

Supplementary Table 4: Human X gene gain and loss

Gene Name	Chicken Chr	Chicken Pos	Chicken ENS ID	Human Chr	Human Pos	Human ENS ID	Category	Note
PLP1	4	1977392	ENSGALG00000000112	X	102918410	ENSG00000123560	A	
KLF8	1	159947131	ENSGALG00000000373	X	56275632	ENSG00000102349	A	
Q5J1N8_CHIC	4	1705649	ENSGALG000000003860	X	106956116	ENSG00000080561	A	
PIN4	4	1662322	ENSGALG000000003878	X	71318251	ENSG00000102309	A	
ERCC6L	4	1655797	ENSGALG000000003881	X	71341232	ENSG00000186871	A	
OCLR	4	1636260	ENSGALG000000003920	X	128501933	ENSG00000122126	A	
XPNPEP2	4	1629935	ENSGALG000000003949	X	128700627	ENSG00000122121	A	
NP_00102628	4	1622918	ENSGALG000000003951	X	128741641	ENSG00000122122	A	
ZDHHC9	4	1610436	ENSGALG000000003962	X	128766596	ENSG00000188706	A	
BCORL1	4	1581961	ENSGALG000000003976	X	128944350	ENSG00000085185	A	
NP_00100749	4	1565973	ENSGALG000000004003	X	129091018	ENSG00000156709	A	
RBMX2	4	1553805	ENSGALG000000004025	X	129363624	ENSG00000134597	A	
NP_00101290	4	1545933	ENSGALG000000004063	X	129301699	ENSG00000102078	A	
GPR119	4	1543986	ENSGALG000000004069	X	129346095	ENSG00000147262	A	
ENOX2	4	1518548	ENSGALG000000004079	X	129585031	ENSG00000165675	A	
CHM1B_CHIC1	4	1509856	ENSGALG000000004086	X	79414226	ENSG00000215104	A	
NP_989437.1	4	1492764	ENSGALG000000004093	X	79156911	ENSG00000122145	A	
NP_00101258	4	1454028	ENSGALG000000004107	X	78502541	ENSG00000078596	A	
NP_00100846	4	1439057	ENSGALG000000004111	X	78313125	ENSG00000147138	A	
LPAR4	4	1389744	ENSGALG000000004121	X	77896957	ENSG00000147145	A	
CYSLTR1	4	1330046	ENSGALG000000004128	X	77414787	ENSG00000173198	A	
	4	1269659	ENSGALG000000004187	X	77271902	ENSG00000187325	A	
KIF4A_CHICK	4	1250810	ENSGALG000000004195	X	69426620	ENSG00000090889	A	
PDZ11_CHICK	4	1247336	ENSGALG000000004198	X	69422936	ENSG00000120509	A	
A4L9I7_CHICK	4	1222323	ENSGALG000000004251	X	69404880	ENSG00000120500	A	
P2RY4	4	1204244	ENSGALG000000004346	X	69394745	ENSG00000186912	A	
	4	1199256	ENSGALG000000004367	X	69177117	ENSG00000147160	A	
	4	1199256	ENSGALG000000004367	X	69314061	ENSG00000184210	A	
	4	1199256	ENSGALG000000004367	X	69371271	ENSG00000204195	A	
XR_026669.1	4	1115502	ENSGALG000000004481	X	68752636	ENSG00000158813	A	
EFNB1_CHICK	4	998906	ENSGALG000000004537	X	67965556	ENSG00000090776	A	
STARD8	4	554692	ENSGALG000000004575	X	67784229	ENSG00000130052	A	
YIPF6	4	511954	ENSGALG000000004584	X	67635611	ENSG00000181704	A	
OPHN1	4	465929	ENSGALG000000004589	X	67179440	ENSG00000079482	A	
NP_00103517	4	416134	ENSGALG000000004596	X	66680599	ENSG00000169083	A	
EDA2R	4	347826	ENSGALG000000004599	X	65732204	ENSG00000131080	A	
HEPH	4	269455	ENSGALG000000004638	X	65299388	ENSG00000089472	A	
VSIG4	4	241320	ENSGALG000000004677	X	65158307	ENSG00000155659	A	
NP_00102628	4	113861	ENSGALG000000004709	X	64804283	ENSG00000147065	A	
OSZIOO_CHIC	4	68298	ENSGALG000000004713	X	64649188	ENSG00000001497	A	
ZC3H12B	4	54275	ENSGALG000000004715	X	64625431	ENSG00000102053	A	
KIAA1166	4	35524	ENSGALG000000004716	X	64052987	ENSG00000126970	A	
NP_00102628	4	1799818	ENSGALG000000004730	X	154158720	ENSG00000155962	A	
NP_00100658	4	1832440	ENSGALG000000004742	X	50670475	ENSG00000130385	A	
XR_026872.1	4	1836705	ENSGALG000000004801	X	71715389	ENSG00000067177	A	
HDAC8	4	1853106	ENSGALG000000004825	X	71466091	ENSG00000147099	A	
RBM41	4	1868007	ENSGALG000000004832	X	106194306	ENSG00000089682	A	
	4	1871417	ENSGALG000000004856	X	106253367	ENSG00000198088	A	
CxorF41	4	1880366	ENSGALG000000004870	X	106336518	ENSG00000080572	A	
FRMPD3	4	1926696	ENSGALG000000004876	X	106652336	ENSG00000147234	A	
PRPS1	4	1948779	ENSGALG000000004908	X	106758403	ENSG00000147224	A	
RAB9B	4	1969782	ENSGALG000000004918	X	102963914	ENSG00000123570	A	
GLRA4	4	1990373	ENSGALG000000004936	X	102848808	ENSG00000188828	A	
GLA	4	1999445	ENSGALG000000004948	X	100539435	ENSG00000102393	A	
BTX_CHICK	4	2009589	ENSGALG000000004958	X	100491091	ENSG0000010671	A	
TIMM8A	4	2020681	ENSGALG000000004963	X	100487308	ENSG00000126953	A	
DRP2	4	2037248	ENSGALG000000005031	X	100361414	ENSG00000102385	A	
CENPL_CHICK	4	2061546	ENSGALG000000005038	X	100239827	ENSG00000102384	A	
TMEM35	4	2079246	ENSGALG000000005041	X	100220519	ENSG00000126950	A	
CxorF34	4	2083767	ENSGALG000000005049	X	100150992	ENSG00000188917	A	
DKC1_CHICK	4	2098487	ENSGALG000000005054	X	153637340	ENSG00000130826	A	
NP_00100791	4	2107568	ENSGALG000000005071	X	153660162	ENSG00000130830	A	
Q804X3_CHIC	4	2126164	ENSGALG000000005077	X	153717257	ENSG00000185010	A	
	4	2151835	ENSGALG000000005381	X	153908258	ENSG00000165775	A	
BRCC3	4	2169589	ENSGALG000000005383	X	153952889	ENSG00000185515	A	
Q5ZKF0_CHIC	4	2183183	ENSGALG000000005425	X	70669658	ENSG00000147162	A	
	4	2201431	ENSGALG000000005464	X	70502839	ENSG00000147133	A	
ITGB1BP2	4	2243816	ENSGALG000000005493	X	70438353	ENSG00000147166	A	
NP_00102670	4	2255310	ENSGALG000000005507	X	70420165	ENSG00000147140	A	
ZMYM3	4	2280063	ENSGALG000000005533	X	70376199	ENSG00000147130	A	
NP_989702.1	4	2304599	ENSGALG000000005541	X	70351769	ENSG00000169562	A	
NLGN3	4	2307335	ENSGALG000000005553	X	70281436	ENSG00000196338	A	
MED12	4	2338077	ENSGALG000000005624	X	70255131	ENSG00000184634	A	
NP_989858.1	4	2374517	ENSGALG000000005638	X	70243979	ENSG00000147168	A	
FOXO4	4	2393791	ENSGALG000000005658	X	70232751	ENSG00000184481	A	
NP_00102670	4	2403867	ENSGALG000000005659	X	70192907	ENSG00000147164	A	
SLC7A3	4	2415110	ENSGALG000000005727	X	70062163	ENSG00000165349	A	
TEX11	4	2430982	ENSGALG000000005775	X	69665515	ENSG00000120498	A	
DLG3	4	2460956	ENSGALG000000005817	X	69581449	ENSG00000082458	A	
GDPD2	4	2516841	ENSGALG000000005842	X	69559716	ENSG00000130055	A	
HTR2C	4	2779925	ENSGALG000000005853	X	113724807	ENSG00000147246	A	
LRCH2	4	2854385	ENSGALG000000005882	X	114251441	ENSG00000130224	A	
NP_00100643	4	2968317	ENSGALG000000005930	X	114701740	ENSG00000102024	A	
AGTR2	4	3001900	ENSGALG000000005936	X	115215986	ENSG00000180772	A	
SLC6A14	4	3035074	ENSGALG000000005957	X	115481818	ENSG00000087916	A	
NP_00102628	4	3190314	ENSGALG000000005982	X	116915804	ENSG00000003096	A	
WDR44	4	3284702	ENSGALG000000005997	X	117364070	ENSG00000131725	A	
XR_027238.1	4	3325083	ENSGALG000000006017	X	117513900	ENSG00000147251	A	
IL13RA1	4	3387161	ENSGALG000000006032	X	117745587	ENSG00000131724	A	
NP_00102628	4	3420382	ENSGALG000000006049	X	130984926	ENSG00000134602	A	
NP_00101259	4	3465682	ENSGALG000000006061	X	131164734	ENSG00000123728	A	
NP_00101259	4	3493228	ENSGALG000000006066	X	131339862	ENSG00000076770	A	
H6ST2_CHICK	4	3590877	ENSGALG000000006071	X	131587719	ENSG00000171004	A	
GPC4	4	3771522	ENSGALG000000006080	X	132262730	ENSG00000076716	A	
GPC3	4	3845309	ENSGALG000000006087	X	132497448	ENSG00000147257	A	
PHF6	4	3994211	ENSGALG000000006094	X	133335008	ENSG00000156531	A	
HPRT_CHICK	4	4031786	ENSGALG000000006098	X	133421923	ENSG00000165704	A	
FAM122B	4	4075584	ENSGALG000000006108	X	133731262	ENSG00000156504	A	
F122A_CHICK	4	4086089	ENSGALG000000006127	X	133768890	ENSG00000156500	A	
MOSPD1	4	4105920	ENSGALG000000006132	X	133849323	ENSG00000101928	A	
DDX26B	4	4140961	ENSGALG000000006157	X	134482250	ENSG00000165359	A	

TMEM32	4	4186140	ENSGALG00000006162	X	134871897	ENSG00000169446	A
SLC9A6	4	4189431	ENSGALG00000006180	X	134895252	ENSG00000198689	A
FHL1	4	4237102	ENSGALG00000006190	X	135057346	ENSG00000022267	A
MAP7D3	4	4246166	ENSGALG00000006256	X	135123047	ENSG00000129680	A
GPR112	4	4315284	ENSGALG00000006393	X	135210788	ENSG00000156920	A
NP_989737.1	4	4332640	ENSGALG00000006406	X	135397791	ENSG00000102239	A
Q5ZKD3_CHIC	4	4343017	ENSGALG00000006410	X	135407337	ENSG00000102241	A
VGLL1	4	4360259	ENSGALG00000006412	X	135441977	ENSG00000102243	A
CD40L_CHICK	4	4377227	ENSGALG00000006415	X	135558002	ENSG00000102245	A
ARHG6_CHICK	4	4386284	ENSGALG00000006439	X	135575372	ENSG00000129675	A
Q5ZKQ9_CHIC	4	4422127	ENSGALG00000006457	X	135783288	ENSG00000147274	A
ZIC3	4	4561401	ENSGALG00000006497	X	136476012	ENSG00000156925	A
NP_00100174	4	4765422	ENSGALG00000006508	X	137541401	ENSG00000129682	A
FA9_CHICK	4	5025917	ENSGALG00000006513	X	138440561	ENSG00000101981	A
SRPK3	1	14823226	ENSGALG00000006544	X	152699656	ENSG00000184343	A
MCF2	4	5044846	ENSGALG00000006562	X	138491596	ENSG00000101977	A
ATP11C	4	5096694	ENSGALG00000006623	X	138636171	ENSG00000101974	A
ARL13A	4	5151228	ENSGALG00000006636	X	100111356	ENSG00000174225	A
	4	5160873	ENSGALG00000006637	X	100055090	ENSG00000182489	A
NOX1	4	5166311	ENSGALG00000006707	X	99984969	ENSG00000007952	A
NP_00100643	4	5171532	ENSGALG00000006760	X	99962004	ENSG00000101811	A
XR_026989.1	4	5183290	ENSGALG00000006786	X	99816144	ENSG00000102362	A
SRPX2	4	5190431	ENSGALG00000006796	X	99785819	ENSG00000102359	A
TSPAN6	4	5197934	ENSGALG00000006808	X	99770451	ENSG00000000003	A
NP_996868.1	4	5206031	ENSGALG00000006821	X	99726446	ENSG00000000005	A
Q9YGR0_CHIC	4	5230869	ENSGALG00000006822	X	99433300	ENSG00000165194	A
DIAPH2	4	5830990	ENSGALG00000006839	X	95826365	ENSG00000147202	A
	4	2428435	ENSGALG00000006843	X	106924107	ENSG00000170935	A
Q9YGO6_CHIC	4	6991590	ENSGALG00000006851	X	90920960	ENSG00000102290	A
KLHL4	4	8139648	ENSGALG00000006877	X	86659425	ENSG00000102271	A
NP_990126.1	4	8338908	ENSGALG00000006886	X	85290118	ENSG00000126733	A
NP_00102629	4	8622348	ENSGALG00000006906	X	85002841	ENSG00000188419	A
POF1B	4	8727041	ENSGALG00000006919	X	84419058	ENSG00000124429	A
O42424_CHIC	4	8732862	ENSGALG00000006929	X	84385653	ENSG00000147180	A
APOOL_CHICK	4	8784189	ENSGALG00000006978	X	84145559	ENSG00000155008	A
NP_00102629	4	8996663	ENSGALG00000007041	X	83459541	ENSG00000165259	A
RPS6KA6	4	9057466	ENSGALG00000007097	X	83205640	ENSG00000072133	A
NP_00101259	4	9416983	ENSGALG00000007128	X	80344278	ENSG00000131171	A
BRWD3	4	9493699	ENSGALG00000007151	X	79818351	ENSG00000165288	A
FAM46D	4	9561524	ENSGALG00000007157	X	79562602	ENSG00000174016	A
	4	9586935	ENSGALG00000007160	X	130019897	ENSG00000147256	A
CLCN5	4	9635234	ENSGALG00000007234	X	49573965	ENSG00000171365	A
SLITRK4	4	9985572	ENSGALG00000007242	X	142543610	ENSG00000179542	A
CH03_CHICK	4	10594559	ENSGALG00000007243	X	139412818	ENSG00000134595	A
GABRA3	4	10844309	ENSGALG00000007269	X	151086290	ENSG00000011677	A
CNGA2	4	11001806	ENSGALG00000007282	X	150653874	ENSG00000183862	A
PRRG3	4	11020781	ENSGALG00000007290	X	150614607	ENSG00000130032	A
RIPPLY1	4	11029609	ENSGALG00000007309	X	106029951	ENSG00000147223	A
CLDN2	4	11034232	ENSGALG00000007311	X	106050290	ENSG00000165376	A
TMLH_CHICK	4	11092947	ENSGALG00000007443	X	154372967	ENSG00000185973	A
A0FK59_CHIC	4	11125304	ENSGALG00000007448	X	154650645	ENSG00000168939	A
Q5ZL74_CHIC	4	11274074	ENSGALG00000007476	X	154764207	ENSG00000124333	A
ZNF185	4	11312405	ENSGALG00000007488	X	151833653	ENSG00000147394	A
NSDHL	4	11367738	ENSGALG00000007493	X	151750167	ENSG00000147383	A
	4	11378406	ENSGALG00000007510	X	151746529	ENSG00000147400	A
GLD5	4	11435361	ENSGALG00000007542	X	48509178	ENSG00000171433	A
	4	11560652	ENSGALG00000007574	X	55760897	ENSG00000083750	A
NP_00101271	4	11716305	ENSGALG00000007590	X	63404687	ENSG00000102043	A
ASB12	4	11747271	ENSGALG00000007594	X	63360801	ENSG00000198881	A
FAM123B	4	11758741	ENSGALG00000007599	X	63321722	ENSG00000184675	A
ARHGEP9	4	11866519	ENSGALG00000007608	X	62771572	ENSG00000131089	A
HMD2_CHICK	4	12178111	ENSGALG00000007656	X	72583813	ENSG00000131264	A
NP_00102629	4	12213205	ENSGALG00000007660	X	72699769	ENSG00000204116	A
SLC16A2	4	12405103	ENSGALG00000007748	X	73557810	ENSG00000147100	A
NP_990159.1	4	12438000	ENSGALG00000007750	X	73726678	ENSG00000131263	A
KIAA2022	4	12469998	ENSGALG00000007755	X	73869409	ENSG00000050030	A
ABCB7	4	12608591	ENSGALG00000007788	X	74189834	ENSG00000131269	A
UPP_CHICK	4	12653329	ENSGALG00000007793	X	74410650	ENSG00000094841	A
ZDHH15	4	12680612	ENSGALG00000007800	X	74508786	ENSG00000102383	A
NP_00103811	4	12887028	ENSGALG00000007806	X	76596299	ENSG00000196468	A
	4	12905188	ENSGALG00000007843	X	76647015	ENSG00000085224	A
IAG2_CHICK	4	12984311	ENSGALG00000007861	X	76968520	ENSG00000102158	A
	4	13000791	ENSGALG00000007863	X	77041627	ENSG00000131174	A
	4	13002692	ENSGALG00000007902	X	77052850	ENSG00000165240	A
PGK_CHICK	4	13036123	ENSGALG00000007936	X	77246425	ENSG00000102144	A
AMOT	4	13076510	ENSGALG00000007952	X	111904387	ENSG00000126016	A
TRPC5	4	13176785	ENSGALG00000007972	X	110904198	ENSG00000072315	A
HAKAI_CHICK	1	15799779	ENSGALG00000007975	X	22200986	ENSG00000175809	A
CxorF45	4	13250373	ENSGALG00000007976	X	110811069	ENSG00000101901	A
NP_989666.1	4	13329698	ENSGALG00000007993	X	110423663	ENSG00000077279	A
CAPN6	4	13432038	ENSGALG00000008006	X	110374987	ENSG00000077274	A
PAK3	4	13491746	ENSGALG00000008058	X	110226244	ENSG00000077264	A
CRDL1_CHICK	4	13612341	ENSGALG00000008072	X	109803740	ENSG00000101938	A
AMMECR1	4	13722017	ENSGALG00000008074	X	109324071	ENSG00000101935	A
NP_00101290	4	13801069	ENSGALG00000008076	X	109132979	ENSG00000157600	A
ACSL4	4	13863906	ENSGALG00000008088	X	108771222	ENSG00000068366	A
NP_00100643	4	13910739	ENSGALG00000008092	X	108665666	ENSG00000101888	A
IRS4	4	13980728	ENSGALG00000008107	X	107862368	ENSG00000133124	A
COL4A5	4	14007548	ENSGALG00000008141	X	107569810	ENSG00000188153	A
COL4A6	4	14169851	ENSGALG00000008266	X	107285494	ENSG00000197565	A
ATG4A	4	14161690	ENSGALG00000008282	X	107221590	ENSG00000101844	A
PSMD10	4	14225330	ENSGALG00000008287	X	107214093	ENSG00000101843	A
	1	13884450	ENSGALG00000008288	X	100764776	ENSG00000102401	A
	1	13884450	ENSGALG00000008288	X	101740752	ENSG00000125962	A
	1	13884450	ENSGALG00000008288	X	100692170	ENSG00000126947	A
	1	13884450	ENSGALG00000008288	X	101853760	ENSG00000158301	A
	1	13884450	ENSGALG00000008288	X	100796923	ENSG00000184867	A
	1	13884450	ENSGALG00000008288	X	101862310	ENSG00000198908	A
	1	13884450	ENSGALG00000008288	X	101792950	ENSG00000198932	A
	1	13884450	ENSGALG00000008288	X	100756772	ENSG00000198960	A
	1	13884450	ENSGALG00000008288	X	100739145	ENSG00000204072	A
NP_00100174	4	14232583	ENSGALG00000008290	X	107174856	ENSG00000101842	A
RAB39B	4	14310386	ENSGALG00000008384	X	154140721	ENSG00000155961	A

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VBP1	4	14315921	ENSGALG00000008389	X	154097744	ENSG00000155959	A
GAB3	4	14367598	ENSGALG00000008408	X	153556725	ENSG00000160219	A
SMARCA1	4	14429611	ENSGALG00000008431	X	128408159	ENSG00000102038	A
TEN1_CHICK	4	15412731	ENSGALG00000008442	X	123339504	ENSG0000009694	A
SH2D1A	4	15655550	ENSGALG00000008447	X	123307831	ENSG00000183918	A
STAG2	4	15699100	ENSGALG00000008482	X	122921743	ENSG00000101972	A
NP_989919.1	4	15779875	ENSGALG00000008491	X	122821729	ENSG00000101966	A
THOC2	4	15807785	ENSGALG00000008507	X	122562094	ENSG00000125676	A
NP_990546.1	4	15868385	ENSGALG00000008512	X	122145687	ENSG00000125675	A
C1GALT1C1	4	16510949	ENSGALG00000008513	X	119643564	ENSG00000171155	A
Q5ZI42_CHIC	4	16513180	ENSGALG00000008517	X	119622049	ENSG00000101898	A
CUL4B	4	16523380	ENSGALG00000008559	X	119542476	ENSG00000158290	A
LAMP2_CHICK	4	16551769	ENSGALG00000008572	X	119446367	ENSG00000005893	A
NP_00103811	4	16570195	ENSGALG00000008593	X	119379995	ENSG00000101892	A
FAM70A	4	16578979	ENSGALG00000008604	X	119276534	ENSG00000125355	A
AOMPA7_CHIC	4	16607080	ENSGALG00000008611	X	119268635	ENSG00000177485	A
NDUFA1	4	16624390	ENSGALG00000008613	X	118889762	ENSG00000125356	A
Q5ZHV0_CHIC	4	16625245	ENSGALG00000008618	X	118852017	ENSG00000125351	A
NP_00102629	4	16638499	ENSGALG00000008633	X	118633715	ENSG00000125354	A
NP_00101290	4	16664299	ENSGALG00000008645	X	118606328	ENSG00000186416	A
NP_990196.1	4	16676640	ENSGALG00000008648	X	118592527	ENSG00000077721	A
CXorf56	4	16684530	ENSGALG00000008652	X	118556140	ENSG00000018610	A
SLC25A5	4	16692570	ENSGALG00000008675	X	118486436	ENSG00000005022	A
SLC25A43	4	16697566	ENSGALG00000008682	X	118397679	ENSG00000077713	A
LONRF3	4	16827120	ENSGALG00000008860	X	117992609	ENSG00000175556	A
XR_027143.1	4	16867025	ENSGALG00000008872	X	103297957	ENSG00000123575	A
IL1RAPL2	4	17149659	ENSGALG00000008888	X	103697652	ENSG00000189108	A
NP_00102629	4	17338667	ENSGALG00000008970	X	104953192	ENSG00000123572	A
CXorf57	4	17441484	ENSGALG00000008990	X	105741858	ENSG00000147231	A
RNF128	4	17475942	ENSGALG00000009000	X	105823724	ENSG00000133135	A
TBC1D8B	4	17517668	ENSGALG00000009040	X	105932566	ENSG00000133138	A
NP_00102629	4	17648229	ENSGALG00000009065	X	150315696	ENSG00000160131	A
HMGB3	4	17789155	ENSGALG00000009071	X	149902421	ENSG00000029993	A
CD99L2	4	17825428	ENSGALG00000009075	X	149685470	ENSG00000102181	A
MTMR1	4	17846604	ENSGALG00000009085	X	149612527	ENSG00000063601	A
MTM1	4	17882694	ENSGALG00000009096	X	149487727	ENSG00000171100	A
XR_027150.1	4	17938835	ENSGALG00000009098	X	149282209	ENSG00000013619	A
	4	18191899	ENSGALG00000009128	X	148848949	ENSG00000197021	A
	4	18191899	ENSGALG00000009128	X	148430463	ENSG00000197620	A
TMEM185A	4	18195850	ENSGALG00000009139	X	148486016	ENSG00000155984	A
	4	18220571	ENSGALG00000009154	X	148368206	ENSG00000010404	A
	4	18220571	ENSGALG00000009154	X	148414420	ENSG00000176289	A
	4	18343130	ENSGALG00000009168	X	147389831	ENSG00000155966	A
Q5ZHM3_CHI	4	18824681	ENSGALG00000009177	X	146801173	ENSG00000102081	A
SLITRK2	4	19235977	ENSGALG00000009192	X	144707381	ENSG00000185985	A
NP_00102665	1	30281578	ENSGALG00000009497	X	152821179	ENSG00000126895	A
	4	46313892	ENSGALG00000010885	X	73322489	ENSG00000204113	A
NP_00100624	1	62071951	ENSGALG00000012974	X	154903161	ENSG00000182484	A
TBL1X	1	129009396	ENSGALG00000013366	X	9391352	ENSG00000101849	A
	1	24029741	ENSGALG00000014012	X	47541297	ENSG00000188459	A
NP_00101283	1	95221218	ENSGALG00000015459	X	152336975	ENSG00000189420	A
	4	84627578	ENSGALG00000015609	X	154342270	ENSG00000185978	A
	4	84627578	ENSGALG00000015609	X	153766511	ENSG00000198082	A
	4	84627578	ENSGALG00000015609	X	154263622	ENSG00000198307	A
CXorf36	1	114371799	ENSGALG00000016215	X	44892563	ENSG00000147113	A
	1	114402920	ENSGALG00000016217	X	44617415	ENSG00000147050	A
FUNDC1	1	114588674	ENSGALG00000016219	X	44267847	ENSG00000069509	A
EFHC2_CHICK	1	114628575	ENSGALG00000016221	X	43892072	ENSG00000183690	A
NDP	1	114771903	ENSGALG00000016222	X	43692970	ENSG00000124479	A
Q5MQR0_CHI	1	114806172	ENSGALG00000016223	X	43510804	ENSG00000069535	A
NP_00102597	1	114866376	ENSGALG00000016224	X	43400353	ENSG00000189221	A
CASK	1	115430266	ENSGALG00000016226	X	41263408	ENSG00000147044	A
Q6XCE1_CHIC	1	115480420	ENSGALG00000016227	X	41433170	ENSG00000171659	A
NYX	1	115582715	ENSGALG00000016228	X	41191631	ENSG00000188937	A
NP_00102597	1	115609204	ENSGALG00000016231	X	41077595	ENSG00000215301	A
	1	115667615	ENSGALG00000016236	X	40829832	ENSG00000124486	A
MED14	1	115816329	ENSGALG00000016238	X	40392502	ENSG00000180182	A
NP_00102597	1	115861428	ENSGALG00000016241	X	40325160	ENSG00000182220	A
	1	115950951	ENSGALG00000016245	X	39794012	ENSG00000183337	A
NP_998740.1	1	116300801	ENSGALG00000016249	X	38545651	ENSG00000165175	A
TSPAN7	1	116329009	ENSGALG00000016251	X	38305553	ENSG00000156298	A
OTC_CHICK	1	116461327	ENSGALG00000016254	X	38096680	ENSG00000036473	A
RPGR	1	116488949	ENSGALG00000016255	X	38013368	ENSG00000156313	A
SRPX	1	116581253	ENSGALG00000016256	X	37893539	ENSG00000101955	A
SYTL5	1	116609189	ENSGALG00000016258	X	37750779	ENSG00000147041	A
DYNLT3	1	116702731	ENSGALG00000016259	X	37580954	ENSG00000165169	A
CYBB	1	116720415	ENSGALG00000016261	X	37524239	ENSG00000165168	A
NP_00102999	1	116756003	ENSGALG00000016262	X	37430052	ENSG00000047597	A
LANCL3	1	116780945	ENSGALG00000016265	X	37315741	ENSG00000147036	A
PRRG1	1	116850031	ENSGALG00000016266	X	37093467	ENSG00000130962	A
CXorf22	1	116920646	ENSGALG00000016268	X	35847779	ENSG00000165164	A
TMEM47	1	117473225	ENSGALG00000016272	X	34555104	ENSG00000147027	A
DMD_CHICK	1	118069256	ENSGALG00000016281	X	31042729	ENSG00000198947	A
MAP3K7IP3	1	119178962	ENSGALG00000016284	X	30755480	ENSG00000157625	A
	1	119230770	ENSGALG00000016285	X	30581397	ENSG00000198814	A
CXorf21	1	119288623	ENSGALG00000016286	X	30486862	ENSG00000120280	A
NP_989924.1	1	119395075	ENSGALG00000016287	X	30232507	ENSG00000169297	A
IL1RAPL1	1	119540327	ENSGALG00000016288	X	28515437	ENSG00000169306	A
Q59J86_CHIC	1	121296470	ENSGALG00000016312	X	24621957	ENSG00000101868	A
PCYT1B	1	121514569	ENSGALG00000016318	X	24486125	ENSG00000102230	A
NP_00100625	1	121541235	ENSGALG00000016323	X	24393475	ENSG00000067992	A
O7LZ62_CHIC	1	121641933	ENSGALG00000016327	X	24077783	ENSG00000005889	A
IF2G_CHICK	1	121677562	ENSGALG00000016340	X	23982986	ENSG00000130741	A
KLH15_CHICK	1	121703650	ENSGALG00000016345	X	23915884	ENSG00000174010	A
APOO	1	121733603	ENSGALG00000016347	X	23761402	ENSG00000184831	A
SAT1_CHICK	1	121771899	ENSGALG00000016348	X	23711211	ENSG00000130066	A
NP_00101284	1	121778541	ENSGALG00000016351	X	23631698	ENSG00000123130	A
PRDX4	1	121803585	ENSGALG00000016357	X	23592300	ENSG00000123131	A
PTCHD1	1	121889476	ENSGALG00000016358	X	23262906	ENSG00000165186	A
PHEX	1	122345891	ENSGALG00000016375	X	21960842	ENSG00000102174	A
NP_00102597	1	122454861	ENSGALG00000016379	X	21868754	ENSG00000102172	A
MBTPS2	1	122526313	ENSGALG00000016382	X	21767670	ENSG00000012174	A
KLHL34	1	122629229	ENSGALG00000016388	X	21582729	ENSG00000185915	A

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CNKSR2	1	122634436	ENSGALG00000016391	X	21302481	ENSG00000149970	A
RPS6KA3	1	123229204	ENSGALG00000016406	X	20077951	ENSG00000177189	A
MAP7D2	1	123339559	ENSGALG00000016415	X	19935150	ENSG00000184368	A
CxorF23	1	123401479	ENSGALG00000016418	X	19841403	ENSG00000173681	A
NP_00102597	1	123425184	ENSGALG00000016420	X	19462046	ENSG00000147010	A
XR_027145.1	1	123679971	ENSGALG00000016426	X	19288095	ENSG00000180815	A
NP_00101256	1	123735114	ENSGALG00000016430	X	19271972	ENSG00000131828	A
GPR64	1	123842168	ENSGALG00000016511	X	18917348	ENSG00000173698	A
PHKA2	1	123866428	ENSGALG00000016518	X	18820802	ENSG00000044446	A
PPEF1	1	123907060	ENSGALG00000016522	X	18618967	ENSG000000086717	A
XR_026808.1	1	123954222	ENSGALG00000016523	X	18567733	ENSG00000102104	A
CDKL5	1	123970718	ENSGALG00000016529	X	18353646	ENSG00000008086	A
SCML2	1	124117128	ENSGALG00000016537	X	18167355	ENSG00000102098	A
RAI2	1	124198127	ENSGALG00000016538	X	17728092	ENSG00000131831	A
CxorF20	1	124369929	ENSGALG00000016541	X	18090974	ENSG00000177324	A
NHS	1	124403905	ENSGALG00000016543	X	17303802	ENSG000001888158	A
NP_00102597	1	124723087	ENSGALG00000016545	X	16874735	ENSG00000169891	A
RBBP7_CHICK	1	124845745	ENSGALG00000016546	X	16772385	ENSG00000102054	A
	1	124857795	ENSGALG00000016547	X	16714526	ENSG000000086712	A
SYAP1	1	124882770	ENSGALG00000016548	X	16647676	ENSG00000169895	A
PYRG2_CHICK	1	124901293	ENSGALG00000016549	X	16516047	ENSG00000047230	A
NP_989738.1	1	125139798	ENSGALG00000016550	X	16051345	ENSG00000126010	A
NP_00100626	1	125276190	ENSGALG00000016551	X	15753850	ENSG00000182287	A
	1	125314815	ENSGALG00000016552	X	15718495	ENSG00000169249	A
TMEM27	1	125336876	ENSGALG00000016553	X	15555372	ENSG00000147003	A
ACE2	1	125364331	ENSGALG00000016554	X	15489077	ENSG00000130234	A
BMX	1	125389430	ENSGALG00000016557	X	15392290	ENSG00000102010	A
NP_989899.1	1	125472478	ENSGALG00000016558	X	15273640	ENSG00000165197	A
NP_00102597	1	125514501	ENSGALG00000016559	X	15247503	ENSG00000165195	A
ASB11	1	125527662	ENSGALG00000016562	X	15209759	ENSG00000165192	A
NP_00100626	1	125552594	ENSGALG00000016563	X	15172030	ENSG00000102048	A
MOSPD2	1	125737284	ENSGALG00000016568	X	14801484	ENSG00000130150	A
FANCB	1	125770710	ENSGALG00000016569	X	14771450	ENSG00000181544	A
GLRA2	1	125818242	ENSGALG00000016571	X	14457565	ENSG00000101958	A
GEMIN8	1	126207687	ENSGALG00000016574	X	13934766	ENSG000000046647	A
NP_00101256	1	126252299	ENSGALG00000016575	X	13698983	ENSG000000046653	A
OFD1	1	126359777	ENSGALG00000016576	X	13662785	ENSG000000046651	A
NP_00100626	1	126388987	ENSGALG00000016578	X	13640282	ENSG00000196459	A
NP_00100867	1	126395779	ENSGALG00000016579	X	13617262	ENSG00000123595	A
	1	126408830	ENSGALG00000016581	X	13581146	ENSG00000176896	A
EGFL6	1	126433335	ENSGALG00000016584	X	13497645	ENSG00000198759	A
NP_00101168	1	126823957	ENSGALG00000016590	X	12795123	ENSG00000196664	A
NP_00100626	1	126836633	ENSGALG00000016592	X	12719414	ENSG00000101911	A
FRMPD4	1	126932572	ENSGALG00000016594	X	12066506	ENSG00000169933	A
MSL3L1	1	127455688	ENSGALG00000016598	X	11686199	ENSG00000005302	A
ARHGAP6	1	127872311	ENSGALG00000016602	X	11065584	ENSG000000047648	A
NP_989460.1	1	128243953	ENSGALG00000016603	X	10373596	ENSG00000101871	A
CLCN4	1	128567209	ENSGALG00000016607	X	10084985	ENSG000000073464	A
WWC3	1	128607877	ENSGALG00000016611	X	9943795	ENSG000000047644	A
SHROOM2	1	128802319	ENSGALG00000016614	X	9714496	ENSG00000146950	A
GPR143	1	128971289	ENSGALG00000016615	X	9653454	ENSG00000101850	A
KALM_CHICK	1	129616326	ENSGALG00000016616	X	8456915	ENSG00000011201	A
PNPLA4	1	130120480	ENSGALG00000016618	X	7826804	ENSG00000006757	A
STS	1	130349862	ENSGALG00000016622	X	7147472	ENSG00000101846	A
HDHD1A	1	130453764	ENSGALG00000016623	X	6976961	ENSG00000130021	A
	1	130855539	ENSGALG00000016628	X	5818085	ENSG00000146938	A
	1	132169227	ENSGALG00000016629	X	3532415	ENSG00000183943	A
MXRAS	1	132390251	ENSGALG00000016635	X	3236606	ENSG00000101825	A
NP_989703.1	1	132548048	ENSGALG00000016636	X	2832011	ENSG00000006756	A
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GYG2	1	132614111	ENSGALG00000016655	X	2756859	ENSG000000056998	A
XG	1	132633051	ENSGALG00000016656	X	2680115	ENSG00000124343	A
DHRXS	1	132779441	ENSGALG00000016681	X	2147557	ENSG00000169084	A
HIOM_CHICK	1	133127530	ENSGALG00000016685	X	1694024	ENSG00000196433	A
CXorf3	1	133142878	ENSGALG00000016686	X	1670486	ENSG00000197976	A
P2RY8_CHICK	1	133187192	ENSGALG00000016687	X	1541468	ENSG00000182162	A
ASMTL	1	133224452	ENSGALG00000016689	X	1482032	ENSG00000169093	A
NM_204231.2	1	133256379	ENSGALG00000016691	X	1465144	ENSG00000169100	A
	1	133397371	ENSGALG00000016696	X	1274885	ENSG00000205755	A
Q00G66_CHIC	1	133843672	ENSGALG00000016698	X	505079	ENSG00000185960	A
PPP2R3B	1	134064583	ENSGALG00000016702	X	214970	ENSG00000167393	A
	1	134174603	ENSGALG00000016717	X	160025	ENSG00000178605	A
OSZIV4_CHIC	1	134186576	ENSGALG00000016721	X	132989	ENSG00000182378	A
RGN_CHICK	1	134230907	ENSGALG00000016724	X	46822719	ENSG00000130988	A
PHF16	1	134253123	ENSGALG00000016727	X	46656680	ENSG00000102221	A
XRP2_CHICK	1	134314101	ENSGALG00000016728	X	46581319	ENSG00000102218	A
SLC9A7	1	134378528	ENSGALG00000016734	X	46351081	ENSG000000065923	A
	1	141538564	ENSGALG00000016823	X	132178363	ENSG00000183434	A
FOXP3	1	78726042	ENSGALG00000019005	X	48994354	ENSG000000049768	A
	1	133309331	ENSGALG00000019147	X	1415509	ENSG00000185291	A
	1	133309331	ENSGALG00000019147	X	1347693	ENSG00000198223	A
SMPX	1	122571767	ENSGALG00000019157	X	21634012	ENSG000000091482	A
	1	117148698	ENSGALG00000019164	X	36238869	ENSG00000205081	A
CXorf30	1	117047650	ENSGALG00000019165	X	36156656	ENSG00000205082	A
	1	71995193	ENSGALG00000019262	X	148481974	ENSG00000171129	A
	1	70500859	ENSGALG00000019266	X	148664132	ENSG00000171116	A
PGRC1_CHICK	4	16741598	ENSGALG00000020260	X	118254279	ENSG00000101856	A
AKAP14	4	16620492	ENSGALG00000020261	X	118913828	ENSG00000186471	A
NP_00100643	4	16614499	ENSGALG00000020262	X	118943052	ENSG00000101882	A
GBRG4_CHIC	4	10924256	ENSGALG00000020292	X	150872253	ENSG00000102287	A
NP_00104154	4	2822772	ENSGALG00000020316	X	114144794	ENSG00000123496	A
ACRC	4	2174236	ENSGALG00000020322	X	70714986	ENSG00000147174	A
FAM155B	4	836001	ENSGALG00000020329	X	68641803	ENSG00000130054	A
IGBP1	4	1192386	ENSGALG00000020330	X	69270043	ENSG000000089289	A
QSZLE4_CHIC	4	1418423	ENSGALG00000020331	X	78087485	ENSG00000078589	A
PFKFB1	1	3392564	ENSGALG00000022191	X	54976315	ENSG00000158571	A
	1	62299079	ENSGALG00000022555	X	152606586	ENSG00000130821	A
KCNE1L	4	13903372	ENSGALG00000023613	X	108753585	ENSG00000176076	A
	4	2164580	ENSGALG00000023937	X	153943098	ENSG00000214827	A
	4	1606880	ENSGALG00000024039	X	128866195	ENSG00000156697	A
RAB33A	4	1556095	ENSGALG00000024049	X	129133454	ENSG00000134594	A

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CD99	1	132659666	ENSGALG00000024488	X	2619228	ENSG00000002586	A	
PIR	1	125400230	Part of FGF	X	15312847	ENSG000000087842	X	deeply conserved
TIMP1	1	55164198	Real	X	47326634	ENSG00000102265	A	deeply conserved
Cxorf59	1	116994255	Real	X	35967054	ENSG00000176034	A	deeply conserved
ARX	1	43732581		X	24932213	ENSG00000004848	A	not in ensalg
SYN1	1	55118079		X	47316244	ENSG00000008056	A	not in ensalg
PRICKLE3	1	31438896		X	48918847	ENSG00000012211	A	not in ensalg
WAS	1	24025413		X	48427141	ENSG00000015285	A	deeply conserved
SLC38A5	1	32782142		X	48201866	ENSG00000017483	A	not in ensalg
SCML1	1	124185588		X	17665509	ENSG000000047634	A	not in ensalg
ZNF275	1	62048453		X	152252807	ENSG00000063587	A	not in ensalg
PDZD4	1	31069384		X	152720817	ENSG000000067840	A	not in ensalg
ATP2B3	1	45300295		X	152436328	ENSG000000067842	A	not in ensalg
ATP6AP1	1	24172382		X	153310172	ENSG000000071553	A	not in ensalg
FAM50A	1	116527414		X	153325698	ENSG000000071859	A	not in ensalg
FAM3A	1	25015605		X	153387696	ENSG000000071889	A	not in ensalg
SMC1A	1	72580822		X	53417795	ENSG000000072501	A	not in ensalg
ARAF	1	59005904		X	47305522	ENSG000000078061	A	not in ensalg
ARHGAP4	1	35426007		X	152826015	ENSG000000089820	A	not in ensalg
H2BFM	1	50048754		X	103154925	ENSG00000101812	A	not in ensalg
GUCY2F	1	198484671		X	108502791	ENSG00000101890	A	not in ensalg
TLR8	1	126824445		X	12834679	ENSG00000101916	A	not in ensalg
SUV39H1	1	7869719		X	48440075	ENSG00000101945	A	not in ensalg
ABCD1	1	16352134		X	152643517	ENSG00000101986	A	not in ensalg
CACNA1F	1	63646141		X	48948467	ENSG00000102001	A	not in ensalg
ELF4	1	170036155		X	129026539	ENSG00000102034	A	not in ensalg
KCND1	1	75800037		X	48703583	ENSG00000102057	A	not in ensalg
UBE2NL	1	46733229		X	142794839	ENSG00000102069	A	not in ensalg
PIM2	1	20467990		X	48655407	ENSG00000102096	A	not in ensalg
GATA1	1	4350543		X	48529906	ENSG00000102145	A	not in ensalg
GPR50	4	17750652		X	150095717	ENSG00000102195	A	not in ensalg
PCTK1	1	47707862		X	46962576	ENSG00000102225	A	not in ensalg
USP11	1	34794327		X	46977258	ENSG00000102226	A	not in ensalg
FGD1	1	61109506		X	54488614	ENSG00000102302	A	not in ensalg
TAF7L	4	2027949		X	100409898	ENSG00000102387	A	not in ensalg
NUDT10	1	46724098		X	51091823	ENSG00000122824	A	not in ensalg
H2BFWT	1	50048754		X	103152376	ENSG00000123569	A	not in ensalg
ESX1	1	86492969		X	103381376	ENSG00000123576	A	not in ensalg
IQSEC2	1	62219955		X	53278784	ENSG00000124313	A	not in ensalg
JARID1C	1	62386925		X	53237381	ENSG00000126012	A	not in ensalg
ELK1	1	47678162		X	47379864	ENSG00000126767	A	not in ensalg
PNCK	1	6806182		X	152588379	ENSG00000130822	A	not in ensalg
PLXNA3	1	2532874		X	153339817	ENSG00000130827	A	not in ensalg
DUSP9	1	45171605		X	152561182	ENSG00000130829	A	not in ensalg
UBA1	4	53135110		X	46935204	ENSG00000130985	A	not in ensalg
MORC4	1	110097971		X	106070620	ENSG00000133131	A	not in ensalg
CCNB3	1	176875780		X	49856156	ENSG00000147082	A	not in ensalg
ZNF182	1	62048219		X	47719195	ENSG00000147118	A	not in ensalg
ZNF41	1	62048306		X	47191352	ENSG00000147124	A	not in ensalg
RAB41	4	1235106		X	69418793	ENSG00000147127	A	not in ensalg
GABRQ	1	135548828		X	151557293	ENSG00000147402	A	not in ensalg
SHROOM4	1	146009938		X	50351387	ENSG00000158352	A	not in ensalg
FAAH2	4	1790858		X	57329864	ENSG00000165591	A	not in ensalg
FRMD7	4	3452335		X	131038702	ENSG00000165694	A	not in ensalg
PASD1	4	17567796		X	150482663	ENSG00000166049	A	not in ensalg
Cxorf48	1	21498494		X	134118129	ENSG00000169551	A	not in ensalg
GPR82	1	115468554		X	41468378	ENSG00000171657	A	not in ensalg
HCFC1	1	56719909		X	152866204	ENSG00000172534	A	not in ensalg
PHF8	1	58765222		X	53979834	ENSG00000172943	A	not in ensalg
ZNF449	1	62048498		X	134306387	ENSG00000173275	A	not in ensalg
EIF1AX	1	123269626	ENSGALG00000016410	X	20056095	ENSG00000173674	A	
ZNF674	1	62048231		X	46243490	ENSG00000175176	A	not in ensalg
SAGE1	4	4174201		X	134803451	ENSG00000181433	A	not in ensalg
LHFP1	1	175252837		X	111760535	ENSG00000182508	A	not in ensalg
MTCP1	4	2160784		X	153943091	ENSG00000182712	A	not in ensalg
FAM9A	1	625013		X	8718836	ENSG00000183304	A	not in ensalg
FAM120C	1	165381420		X	54111482	ENSG00000184083	A	not in ensalg
GPR173	1	28482924		X	53095231	ENSG00000184194	A	not in ensalg
SATL1	1	121772972		X	84222096	ENSG00000184788	A	not in ensalg
BCAP31	1	15746672		X	152619146	ENSG00000185825	A	not in ensalg
NAP1L3	1	39,818,228		X	92812585	ENSG00000186310	A	not in ensalg
ZNF75D	1	62048636		X	134247386	ENSG00000186376	A	not in ensalg
NAP1L2	1	39819092		X	72348860	ENSG00000186462	A	not in ensalg
ERAS	4	3474775		X	48572227	ENSG00000187682	A	not in ensalg
AL158055.12	1	104487104		X	51166507	ENSG00000187690	A	not in ensalg
ANKRD58	4	51203648		X	118776604	ENSG00000187808	A	not in ensalg
WDR42B	1	33175939		X	27907570	ENSG00000189186	A	not in ensalg
NUDT11	1	46724098		X	51249603	ENSG00000196368	A	not in ensalg
WNK3	1	62596564		X	54239580	ENSG00000196632	A	not in ensalg
POU3F4	1	96217787		X	82649941	ENSG00000196767	A	not in ensalg
ZNF81	1	62048219		X	47581245	ENSG00000197779	A	not in ensalg
RPS4X	4	1862926		X	71409178	ENSG00000198034	A	not in ensalg
PLXNB3	4	82767944		X	152682845	ENSG00000198753	A	not in ensalg
L1CAM	1	30496406		X	152780163	ENSG00000198910	A	not in ensalg
RPL39	4	16633302		X	118804497	ENSG00000198918	A	not in ensalg
GD11	1	944310		X	153318705	ENSG00000203879	A	not in ensalg
NHSL2	1	124407543		X	71270224	ENSG00000204131	A	not in ensalg
RP5-1091N2.8	4	2377946		X	70240562	ENSG00000204165	A	not in ensalg
DGKK	1	170623134		X	50128637	ENSG00000204466	A	not in ensalg
AL513007.5	1	99015294		X	73723307	ENSG00000212631	A	not in ensalg
INGX	1	143467605		X	70628694	ENSG00000212633	A	not in ensalg
ZBED1	1	132787319		X	2414455	ENSG00000214717	A	not in ensalg
AC004835.2	1	133149514		X	118270637	ENSG00000214992	A	not in ensalg
AC004386.1	1	99015291		X	73334464	ENSG00000215107	A	not in ensalg
ZNF630	1	62048219		X	47802547	ENSG00000221994	A	not in ensalg
PDHA1	1	123735114	ENSGALG00000016430	X	19283385	ENSG00000163114	A	
RPL36A	4	2006692	ENSGALG000000004952	X	113730376	ENSG00000165502	A	
QSZKQ9_CHIC	4	4422127	ENSGALG000000006457	X	114330261	ENSG00000170748	A	
PGK_CHICK	4	13036123	ENSGALG000000007936	X	77265348	ENSG00000170950	A	
XK	4	5160873	ENSGALG000000006637	X	37472073	ENSG00000172967	A	
NP_00101255	4	2231941	ENSGALG000000005475	X	70489192	ENSG00000177105	A	
CETN2	4	11378406	ENSGALG000000007510	X	151748963	ENSG00000177143	A	
CSTF2	4	5171532	ENSGALG000000006760	X	99963894	ENSG00000177613	A	

TAF7	4	2026182	ENSGALG00000004999	X	100425228	ENSG00000178913	A	
XIAP	4	15779875	ENSGALG00000008491	X	122868524	ENSG00000180152	A	
IF2G_CHICK	1	121677562	ENSGALG00000016340	X	23999592	ENSG00000180574	A	
ZRSR2	4	1269659	ENSGALG00000004187	X	77271902	ENSG00000187866	A	
NKAP	4	16614499	ENSGALG00000020262	X	118943390	ENSG00000189134	A	
GK	1	119230770	ENSGALG00000016285	X	30648889	ENSG00000196475	A	
KLHL13	4	3190314	ENSGALG00000005982	X	116928087	ENSG00000198642	A	
CHM	4	8622348	ENSGALG00000006906	X	85098025	ENSG00000203668	A	
ZRSR2	1	125314815	ENSGALG00000016552	X	15743719	ENSG00000212643	A	
NUP62CL	4	1871417	ENSGALG00000004856	X	106284125	ENSG00000213024	A	
RBMX	4	4422127	ENSGALG00000006457	X	114330261	ENSG00000213516	A	
RL39_CHICK	4	16633035	ENSGALG00000008620	X	118808002	ENSG00000214289	A	
UTP14A	4	1606880	ENSGALG00000024039	X	128881052	ENSG00000214320	A	
HTATSF1	4	4343017	ENSGALG00000006410	X	135412600	ENSG00000215074	A	
GTPBP6	1	134174603	ENSGALG00000016717	X	168295	ENSG00000215634	A	
ATP7A	4	13002692	ENSGALG00000007902	X	77155029	ENSG00000215761	A	
IAG2_CHICK	4	12984311	ENSGALG00000007861	X	77017750	ENSG00000215762	A	
ATP7A	4	13002692	ENSGALG00000007902	X	77155029	ENSG00000215763	A	
ATRX	4	12905188	ENSGALG00000007843	X	76826743	ENSG00000215766	A	
HSF3_CHICK	4	251929	ENSGALG00000004644	X	65403953	ENSG00000089472	A	misidentified by ensembl
HM14A_CHICK	4	9458044	ENSGALG00000007131	X	80263772	ENSG00000198157	A	misidentified by ensembl
FUNDC2	4	13000791	ENSGALG00000007863	X	77047537	ENSG00000131174	A	misidentified by ensembl
TMSB4X	4	1269659	ENSGALG00000004187	X	77281835	ENSG00000187325	A	misidentified by ensembl
NP_00100846	4	2006692	ENSGALG00000004952	X	100553941	ENSG00000126945	A	misidentified by ensembl
MTCP1	4	2164580	ENSGALG00000023937	X	153938384	ENSG00000165775	A	misidentified by ensembl
TRMT12	4	5178432	ENSGALG00000006773	X	12903150	ENSG00000205542	A	misidentified by ensembl
NP_00100846	4	16846725	ENSGALG00000008867	X	103,292,352		A	misidentified by ensembl
BX649443.16				X	153646932	ENSG00000100721	A	misidentified by ensembl
VXC3A				X	79580677	ENSG00000183665	A	misidentified by ensembl
VCX				X	103,292,352	ENSG00000170619	A	misidentified by ensembl
VCX2				X	2245371	ENSG00000205681	B1	chimp/orang/maaque
VCX3B				X	6461660	ENSG00000169059	B1	chimp/gorilla/orang/maaque
FAM9B				X	7770303	ENSG00000182583	B1	chimp/gorilla/orang/maaque
FAM9C				X	8097985	ENSG00000177504	B1	chimp/gorilla/orang/maaque
S100G				X	8392871	ENSG00000205642	B1	chimp/gorilla/orang/maaque
FTHL17				X	8953036	ENSG00000177138	B1	chimp/gorilla/orang/maaque
FTH1				X	12963658	ENSG00000187268	B1	chimp/orang/maaque
Cxorf27				X	16578202	ENSG00000169906	B1	mammals only?
Z93403.1				X	30999279	ENSG00000132446	B1	Retrogene
AC136488.3				X	37236164	ENSG00000219186	B1	Retrogene
Cxorf31				X	37735014	ENSG00000187516	B1	mammals only?
Cxorf24				X	42029377	ENSG00000212635	B1	chimp only?
Cxorf25				X	44893599	ENSG00000212634	B1	mammals only?
SSX6				X	46631800	ENSG00000204904	B1	mammals only?
SSX5				X	47227914	ENSG00000196741	B1	mammals only?
SSX1				X	47467857	ENSG00000187893	B1	mammals only?
SSX10				X	47852032	ENSG00000171483	B1	mammals only?
SSX9				X	47930600	ENSG00000165583	B1	mammals only?
SSX3				X	47957054	ENSG00000126752	B1	mammals only?
SSX4				X	48021100	ENSG00000185319	B1	mammals only?
SSX4B				X	48039829	ENSG00000204648	B1	mammals only?
AF196972.1				X	48090807	ENSG00000165584	B1	mammals only?
PCSK1N				X	48127912	ENSG00000204645	B1	mammals only?
PPP1R3F				X	48146468	ENSG00000198946	B1	mammals only?
GAGE13				X	48272500	ENSG00000204620	B1	mammals only?
GAGE10				X	48574451	ENSG00000102109	B1	mammals only?
GAGE12J				X	49013261	ENSG00000049769	B1	mammals only?
GAGE2E				X	49047069	ENSG00000215269	B1	mammals only?
GAGE2C				X	49047092	ENSG00000215276	B1	mammals only?
GAGE2D				X	49047131	ENSG00000215275	B1	mammals only?
GAGE12B				X	49084527	ENSG00000222023	B1	mammals only?
GAGE12E				X	49084570	ENSG00000205775	B1	mammals only?
GAGE12F				X	49094060	ENSG00000215274	B1	mammals only?
GAGE12G				X	49122652	ENSG00000215253	B1	mammals only?
GAGE12H				X	49183724	ENSG00000198716	B1	mammals only?
GAGE1				X	49202836	ENSG00000216649	B1	mammals only?
GAGE2A				X	49202856	ENSG00000217977	B1	mammals only?
PAGE1				X	49212424	ENSG00000068990	B1	mammals only?
PAGE4				X	49231496	ENSG00000215266	B1	mammals only?
RP11-114H20.1				X	49241043	ENSG00000205777	B1	mammals only?
RP11-363G10.2				X	49241043	ENSG00000189064	B1	mammals only?
XAGE2				X	49339010	ENSG00000068985	B1	mammals only?
XAGE1				X	49480601	ENSG00000101951	B1	mammals only?
XAGE1B				X	51810705	ENSG00000182776	B1	mammals only?
XAGE2B				X	51959703	ENSG00000179028	B1	mammals only?
XAGE1C				X	52128793	ENSG00000155622	B1	mammals only?
XAGE1D				X	52255543	ENSG00000204382	B1	mammals only?
XAGE1E				X	52271944	ENSG00000204379	B1	mammals only?
SSX7				X	52397079	ENSG00000185751	B1	mammals only?
SSX2				X	52528494	ENSG00000183461	B1	mammals only?
SSX2B				X	52544884	ENSG00000204376	B1	mammals only?
SPANXN5				X	52557778	ENSG00000204375	B1	mammals only?
XAGE5				X	52689836	ENSG00000204368	B1	mammals only?
XAGE3				X	52742671	ENSG00000187754	B1	mammals only?
FAM156B				X	52797033	ENSG00000157950	B1	mammals only?
FAM156A				X	52841911	ENSG00000204363	B1	mammals only?
PAGE2B				X	52857953	ENSG00000171405	B1	mammals only?
PAGE2				X	52908285	ENSG00000171402	B1	mammals only?
PAGE5				X	52943081	ENSG00000179304	B1	mammals only?
PAGE3				X	52993187	ENSG00000182646	B1	mammals only?
AL159987.19				X	55118221	ENSG00000187761	B1	mammals only?
AL354865.9				X	55132210	ENSG00000221833	B1	mammals only?
Cxorf62				X	55263515	ENSG00000158639	B1	mammals only?
AL590763.2				X	55301573	ENSG00000204279	B1	mammals only?
AL590763.2				X	55697879	ENSG00000169164	B1	mammals only?
Cxorf49				X	56772443	ENSG00000204272	B1	mammals only?
BX276092.9				X	68316125	ENSG00000215162	B1	chimp/orang/maaque
DMRTC1				X	70596245	ENSG00000215120	B1	chimp only?
DMRTC1B				X	70628887	ENSG00000215116	B1	chimp only?
				X	70850946	ENSG00000215115	B1	mammals only?
				X	70900227	ENSG00000215113	B1	mammals only?
				X	71913697	ENSG00000184911	B1	mammals only?
				X	72008584	ENSG00000159123	B1	mammals only?

AL353999.2	X	72074728	ENSG00000204119	B1	mammals only?
CPXCR1	X	87888882	ENSG00000147183	B1	mammals only?
AL136362.10	X	91241192	ENSG00000204089	B1	human only?
ARMCX4	X	100627118	ENSG00000196440	B1	mammals only?
TCEAL2	X	101267316	ENSG00000184905	B1	mammals only?
TCEAL6	X	101281589	ENSG00000204071	B1	mammals only?
BEX5	X	101295340	ENSG00000184515	B1	mammals only?
	X	101356936	ENSG00000215046	B1	
	X	101601896	ENSG00000215029	B1	
	X	102204244	ENSG00000133169	B1	mammals only?
BEX1	X	102356708	ENSG00000102409	B1	mammals only?
BEX4	X	102394582	ENSG00000180964	B1	mammals only?
TCEAL8	X	102415275	ENSG00000204065	B1	mammals only?
TCEAL5	X	102450938	ENSG00000133134	B1	mammals only?
BEX2	X	102471813	ENSG00000182916	B1	mammals only?
TCEAL7	X	102498036	ENSG00000185222	B1	mammals only?
WBP5	X	102517910	ENSG00000166681	B1	mammals only?
NGFRAP1	X	102718054	ENSG00000133142	B1	mammals only?
TCEAL4	X	102749035	ENSG00000196507	B1	mammals only?
TCEAL3	X	102770304	ENSG00000172465	B1	mammals only?
TCEAL1	X	102852493	ENSG00000179363	B1	mammals only?
TMEM31	X	104350269	ENSG00000133149	B1	mammals only?
TEX13A	X	107110750	ENSG00000170925	B1	mammals only?
TEX13B	X	109305763	ENSG00000212738	B1	gorilla only?
AL359079.15	X	111011781	ENSG00000204025	B1	mammals only?
AC005191.1	X	114331227	ENSG00000175718	B1	chimp/orang
CXorf55	X	114430548	ENSG00000102021	B1	mammals only?
LUZP4	X	115506878	ENSG00000204019	B1	mammals only?
CXorf61	X	118096627	ENSG00000175553	B1	mammals only?
KIAA1210	X	119090257	ENSG00000203989	B1	mammals only?
RHOXF2B	X	119127053	ENSG00000101883	B1	mammals only?
RHOXF1	X	119176495	ENSG00000131721	B1	mammals only?
RHOXF2	X	119890485	ENSG00000203983	B1	mammals only?
RP1-321E8.3	X	119895375	ENSG00000213505	B1	mammals only?
RP6-166C19.11	X	119900236	ENSG00000203981	B1	mammals only?
RP6-166C19.10	X	119905096	ENSG00000213503	B1	mammals only?
RP6-166C19.9	X	119909957	ENSG00000213499	B1	mammals only?
RP6-166C19.6	X	119909957	ENSG00000213504	B1	mammals only?
RP6-166C19.8	X	119914817	ENSG00000203979	B1	mammals only?
RP6-166C19.7	X	119924561	ENSG00000203978	B1	mammals only?
RP6-166C19.5	X	119929421	ENSG00000203977	B1	mammals only?
RP6-166C19.3	X	119934281	ENSG00000203976	B1	mammals only?
RP6-166C19.4	X	119939141	ENSG00000197443	B1	mammals only?
RP6-166C19.2	X	119944007	ENSG00000203975	B1	mammals only?
CXorf64	X	125781432	ENSG00000183631	B1	mammals only?
AL022162.1	X	128502018	ENSG00000214977	B1	mammals only?
APLN	X	128607007	ENSG00000171388	B1	mammals only?
AC004409.1	X	133198743	ENSG00000203952	B1	mammals only?
PLAC1	X	133527539	ENSG00000170965	B1	mammals only?
FAM127C	X	133982209	ENSG00000212747	B1	mammals only?
FAM127B	X	133983721	ENSG00000203950	B1	mammals only?
FAM127A	X	133993999	ENSG00000134590	B1	mammals only?
AL590325.10	X	134083233	ENSG00000203949	B1	chimp/orang
RP11-274K13.2	X	134883732	ENSG00000203945	B1	mammals only?
CXorf19	X	138271925	ENSG00000173954	B1	mammals only?
RP11-35F15.2	X	138865550	ENSG00000203933	B1	mammals only?
RP1-177G6.2	X	139619590	ENSG00000203930	B1	mammals only?
CDR1	X	139692236	ENSG00000184258	B1	mammals only?
SPANXB2	X	139912422	ENSG00000198820	B1	mammals only?
SPANXB1	X	139924427	ENSG00000203929	B1	mammals only?
LDOC1	X	140097596	ENSG00000182195	B1	mammals only?
SPANXC	X	140163265	ENSG00000198573	B1	mammals only?
SPANXA2	X	140499475	ENSG00000198021	B1	mammals only?
SPANXA1	X	140505291	ENSG00000203926	B1	mammals only?
SPANXD	X	140613237	ENSG00000196406	B1	mammals only?
SPANXN4	X	141941370	ENSG00000189326	B1	mammals only?
SPANXN3	X	142424231	ENSG00000189252	B1	mammals only?
SPANXN2	X	142622721	ENSG00000203924	B1	mammals only?
SPANXN1	X	144136799	ENSG00000203923	B1	mammals only?
CXorf1	X	144716888	ENSG00000221870	B1	orang only?
Z97180.1	X	145508397	ENSG00000185351	B1	chimp only?
FMR1NB	X	146870541	ENSG00000176988	B1	mammals only?
FATE1	X	150635164	ENSG00000147378	B1	mammals only?
MAGEA5	X	151033182	ENSG00000183686	B1	mammals only?
CSAG2	X	151627400	ENSG00000184324	B1	mammals only?
CSAG4	X	151646636	ENSG00000214915	B1	mammals only?
CSAG1	X	151653884	ENSG00000198930	B1	mammals only?
AF002997.4	X	151678543	ENSG00000197463	B1	orang/maaque
U52112.2	X	152799321	ENSG00000196987	B1	mammals only?
EMD	X	153260917	ENSG00000102119	B1	mammals only?
LAGE3	X	153358435	ENSG00000196976	B1	mammals only?
CXorf52	X	153452673	ENSG00000197371	B1	chimp/orang/lemur
CTAG1A	X	153466601	ENSG00000183678	B1	mammals only?
AF277315.6	X	153480579	ENSG00000203873	B1	human only?
CTAG1B	X	153499059	ENSG00000184033	B1	mammals only?
Cxorf52B	X	153514068	ENSG00000212744	B1	chimp/orang/lemur
CTAG2	X	153533446	ENSG00000126890	B1	mammals only?
RP11-115M6.5	X	153704817	ENSG00000203870	B1	mammals only?
AKAP4	X	49842146	ENSG00000147081	B2	deeply conserved
AL034485.16	X	103103880	ENSG00000158427	B2	deeply conserved
AMELX	X	11221454	ENSG00000125363	B2	deeply conserved
APEX2	X	55043505	ENSG00000169188	B2	deeply conserved
ARD1A	X	152848561	ENSG00000102030	B2	deeply conserved
CCDC120	X	48803460	ENSG00000147144	B2	deeply conserved
CCDC22	X	48978885	ENSG00000101997	B2	deeply conserved
CFP	X	47368557	ENSG00000126759	B2	deeply conserved
CXorf26	X	75309173	ENSG00000102390	B2	deeply conserved
CXorf38	X	40373229	ENSG00000185753	B2	deeply conserved
CXorf50	X	72079451	ENSG00000212630	B2	deeply conserved
CXorf58	X	23836044	ENSG00000165182	B2	deeply conserved
DNASE1L1	X	153282773	ENSG00000013563	B2	deeply conserved
EBP	X	48265177	ENSG00000147155	B2	deeply conserved
FAM47A	X	34057794	ENSG00000185448	B2	deeply conserved

FAM47B	X	34870852	ENSG00000189132	B2	deeply conserved
FAM47C	X	36936391	ENSG00000198173	B2	deeply conserved
FAM58A	X	152506579	ENSG00000147382	B2	deeply conserved
FOX2	X	55666558	ENSG00000189299	B2	deeply conserved
FTS1	X	48219493	ENSG00000068438	B2	deeply conserved
G6PD	X	153412800	ENSG00000160211	B2	deeply conserved
GP2	X	48857278	ENSG00000068394	B2	deeply conserved
GRIP1	X	135939973	ENSG00000165370	B2	deeply conserved
GRIPAP1	X	48715078	ENSG00000068400	B2	deeply conserved
GS1-484017.2	X	30545410	ENSG00000178556	B2	deeply conserved
IKBK1	X	153423672	ENSG00000073009	B2	deeply conserved
IRAK1	X	152929154	ENSG00000184216	B2	deeply conserved
ITIH5L	X	54792341	ENSG00000102313	B2	deeply conserved
MAGEA1	X	152134716	ENSG00000198681	B2	deeply conserved
MAGEA10	X	151053566	ENSG00000124260	B2	deeply conserved
MAGEA11	X	148575479	ENSG00000185247	B2	deeply conserved
MAGEA12	X	151649952	ENSG00000197172	B2	deeply conserved
MAGEA2	X	151669043	ENSG00000184750	B2	deeply conserved
MAGEA2B	X	151633746	ENSG00000183305	B2	deeply conserved
MAGEA3	X	151685309	ENSG00000213401	B2	deeply conserved
MAGEA4	X	150831652	ENSG00000147381	B2	deeply conserved
MAGEA6	X	151617901	ENSG00000221867	B2	deeply conserved
MAGEA8	X	148770653	ENSG00000156009	B2	deeply conserved
MAGEA9	X	148671395	ENSG00000166008	B2	deeply conserved
MAGEA9B	X	148471105	ENSG00000123584	B2	deeply conserved
MAGEB1	X	30171769	ENSG00000214107	B2	deeply conserved
MAGEB10	X	27736028	ENSG00000177689	B2	deeply conserved
MAGEB16	X	35726380	ENSG00000189023	B2	deeply conserved
MAGEB17	X	16095525	ENSG00000182798	B2	deeply conserved
MAGEB18	X	26066381	ENSG00000176774	B2	deeply conserved
MAGEB2	X	30143601	ENSG00000099399	B2	deeply conserved
MAGEB3	X	30158474	ENSG00000198798	B2	deeply conserved
MAGEB4	X	30170090	ENSG00000120289	B2	deeply conserved
MAGEB5	X	26145340	ENSG00000188408	B2	deeply conserved
MAGEB6	X	26120478	ENSG00000176746	B2	deeply conserved
MAGEC1	X	140819346	ENSG00000155495	B2	deeply conserved
MAGEC2	X	141117797	ENSG00000046774	B2	deeply conserved
MAGEC3	X	140753768	ENSG00000165509	B2	deeply conserved
MAGED1	X	51562895	ENSG00000179222	B2	deeply conserved
MAGED2	X	54850757	ENSG00000102316	B2	deeply conserved
MAGED4	X	51944659	ENSG00000154545	B2	deeply conserved
MAGED4B	X	51821663	ENSG00000187243	B2	deeply conserved
MAGEE1	X	75564521	ENSG00000198934	B2	deeply conserved
MAGEE2	X	74919548	ENSG00000186675	B2	deeply conserved
MAGEH1	X	55495263	ENSG00000187601	B2	deeply conserved
MAGIX	X	48906005	ENSG00000017621	B2	deeply conserved
MCART6	X	103230555	ENSG00000176274	B2	deeply conserved
MECP2	X	152940218	ENSG00000169057	B2	deeply conserved
NAP1L6	X	72262601	ENSG00000204118	B2	deeply conserved
NDUFB11	X	46886559	ENSG00000147123	B2	deeply conserved
NSBP1	X	80255856	ENSG00000198157	B2	deeply conserved
NXF2	X	101356936	ENSG00000185554	B2	deeply conserved
NXF2B	X	101501972	ENSG00000185945	B2	deeply conserved
NXF3	X	102217408	ENSG00000147206	B2	deeply conserved
NXF4	X	101691549	ENSG00000196970	B2	deeply conserved
NXF5	X	100973741	ENSG00000126952	B2	deeply conserved
PLP2	X	48915217	ENSG00000102007	B2	deeply conserved
PNMA3	X	151975530	ENSG00000183837	B2	deeply conserved
PNMA5	X	151908025	ENSG00000198883	B2	deeply conserved
PNMA6A	X	151991521	ENSG00000198013	B2	deeply conserved
PNMA6B	X	151994652	ENSG00000203902	B2	deeply conserved
PORCN	X	48252307	ENSG00000102312	B2	deeply conserved
PYY3	X	49807454	ENSG00000204474	B2	deeply conserved
RBM3	X	48317780	ENSG00000102317	B2	deeply conserved
RENBP	X	152853910	ENSG00000102032	B2	deeply conserved
RGAG1	X	109548941	ENSG00000181110	B2	deeply conserved
RIBC1	X	53466575	ENSG00000158423	B2	deeply conserved
RP13-36C9.1	X	134756363	ENSG00000203947	B2	deeply conserved
RP13-36C9.2	X	134693880	ENSG00000203948	B2	deeply conserved
RP13-36C9.3	X	134711154	ENSG00000213444	B2	deeply conserved
RP13-36C9.6	X	134773630	ENSG00000213441	B2	deeply conserved
RP13-36C9.7	X	134790881	ENSG00000203946	B2	deeply conserved
RPL10	X	153278689	ENSG00000147403	B2	deeply conserved
RPS26L1	X	71180984	ENSG00000196933	B2	deeply conserved
SLC10A3	X	153368842	ENSG00000126903	B2	deeply conserved
SPACA5	X	47748678	ENSG00000171489	B2	deeply conserved
SPACA5B	X	47875014	ENSG00000171478	B2	deeply conserved
SPIN2A	X	57177688	ENSG00000147059	B2	deeply conserved
SPIN2B	X	57162840	ENSG00000186787	B2	deeply conserved
SPIN3	X	57033990	ENSG00000204271	B2	deeply conserved
SPIN4	X	62483832	ENSG00000186767	B2	deeply conserved
SSR4	X	152712165	ENSG00000180879	B2	deeply conserved
TAZ	X	153293071	ENSG00000102125	B2	deeply conserved
TBC1D25	X	48283019	ENSG00000068354	B2	deeply conserved
TEX28	X	153152124	ENSG00000185254	B2	deeply conserved
TEX28P1	X	153115008	ENSG00000182242	B2	deeply conserved
TEX28P2	X	153077878	ENSG00000102080	B2	deeply conserved
TIMM17B	X	48635676	ENSG00000126768	B2	deeply conserved
TMEM187	X	152891185	ENSG00000177854	B2	deeply conserved
TMSL8	X	101655266	ENSG00000158164	B2	deeply conserved
TSPYL2	X	53128274	ENSG00000184205	B2	deeply conserved
TSR2	X	54483578	ENSG00000158526	B2	deeply conserved
UBL4A	X	153365254	ENSG00000102178	B2	deeply conserved
UCHL5IP	X	152363372	ENSG00000183479	B2	deeply conserved
UCHL5IP	X	152366318	ENSG00000213397	B2	deeply conserved
UXT	X	47396140	ENSG00000126756	B2	deeply conserved
WDR13	X	48332467	ENSG00000101940	B2	deeply conserved
WDR40B	X	125511050	ENSG00000198889	B2	deeply conserved
WDR40C	X	125126195	ENSG00000198354	B2	deeply conserved
WDR45	X	48819036	ENSG00000196998	B2	deeply conserved
XX-FW88277B6.1	X	134674851	ENSG00000187267	B2	deeply conserved
Z82254.1	X	103245459	ENSG00000166707	B2	deeply conserved
ZCCHC12	X	117841774	ENSG00000174460	B2	deeply conserved

ZCCHC16			X	111584383	ENSG00000187823	B2	deeply conserved	
ZCCHC5			X	77798222	ENSG00000179300	B2	deeply conserved	
RP3-36411.1	8	17291550	X	109476356	ENSG00000133136	B3a	AMMECR1 Exon	
Q5ZM59_CHIC	24	5523892	ENSGALG00000007323	X	73011598	ENSG00000182707	B3a	breakdown in synteny at xist
TRO	E64_random	538727	X	54963969	ENSG00000067445	B3a	duplication in mammals from chr 10?	
HSD17B10	Un_random	17700410	ENSGALG00000018747	X	53474931	ENSG00000072506	B3a	Gap on GGA 1
NP_00102644	8	14024470	ENSGALG00000005571	X	11039342	ENSG00000004961	B3a	mammals not in ancestral configuration
ZNF280C	10	8647480	ENSGALG00000014375	X	129164372	ENSG00000056277	B3a	mammals not in ancestral configuration
IDH3G	10	4725876	X	152704416	ENSG000000067829	B3a	mammals not in ancestral configuration	
OTUD5	25	1795521	X	48664432	ENSG000000068308	B3a	mammals not in ancestral configuration	
HUWE1	10	8917961	X	53575782	ENSG000000086758	B3a	mammals not in ancestral configuration	
HDAC6	2	29442230	X	48545051	ENSG000000094631	B3a	mammals not in ancestral configuration	
	18	3338797	ENSGALG00000001545	X	102078856	ENSG00000102128	B3a	mammals not in ancestral configuration
SERPINA7	5	48043692	X	105163853	ENSG00000123561	B3a	mammals not in ancestral configuration	
NP_00103225	10	21826523	ENSGALG00000008146	X	102817080	ENSG00000123562	B3a	mammals not in ancestral configuration
IL9R	14	7381016	ENSGALG00000006394	X	154880440	ENSG00000124334	B3a	mammals not in ancestral configuration
NP_989827.1	13	13659657	ENSGALG000000005955	X	100532633	ENSG00000126945	B3a	mammals not in ancestral configuration
USP26	7	24065178	X	131986325	ENSG00000134588	B3a	mammals not in ancestral configuration	
ZNF157	2	461370	X	47114943	ENSG00000147117	B3a	mammals not in ancestral configuration	
ZNF673	16	394296	X	46191673	ENSG00000147121	B3a	mammals not in ancestral configuration	
IGSF1	2	54566872	ENSGALG000000023010	X	130235161	ENSG00000147255	B3a	mammals not in ancestral configuration
	28	2510984	ENSGALG000000009709	X	105298954	ENSG00000157502	B3a	mammals not in ancestral configuration
TSC22D3	9	25234233	X	106843107	ENSG00000157514	B3a	mammals not in ancestral configuration	
FL133_CHICK	2	22635559	ENSGALG00000009475	X	92815861	ENSG00000179083	B3a	Mammals not in ancestral orientation
AL034369.1	6	30334299	X	107513285	ENSG00000189372	B3a	Mammals not in ancestral orientation	
BX890604.9	5	52,075,173	X	3834245	ENSG00000205662	B3a	Mammals not in ancestral orientation	
BX890604.9	5	52,075,173	X	3792439	ENSG00000205663	B3a	Mammals not in ancestral orientation	
RP11-706015	5	52,075,173	X	3745569	ENSG00000205664	B3a	Mammals not in ancestral orientation	
	11	19967982	ENSGALG00000005855	X	15666313	ENSG00000169239	B3a	Mammals not in ancestral orientation
CA5BL	11	19970458	X	15602976	ENSG00000186312	B3a	Mammals not in ancestral orientation	
	18	3338797	ENSGALG00000001545	X	102641334	ENSG00000172476	B3a	Mammals not in ancestral orientation
NP_00102587	18	9012406	ENSGALG00000004434	X	55186260	ENSG00000182518	B3a	Mammals not in ancestral orientation
ZMAT1	22	2569623	X	101023918	ENSG00000166432	B3a	Mammals not in ancestral orientation	
NP_00101285	22	825699	ENSGALG00000000275	X	104536840	ENSG00000181819	B3a	Mammals not in ancestral orientation
	23	5802475	ENSGALG00000024047	X	106402468	ENSG00000204053	B3a	Mammals not in ancestral orientation
	E64	7485	ENSGALG00000005375	X	152336975	ENSG00000189420	B3a	Mammals not in ancestral orientation
				X	83002826	ENSG00000183035	B3a	mammals only
OTU6B_CHICK	2	129518738	ENSGALG000000015920	X	69199066	ENSG00000189401	B3a	Retrogene -- not ancestral
SLC17A5	3	84286082	ENSGALG000000015928	X	22928008	ENSG00000184735	B3a	Retrogene -- not ancestral
NP_00102638	5	51008399	ENSGALG000000017388	X	21784026	ENSG00000198767	B3a	Retrogene -- not ancestral
DHE3_CHICK	6	3646956	ENSGALG000000002020	X	120009143	ENSG00000182890	B3a	Retrogene -- not ancestral
PGAM1_CHIC	6	23773144	ENSGALG000000007606	X	77111027	ENSG00000186076	B3a	Retrogene -- not ancestral
NP_00102641	6	31488972	ENSGALG000000009336	X	129456814	ENSG00000221930	B3a	Retrogene -- not ancestral
	14	9057526	ENSGALG000000007133	X	134383634	ENSG00000178947	B3a	Retrogene -- not ancestral
	14	4611000	ENSGALG000000004773	X	49531315	ENSG00000180991	B3a	Retrogene -- not ancestral
	14	9057526	ENSGALG000000007133	X	133952634	ENSG00000184785	B3a	Retrogene -- not ancestral
	14	4611000	ENSGALG000000004773	X	55529687	ENSG00000185295	B3a	Retrogene -- not ancestral
Q5ZLF1_CHIC	14	107939	ENSGALG000000002910	X	51503267	ENSG00000189369	B3a	Retrogene -- not ancestral
	14	9057526	ENSGALG000000007133	X	134060093	ENSG00000196972	B3a	Retrogene -- not ancestral
CXCR3	15	10187390	X	70752492	ENSG00000186810	B3a	Retrogene -- not ancestral	
	15	11113456	ENSGALG000000007765	X	44588194	ENSG00000189037	B3a	Retrogene -- not ancestral
PABPC5	23	5732127	ENSGALG000000003800	X	90576250	ENSG00000174740	B3a	Retrogene -- not ancestral
PABPC1L2B	23	5738660	X	72140077	ENSG00000184388	B3a	Retrogene -- not ancestral	
PABPC1L2A	23	5738660	X	72213840	ENSG00000186288	B3a	Retrogene -- not ancestral	
NP_00102606	23	1420617	ENSGALG00000000734	X	96025668	ENSG00000204086	B3a	Retrogene -- not ancestral
FBA3	Un_random	11824563	X	154339769	ENSG00000185990	B3a	Retrogene -- not ancestral	
FBA1	Un_random	11824561	X	153767829	ENSG00000197932	B3a	Retrogene -- not ancestral	
FBA2	Un_random	11824562	X	154264943	ENSG00000198444	B3a	Retrogene -- not ancestral	
	Z	46561985	ENSGALG00000000264	X	68297422	ENSG00000181191	B3a	Retrogene -- not ancestral
	Z	39452993	ENSGALG000000012585	X	56606797	ENSG00000188021	B3a	Retrogene -- not ancestral
ACTRT1	21		X	127012622	ENSG00000123165	B3a	Retrogene -- not ancestral	
ATX3_CHICK	5	47024941	ENSGALG000000010766	X	13246276	ENSG00000123594	B3a	Retrogene -- not ancestral
NP_00100439	27	2689834	ENSGALG000000000538	X	118888466	ENSG00000125352	B3a	Retrogene -- not ancestral
TGIF2LX	2	103923416	X	89063537	ENSG00000153779	B3a	Retrogene -- not ancestral	
SLC35A2	8	12657184	X	48645403	ENSG00000102100	B3a	unmapped in chicken	
PQB1P	13	848807	X	48640139	ENSG00000102103	B3a	unmapped in chicken	
CITED1	3	55892256	X	71438222	ENSG00000125931	B3a	unmapped in chicken	
CHST7	9	11755104	X	46318136	ENSG00000147119	B3a	unmapped in chicken	
TKTL1	12	7182008	X	153177345	ENSG00000007350	B3b	Chr 12 Block	
TFE3	12	16045909	X	48772613	ENSG00000068323	B3b	Chr 12 Block	
SYP	12	13780555	X	48931201	ENSG00000102003	B3b	Chr 12 Block	
PRAF2	12	15756716	X	48815762	ENSG00000102050	B3b	Chr 12 Block	
OPN1LW	12	20164767	X	153062939	ENSG00000102076	B3b	Chr 12 Block	
GNL3L	12	735677	X	54570464	ENSG00000130119	B3b	Chr 12 Block	
OPN1MW	12	20164767	X	153101348	ENSG00000147380	B3b	Chr 12 Block	
OR13H1	5	117659	X	130505729	ENSG00000171054	B3b	Moved in Chicken	
ALAS2	12	2766841	X	55052213	ENSG00000158578	B3b	Chr 12 Block	
OPN1MW2	12	20164767	X	153138479	ENSG00000166160	B3b	Chr 12 Block	
BGN	12	3613647	X	152413605	ENSG00000182492	B3b	Chr 12 Block	
RBM10	12	2963602	X	46889575	ENSG00000182872	B3b	Chr 12 Block	
ZCCHC13	12	5261203	X	73440750	ENSG00000187969	B3b	Chr 12 Block	
FLNA	12	9144416	X	153230091	ENSG00000196924	B3b	Chr 12 Block	
	12	10959085	ENSGALG000000006277	X	57949867	ENSG00000198205	B3b	Chr 12 Block
	12	10959085	ENSGALG000000006277	X	57634994	ENSG00000198455	B3b	Chr 12 Block
	4	332735	ENSGALG000000004602	11	93250663		C1	birds only
	1	127527509	ENSGALG000000018518				C1	birds only
	1	132167869	ENSGALG000000022781				C1	birds only
	4	1799816	ENSGALG000000024028				C1	birds only
	4	2409863	ENSGALG000000020319				C1	birds only
	4	4538633	ENSGALG000000006495				C1	birds only
	4	11761534	ENSGALG000000007600				C1	birds only
	4	1192554	ENSGALG000000024093	3	32637833		C1	chicken only
	1	95269982	ENSGALG000000022860				C1	chicken only
	1	95273120	ENSGALG000000019210				C1	chicken only
	1	114968869	ENSGALG000000016305				C1	chicken only
	1	115814943	ENSGALG000000016237				C1	chicken only
	1	117334679	ENSGALG000000018713				C1	chicken only
	1	117340186	ENSGALG000000016601				C1	chicken only
	1	117810001	ENSGALG000000022792				C1	chicken only
	1	120927061	ENSGALG000000016539				C1	chicken only
	1	120934258	ENSGALG000000022791				C1	chicken only
	1	122624798	ENSGALG000000019156				C1	chicken only
	1	125067733	ENSGALG000000017045				C1	chicken only

	1	126162919	ENSGALG00000012431				C1	chicken only
	1	126167917	ENSGALG00000016290				C1	chicken only
	1	126864281	ENSGALG00000016593				C1	chicken only
	1	126878430	ENSGALG00000018838				C1	chicken only
	1	126879836	ENSGALG00000013500				C1	chicken only
	1	127996691	ENSGALG00000022787				C1	chicken only
	1	128245004	ENSGALG00000022786				C1	chicken only
	1	129234746	ENSGALG00000021892				C1	chicken only
	1	129322774	ENSGALG00000022784				C1	chicken only
	1	129530239	ENSGALG00000022783				C1	chicken only
Q9W6D7_CHI	1	133120558	ENSGALG00000016683				C1	chicken only
	1	134460477	ENSGALG00000021891				C1	chicken only
	4	168703	ENSGALG00000024110				C1	chicken only
	4	233102	ENSGALG00000004681				C1	chicken only
	4	237637	ENSGALG00000020326				C1	chicken only
	4	856866	ENSGALG00000024095				C1	chicken only
	4	1098808	ENSGALG00000004484				C1	chicken only
	4	1209324	ENSGALG00000001520				C1	chicken only
	4	1221866	ENSGALG00000024089				C1	chicken only
	4	1364752	ENSGALG00000004124				C1	chicken only
	4	1478810	ENSGALG00000020332				C1	chicken only
	4	1580452	ENSGALG00000003982				C1	chicken only
	4	1795490	ENSGALG00000024029				C1	chicken only
	4	2123171	ENSGALG00000020323				C1	chicken only
	4	2386162	ENSGALG00000020320				C1	chicken only
	4	2516714	ENSGALG00000023880				C1	chicken only
	4	2823045	ENSGALG00000023875				C1	chicken only
	4	3116591	ENSGALG00000020312				C1	chicken only
	4	4205924	ENSGALG00000006183				C1	chicken only
	4	4761130	ENSGALG00000020306				C1	chicken only
	4	5156028	ENSGALG00000020303				C1	chicken only
	4	9102316	ENSGALG00000020298				C1	chicken only
	4	9400671	ENSGALG00000007122				C1	chicken only
	4	9478959	ENSGALG00000007135				C1	chicken only
	4	9618953	ENSGALG00000007214				C1	chicken only
	4	9667046	ENSGALG00000007239				C1	chicken only
	4	9988108	ENSGALG00000023700				C1	chicken only
	4	10100496	ENSGALG00000023698				C1	chicken only
	4	10590948	ENSGALG00000007245				C1	chicken only
	4	11016182	ENSGALG00000023694				C1	chicken only
	4	11023530	ENSGALG00000007293				C1	chicken only
	4	11086129	ENSGALG00000007433				C1	chicken only
	4	11087508	ENSGALG00000023692				C1	chicken only
	4	11090819	ENSGALG00000020291				C1	chicken only
	4	11134361	ENSGALG00000020290				C1	chicken only
	4	11494240	ENSGALG00000020286				C1	chicken only
	4	11518460	ENSGALG00000023685				C1	chicken only
	4	12428109	ENSGALG00000023655				C1	chicken only
	4	12997391	ENSGALG00000023641				C1	chicken only
	4	13312420	ENSGALG00000020275				C1	chicken only
	4	13916994	ENSGALG00000021811				C1	chicken only
	4	14262932	ENSGALG00000020271				C1	chicken only
	4	14468554	ENSGALG00000023564				C1	chicken only
	4	17413563	ENSGALG00000023513				C1	chicken only
	4	16783781	ENSGALG00000008856	2	98204663		C2	deeply conserved
	4	9359368	ENSGALG00000007110	2	102745490		C2	deeply conserved
	4	11695058	ENSGALG00000020283	4	42094906		C2	deeply conserved
	4	12237058	ENSGALG00000007683	4	53951932		C2	deeply conserved
	4	12046226	ENSGALG00000007646	4	54848360		C2	deeply conserved
	4	11440627	ENSGALG00000007546	4	56463267		C2	deeply conserved
	4	2380807	ENSGALG00000005648	6	109591432		C2	deeply conserved
	4	1243715	ENSGALG00000004202	11	72876160		C2	deeply conserved
	4	2422924	ENSGALG00000005747	11	86197048		C2	deeply conserved
	4	158517	ENSGALG00000004692	11	109832851		C2	deeply conserved
	4	1181747	ENSGALG00000004401	12	1625428		C2	deeply conserved
	4	12328044	ENSGALG00000007710	13	26745215		C2	deeply conserved
	4	11268805	ENSGALG00000007470	13	27095046		C2	deeply conserved
	4	12264895	ENSGALG00000007703	13	27985245		C2	deeply conserved
	4	567378	ENSGALG00000004543	13	31264817		C2	deeply conserved
	4	11426418	ENSGALG00000007538	13	76429600		C2	deeply conserved
	4	11292291	ENSGALG00000007482	13	77218652		C2	deeply conserved
NP_00102515	1	71888375	ENSGALG00000014213	22	43511315		C2	deeply conserved
	1	116963398	ENSGALG00000016269				C2	deeply conserved
	1	117011946	ENSGALG00000022793				C2	deeply conserved
	1	121615619	ENSGALG00000016326				C2	deeply conserved
	1	12877363	ENSGALG00000022785				C2	deeply conserved
	1	128779466	ENSGALG00000014556				C2	deeply conserved
	4	174268	ENSGALG00000004688				C2	deeply conserved
	4	1174470	ENSGALG00000004475				C2	deeply conserved
	4	1350731	ENSGALG00000004127				C2	deeply conserved
	4	2895486	ENSGALG00000005895				C2	deeply conserved
	4	2993092	ENSGALG00000020315				C2	deeply conserved
	4	3060438	ENSGALG00000005964				C2	deeply conserved
	4	9606942	ENSGALG00000007210				C2	deeply conserved
NP_989922.1	4	9669318	ENSGALG00000007240				C2	deeply conserved
	4	11053298	ENSGALG00000007355				C2	deeply conserved
	4	11389773	ENSGALG00000007526				C2	deeply conserved
	4	11396340	ENSGALG00000007530				C2	deeply conserved
	4	16734642	ENSGALG00000008689				C2	deeply conserved
MARS2	4	1562865	ENSGALG00000004019	2	198278332	ENSG00000152428	C3a	synteny not conserved
	4	1813693	ENSGALG00000003841	2	234011601		C3a	synteny not conserved
	4	306601	ENSGALG00000004619	4	156354686		C3a	synteny not conserved
GBRB4_CHICK	4	10736799	ENSGALG00000007255	4	46858023		C3a	synteny not conserved
NP_989451.1	4	11255609	ENSGALG00000007466	4	148626518		C3a	synteny not conserved
O5ZK02_CHIC	1	119286214	ENSGALG00000019162	5	150612837	ENSG00000196743	C3a	synteny not conserved
C8orf48	4	11648254	ENSGALG00000007580	8	13468870	ENSG00000164743	C3a	synteny not conserved
	1	115653671	ENSGALG00000016232	8	145985959	ENSG00000161016	C3a	moved in human
INPPL1	4	1211412	ENSGALG00000004336	11	71613473	ENSG00000165458	C3a	moved in human
KCTD12	4	11480977	ENSGALG00000009628	13	76352313	ENSG00000178695	C3a	break in synteny
	4	11536786	ENSGALG00000007570	13	72547843		C3a	synteny not conserved
NP_00101283	1	95221218	ENSGALG00000015459	16	3102564	ENSG00000122386	C3a	synteny not conserved
AIPL1	4	2032806	ENSGALG00000005014	17	6267784	ENSG00000129221	C3a	moved in human
	4	11383181	ENSGALG00000020288	18	570526		C3a	break in synteny

4	16723439	ENSGALG00000008687		19	19484230	ENSG00000178093	C3a	synteny not conserved
1	133397371	ENSGALG00000016696	NT_113966		20945	ENSG00000215751	C3a	synteny not conserved
4	2023617	ENSGALG00000004975		4	47731653		C3b	synteny conserved
4	17550869	ENSGALG00000009063		2	100951177	ENSG00000133138	C3b	synteny conserved