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### CATFISH GENE REFERENCES FOR FULL LENGTH CDS

Catfish Gene	Alternate Name	Previous Acc#	US VIRN Acc#	Publication: Cloning and Characterization
IgD			U67437	Wilson, M., Bengtén, E., Miller, N.W., Clem, L.W., DuPasquier L., and Warr, G.W. A novel chimeric Ig heavy chain from a teleost fish shares similarities to IgD. Proc. Natl. Acad. Sci. USA 94: 4593-597 (1997).
CD3 $\gamma\delta$			FJ804169	
CD4			DQ435305	Edholm, E.-S., Stafford, J.L., Quiniou, S.M., Waldbieser, G., Miller, N.W., Bengtén, E., and Wilson, M. Channel catfish, <i>Ictalurus punctatus</i> , CD4-like molecules. Dev. Comp. Immunol. 31:172-187 (2007).
IgL $\lambda$			EU872022 EU872025	Edholm, E.-S., Wilson, M., Sahoo, M., Pilstrom, L., Wermenstam, N.K., Miller, N.W., and Bengtén, E. Identification of IgL $\sigma$ and IgL $\lambda$ isotypes in channel catfish, <i>Ictalurus punctatus</i> , and an IgL $\lambda$ isotype in Atlantic cod, <i>Gadus morhua</i> . Immunogenetics 61:353-370 (2009).
IgL $\sigma$			EU872021 EU872023	Edholm, E.-S., Wilson, M., Sahoo, M., Pilstrom, L., Wermenstam, N.K., Miller, N.W., and Bengtén, E. Identification of IgL $\sigma$ and IgL $\lambda$ isotypes in channel catfish, <i>Ictalurus punctatus</i> , and an IgL $\lambda$ isotype in Atlantic cod, <i>Gadus morhua</i> . Immunogenetics 61:353-370 (2009).
$\beta$ 2-microglobulin	$\beta$ 2-m		AF016041	Criscitello, M.F., Benedetto, R., Antao, A., Wilson, M.R., Chinchar, V.G., Miller, N.W., Clem, L.W., and McConnell, T.J. $\beta$ 2-microglobulin of Ictalurid catfish. Immunogenetics 48: 339-343 (1998).
TCR $\alpha$			U58505	Wilson, M., Zhou, H., Bengtén, E., Clem, L.W., Stuge, T.B., Warr G.W., and Miller, N.W. T-cell receptors in channel catfish. Structure and expression of TCR $\alpha$ and $\beta$ genes. Mol. Immunol. 35: 545-557 (1998).
TCR $\beta$			U39193 U58508	Wilson, M., Zhou, H., Bengtén, E., Clem, L.W., Stuge, T.B., Warr G.W., and Miller, N.W. T-cell receptors in channel catfish. Structure and expression of TCR $\alpha$ and $\beta$ genes. Mol. Immunol. 35: 545-557 (1998).
Type II IFN	IFN $\gamma$		DQ124249 DQ124250 DQ124251	Milev-Milovanovic, I., Long, S., Wilson, M., Bengtén, E., Miller, N.W., and Chinchar, V.G. Identification and expression analysis of interferon gamma genes in channel catfish. Immunogenetics 58: 70-80 (2006).
Type I IFN	IFN $\alpha$ and $\beta$		AY847295	Long, S., Milev-Milovanovic, I., Wilson, M., Bengtén, E., Clem, L.W., Miller, N.W., and Chinchar, V.G. Identification and expression analysis of cDNAs encoding channel catfish interferons. Fish and Shellfish Immunology 21: 42-59 (2006).
IpFc $\mu$ R1			DQ286289 DQ286289	Stafford, J.L., Wilson, M., Nayak, D., Quiniou, S., Clem, L.W., Miller N.W., and Bengtén, E. Identification of an Fc-receptor homolog in channel catfish, <i>Ictalurus punctatus</i> . J. Immunol. 177: 2505-2517 (2006).

### CATTLE GENE REFERENCES FOR FULL LENGTH CDS

Bovine Gene	Alternate Name	Previous Acc#	US VIRN Acc#	Publication: Cloning and Characterization
CCL2	MCP-1	NM_174006	EU276069	Wempe, F., Einspanier, R. and Scheit, K.H. Characterization by cDNA cloning of the mRNA of a new growth factor from bovine seminal plasma: acidic seminal fluid protein. Biochem. Biophys. Res. Commun. 183 (1), 232-237 (1992)
CCL3	MIP-1a	AY050252		Werling D, Koss M, Howard CJ, Taylor G, Langhans W, Hope JC. Role of bovine chemokines produced by dendritic cells in respiratory syncytial virus-induced T cell proliferation. Vet Immunol Immunopathol. 2002 Sep 10;87(3-4):225-33.
		AY077840		

Bovine Gene	Alternate Name	Previous Acc#	US VIRN Acc#	Publication: Cloning and Characterization
CCL5	RANTES	NM_175827	EU276060	Aust,G., Brylla,E., Lehmann,I., Kiessling,S. and Spanel-Borowski,K. Cloning of bovine RANTES mRNA and its expression and regulation in ovaries in the periovulatory period. FEBS Lett. 463 (1-2), 160-164 (1999)
CCL11	Eotaxin	AJ132003		Vogel,B., Klinder,A., Sittig,D. and Aust,G. Bovine eotaxin (CCL11)--an unusual member of the eotaxin group--attracts eosinophils in vitro but is not responsible for eosinophilia in the ovary. Vet. Immunol. Immunopathol. 107 (1-2), 67-77 (2005)
CXCL9	MIG	EU276061	EU276061	
CXCL10	IP-10	BC112547	EU276062	Taubert,A., Zahner,H. and Hermosilla,C. Dynamics of transcription of immunomodulatory genes in endothelialcells infected with different coccidian parasites Vet Parasitol. 2006 Dec 20;142(3-4):214-22. Epub 2006 Aug 22.
CXCL11	IP-9	EU276063	EU276063	
IFN-alpha		NM_001017411	EU276064	Velan,B., Cohen,S., Grosfeld,H., Leitner,M. and Shafferman,A. Bovine interferon alpha genes. Structure and expression. J. Biol. Chem. 260 (9), 5498-5504 (1985)
IFN-beta		M15477	EU276065	Leung,D.W., Capon,D.J. and Goedel,D.V. The structure and bacterial expression of three distinct bovine interferon-beta genes.Biotechnology (N.Y.) 2, 458-464 (1984)
IFN-gamma		NM_174086	EU276066	Cerretti,D.P., McKereghan,K., Larsen,A., Cosman,D., Gillis,S. and Baker,P.E. Cloning, sequence, and expression of bovine interferon-gamma J. Immunol. 136 (12), 4561-4564 (1986)
IL1-beta		NM_174093	EU276067	Maliszewski,C.R., Baker,P.E., Schoenborn,M.A., Davis,B.S., Cosman,D., Gillis,S. and Cerretti,D.P. Cloning, sequence and expression of bovine interleukin 1 alpha and interleukin 1 beta complementary DNAs Mol. Immunol. 25 (5), 429-437 (1988)
IL2		NM_180997	EU276068	Reeves,R., Spies,A.G., Nissen,M.S., Buck,C.D., Weinberg,A.D., Barr,P.J., Magnuson,N.S. and Magnuson,J.A. Molecular cloning of a functional bovine interleukin 2 cDNA Proc. Natl. Acad. Sci. U.S.A. 83 (10), 3228-3232 (1986)
IL4		NM_173921	EU276069	Heussler,V.T., Eichhorn,M. and Dobbelaere,D.A. Cloning of a full-length cDNA encoding bovine interleukin 4 by the polymerase chain reaction Gene 114 (2), 273-278 (1992)
IL5		NM_173922	EU276070	Mertens,B., Gobright,E. and Seow,H.F. The nucleotide sequence of the bovine interleukin-5-encoding cDNA Gene 176 (1-2), 273-274 (1996)
IL6		NM_173923	EU276071	Droogmans,L., Cludts,I., Cleuter,Y., Kettmann,R. and Burny,A. Nucleotide sequence of bovine interleukin-6 cDNA DNA Seq. 2 (6), 411-413 (1992)
IL7		NM_173924	EU276072	Cludts,I., Droogmans,L., Cleuter,Y., Kettmann,R. and Burny,A. Sequence of bovine interleukin 7 DNA Seq. 3 (1), 55-59 (1992)
IL8	CXCL8	NM_173925	EU276073	Morsey,M.A., Popowych,Y., Kowalski,J., Gerlach,G., Godson,D., Campos,M. and Babiuk,L.A. Molecular cloning and expression of bovine interleukin-8 Microb. Pathog. 20 (4), 203-212 (1996)
IL10		NM_174088	EU276074	Hash,S.M., Brown,W.C. and Rice-Ficht,A.C. Characterization of a cDNA encoding bovine interleukin 10: kinetics of expression in bovine lymphocytes Gene 139 (2), 257-261 (1994)
IL12p35		U14416	EU276075	Zarlenga,D.S., Canals,A., Aschenbrenner,R.A. and Gasbarre,L.C. Enzymatic amplification and molecular cloning of cDNA encoding the small and large subunits of bovine interleukin 12 Biochim. Biophys. Acta 1270 (2-3), 215-217 (1995)
IL12p40		U11815	EU276076	Zarlenga,D.S., Canals,A., Aschenbrenner,R.A. and Gasbarre,L.C. Enzymatic amplification and molecular cloning of cDNA encoding the small and large subunits of bovine interleukin 12 Biochim. Biophys. Acta 1270 (2-3), 215-217 (1995)
IL13		NM_174089	EU276077	Buitkamp,J., Jann,O. and Fries,R. The cattle interleukin-13 gene: genomic organization, chromosomal location, and evolution of the promoter Immunogenetics 49 (10), 872-878 (1999)
		AF072807		Trigona,W.L., Brown,W.C. and Estes,D.M. Functional implications for signaling via the IL4R/IL13R complex on bovine cells Vet. Immunol. Immunopathol. 72 (1-2), 73-79 (1999)
IL15		U42433		Zarlenga,D.S., Canals,A., Boyd,P. and Gasbarre,L.C. Cloning and expression of bovine IL15: distribution and modulation of transcription in animals infected with gastrointestinal nematodes Interferon Cytokine Res. 1997 Aug;17(8):473-80
IL17	CTLA-8	AF412040		Riollet C, Mutuel D, Duonor-Cérutti M, Rainard P. Determination and characterization of bovine interleukin-17 cDNA. J Interferon Cytokine Res. 2006 Mar;26(3):141-9.

Bovine Gene	Alternate Name	Previous Acc#	US VIRN Acc#	Publication: Cloning and Characterization
IL18		NM_174091	EU276078	Shoda,L.K., Zarlenga,D.S., Hirano,A. and Brown,W.C. Cloning of a cDNA encoding bovine interleukin-18 and analysis of IL-18 expression in macrophages and its IFN-gamma-inducing activity J. Interferon Cytokine Res. 19 (10), 1169-1177 (1999)
IL23				
TNF-alpha		NM_173966	EU276079	Mertens,B., Muriuki,C. and Gaidulis,L. Cloning of two members of the TNF-superfamily in cattle: CD40 ligand and tumor necrosis factor alpha Immunogenetics 42 (5), 430-431 (1995)

## EQUINE GENE REFERENCES FOR FULL LENGTH CDS

Equine Gene	Alternate Name	PreviousAcc #	US VIRN Acc #	Publication: Cloning and Characterization
CCL2	MCP-1	NM_001081931	EU438774	Benarafa,C., Cunningham,F.M., Hamblin,A.S., Horohov,D.W. and Collins,M.E. Cloning of equine chemokines eotaxin, monocyte chemoattractant protein (MCP)-1, MCP-2 and MCP-4, mRNA expression in tissues and induction by IL-4 in dermal fibroblasts Vet. Immunol. Immunopathol. 76 (3-4), 283-298 (2000)
CCL3	MIP-1a		EU438775	
CCL5	RANTES	AF506970		?? Gilger Yang Slamon Jaffe Allen
CCL11	Eotaxin	NM_001081871		Benarafa,C., Cunningham,F.M., Hamblin,A.S., Horohov,D.W. and Collins,M.E. Cloning of equine chemokines eotaxin, monocyte chemoattractant protein (MCP)-1, MCP-2 and MCP-4, mRNA expression in tissues and induction by IL-4 in dermal fibroblasts Vet. Immunol. Immunopathol. 76 (3-4), 283-298 (2000)
CXCL9	MIG		EU438776	
CXCL10	IP-10		EU438777	
CXCL11	IP-9			
GM-CSF		AY040203	EU438778	Mauel,S., Steinbach,F. and Ludwig,H. Monocyte-derived dendritic cells from horses differ from dendritic cells of humans and mice Immunology 117 (4), 463-473 (2006)
IFN-alpha-1		M14540		Himmler,A., Hauptmann,R., Adolf,G.R. and Swetly,P. Molecular cloning and expression in Escherichia coli of equine type I interferons DNA 5 (5), 345-356 (1986)
IFN-beta		M14546		Himmler,A., Hauptmann,R., Adolf,G.R. and Swetly,P. Molecular cloning and expression in Escherichia coli of equine type I interferons DNA 5 (5), 345-356 (1986)
IFN-gamma		U04050		Grunig,G., Himmler,A. and Antczak,D.F. Cloning and sequencing of horse interferon-gamma cDNA Immunogenetics 39 (6), 448-449 (1994)
IL1-beta		U92481	EU438767	Howard,R.D., Mcllwraith,C.W., Trotter,G.W. and Nyborg,J.K. Cloning of equine interleukin 1 alpha and equine interleukin 1 beta and determination of their full-length cDNA sequences Am. J. Vet. Res. 59 (6), 704-711 (1998)
IL2		NM_001085433	EU438768	Vandergriff,E.V. and Horohov,D.W. Molecular cloning and expression of equine interleukin 2 Vet. Immunol. Immunopathol. 39 (4), 395-406 1993)
IL4		NM_001082519	EU438769	Vandergriff,E.V., Swiderski,C.E. and Horohov,D.W. Molecular cloning and sequencing of equine interleukin 4 Vet. Immunol. Immunopathol. 40 (4), 379-384 (1994)
IL5		U91947		Cunningham FM, Vandergriff E, Bailey SR, Sepulveda MF, Goode NT, Horohov DW. Cloning, expression and biological activity of equine interleukin (IL)-5. Vet Immunol Immunopathol. 2003 Sep 15;95(1-2):63-72.
IL6		U64794	EU438770	Swiderski,C.E., Sobol,G., Lunn,D.P. and Horohov,D.W. Molecular cloning, sequencing, and expression of equine interleukin-6 Vet. Immunol. Immunopathol. 77 (3-4), 213-220 (2000)
IL10		U38200	EU438771	Swiderski CE, Klei TR, Horohov DW. Quantitative measurement of equine cytokine mRNA expression by polymerase chain reaction using target-specific standard curves. J Immunol Methods. 1999 Jan 1;222(1-2):155-69.

Equine Gene	Alternate Name	Previous Acc #	US VIRN Acc #	Publication: Cloning and Characterization
IL12p35		Y11130		Nicolson,L., Penha-Goncalves,M.N., Keanie,J.L., Logan,N.A., Argyle,D.J. and Onions,D.E. Cloning and sequencing of horse interleukin-12 and interleukin-18 cDNAs Immunogenetics 50 (1-2), 94-97 (1999)
IL12p40		Y11129		Nicolson,L., Penha-Goncalves,M.N., Keanie,J.L., Logan,N.A., Argyle,D.J. and Onions,D.E. Cloning and sequencing of horse interleukin-12 and interleukin-18 cDNAs Immunogenetics 50 (1-2), 94-97 (1999)
IL13		EF645663		
IL15		AY682849		
IL17	CTLA-8			
IL18		Y11131	EU438772	Nicolson,L., Penha-Goncalves,M.N., Keanie,J.L., Logan,N.A., Argyle,D.J. and Onions,D.E. Cloning and sequencing of horse interleukin-12 and interleukin-18 cDNAs Immunogenetics 50 (1-2), 94-97 (1999)
IL23		AY704416	EU438773	
TGF-beta		NM_001081849		Penha-Goncalves,M.N., Onions,D.E. and Nicolson,L. Cloning and sequencing of equine transforming growth factor-beta 1 (TGF beta-1) cDNA DNA Seq. 7 (6), 375-378 (1997)
TNF-alpha		NM_001081819	EU438779	Su,X.Z., Morris,D.D. and McGraw,R.A. Cloning and characterization of gene TNF alpha encoding equine tumor necrosis factor alpha Gene 107 (2), 319-321 (1991)

### SWINE GENE REFERENCES FOR FULL LENGTH CDS

Swine Gene	Alternative name	Previous Acc#	US VIRN Acc#	Publication: Cloning and Characterization
CCL2	MCP-1	X79416		Hosang et al. Porcine luteal cells express monocyte chemoattractant proteins-1 (MCP-1): analysis by PCR and cDNA cloning. 1994, Biochem Biophys Res Comm 199, 962-968.  US-VIRN, in preparation
CCL3L1	MIP-1a	AY643423	EU364893	
CCL4	MIP1b	AJ311717	EU364894	
CCL5	RANTES	AJ583704		Yang et al. Molecular characterization of miniature porcine RANTES and its chemotactic effect on human mononuclear cells. Transplantation. 2006 82(9):1229-33
CXCL9	MIG	BP169836	EU364897	Hudgens, T., Tompkins, Boyd, P., Lunney, J., D., Horohov, D., Baldwin, C. Expressed gene sequence of the IFNg-response chemokine CXCL9 of cattle, horses, and swine. Vet Immunol Immunopathol. Submitted..
CXCL10	IP-10	AY789646	EU364898	Liu an dXiong. Isolation, sequence analysis and expression profile of a novel porcine gene, CXCL10, differentially expressed in the Longissimus dorsi muscle tissues from Meishan, Meishan x Large White cross and Large White pigs. 2007, DNA Sequence 18, 415-22.  Yang et al. Molecular characterization of cDNA encoding porcine IL-10 and induction of porcine endothelial IP-10 in response to human TNF $\alpha$ . 2007, Vet Immunol Immunopathol. 117, 124-8.
CXCL11	IP-9	BX914688		Boyd P, Hudgens E, Loftus JP, Tompkins D, Wysocki M, Kakach L, LaBresh J, Baldwin CL, Lunney JK. 2009. Expressed gene sequence and bioactivity of the IFN $\gamma$ -response chemokine CXCL11 of swine and cattle. Vet. Immunol. Immunopathol. Submitted
GM-CSF				Inumaru and Takamatsu. cDNA cloning of porcine GM-CSF. Immunol Cell boil 1995, 73, 474-6.

Swine Gene	Alternative name	Previous Acc#	US VIRN Acc#	Publication: Cloning and Characterization
IFN1@	IFNa	AY345969	EU364896	J. Leukoc. Biol. 77: 923-933 (2005)
IFNB1	IFNB	AY687281		Overend C, Mitchell R, He D, Rompato G, Grubman MJ, Garmendia AE. 2007. Recombinant swine beta interferon protects swine alveolar macrophages and MARC-145 cells from infection with Porcine reproductive and respiratory syndrome virus. J Gen Virol. 2007 Mar;88(Pt 3):925-31.  US-VIRN, in preparation
IL-5				Sylvin H, Matvienko O, Leonchiks A, Alving K, van der Ploeg I. Molecular cloning, expression, and purification of pig interleukin-5. Immunogenetics. 2000 51,59-64.
IL 7	IL-7	AB035380	EU364895	Ueha S et al. cDNA cloning and expression of swine IL-7 from neonatal intestinal epithelium. Biochim. Biophys. Acta 1517: 468-471 (2001)
IL13	IL-13	AF385625		Tompkins D, Hudgens E, Boyd P, Steffens C, Kakach L, Lunney JK, Labresh J, Baldwin CL. 2009. Expressed gene sequences of the bovine and swine cytokine Interleukin-13. Vet. Immunol. Immunopathol. Submitted.
IL15	IL-15	U58142		Canals et al. Molecular cloning of cDNA encoding porcine IL-15. Gene 195 (2), 337-339 (1997)
IL17	CTLA-8	AB040441		Uenishi H et al. Genomic organization and assignment of the interleukin 7 gene (IL7) to porcine chromosome 4q11-->q13 by FISH and by analysis of radiation hybrid panels. Cytogenet.Cell Genet. 93: 65-72 (2001)  Katoh et al. Cloning and characterization of swine IL-17, preferentially expressed in intestines. 2004, J. Interferon Cyto Res 24, 553-9.
IL18	IL-18			Fournout et al. Cloning, chromosomal location and tissue expression of the gene for pig IL-19. Immunogenetics 2000, 51, 358-65.
IL21	IL-21			Munesta et al. Molecular cloning, chromosomal location and biological activity of porcine IL-21. J Vet Med Sci 2004, 66, 269-75
TNF	TNFA	X57321		Anim. Biotechnol. 2, 97-105 (1991)
IL4Ra	CD124	AY266143		Vet. Immunol. Immunopathol. 101 (3-4), 223-234 (2004)
IL7Ra	CD127	BP157102		
IL13Ra1	CD213A1	AY266142		Vet. Immunol. Immunopathol. 101 (3-4), 223-234 (2004)
CCR7	CD197	AB090356		Cytogenet. Genome Res. 101: 155-160 (2003)
CXCR3	CD183&182	AJ851240		Vet. Immunol. Immunopathol. 106: 295-301 (2005)
TRA	TCR $\alpha$	L21158	EU364899	Vet Immunol Immunopathol. 1994 Oct;43(1-3):13-8
TRB	TCR $\beta$	AB079521	EU364900	Mol. Immunol. 44 (9), 2332-2343 (2007)
CD3G	TCR $\gamma$	L2159	EU364901	Vet Immunol Immunopathol. 1994 Oct;43(1-3):13-8
PTPRC	CD45RO	AY444871		