIB12848	YES	**Down**	*Francisella tularensis*	[44]

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