

Supplementary Table S9: Overlap and non-overlap candidate genes detected by analysis of *iHS* and *Rsb* (Rustaqi and Jenoubi) with *Rsb* analysis of Rustaqi *versus* Holstein, Nellore and N'Dama Guinea breeds.

Chr. Name	Candidate gene		<i>iHS</i> = 4 /- 4 (threshold)		<i>Rsb</i> = 5 /- 5 (threshold)		<i>Rsb</i> = 3.5 threshold	<i>Rsb</i> =3 threshold	<i>Rsb</i> = 3.5 threshold	Gene ID
	Start	End	Rustaqi	Jenoubi	Rustaqi	Jenoubi	Rustaqi X Hol.	Rustaqi X Nellore	Rustaqi X N' Dama G.	
1	43730028	44124279	N	N	N	N	Y	N	N	<i>CMSS1</i>
1	56722581	56818961	N	N	Y	N	N	N	Y	<i>CD96-201</i>
1	14791090	15026555	N	Y	N	Y	N	N	N	<i>NCAM2</i>
1	18058709	18207251	N	Y	N	Y	N	N	N	<i>TMPRSS15</i>
1	18208866	18233154	N	N	N	Y	N	N	N	<i>CHODL</i>
1	107241227	107576086	Y	N	N	N	N	N	N	<i>PPM1L</i>
1	112455492	112013084	N	N	N	N	N	Y	N	<i>KCNAB1</i>
1	141349995	141401851	Y	N	N	N	N	N	N	<i>IGSF5</i>
3	8985751	8969737	N	N	N	N	N	N	Y	<i>SLAMF7</i>
3	8985751	8969737	N	N	N	N	N	N	Y	<i>SLAMF6</i>
3	103353700	103422206	Y	N	N	N	N	N	N	<i>CFAP57</i>
4	46912545	46858942	N	N	N	N	N	N	Y	<i>PUS7</i>
4	47228658	46974646	N	N	N	N	N	N	Y	<i>ATXN7L1</i>
4	117411239	117153120	N	N	N	N	N	Y	N	<i>Novel</i>
4	119522032	119565916	N	N	N	N	Y	N	N	<i>Novel</i>
4	120133801	120207828	N	N	N	N	Y	N	N	<i>NCAPG2</i>
4	120230771	120306448	N	N	N	N	Y	N	N	<i>ESYT2</i>
4	120326813	120373331	N	N	N	N	Y	N	N	<i>WDR60</i>
4	120427915	120494453	N	N	N	N	Y	N	N	<i>VIPR2</i>
5	121181282	121188623	N	N	N	N	N	N	N	<i>TRABD</i>
5	121164873	121099143	N	N	N	N	N	N	Y	<i>MOV10L1</i>
5	121188623	121181282	N	N	N	N	N	N	Y	<i>TRABD</i>
5	43746464	43872342	N	N	Y	N	N	N	N	<i>MYRFL-201</i>
5	47534237	47703486	N	N	N	N	Y	N	N	<i>GRIP1</i>
5	47713520	47751430	N	N	N	N	Y	N	N	<i>HELB</i>

8	30529	228065	N	N	N	N	Y	N	N	HIATL1
8	52712391	52292117	N	N	N	N	N	Y	N	PCSK5
8	23386997	23662561	N	Y	N	Y	N	N	N	FOCAD
8	92674692	92346242	N	N	N	N	N	Y	N	PLPPR1
8	104995986	104797238	N	N	N	N	N	N	Y	-
9	104927415	105066196	N	N	N	N	N	N	N	WDR27
10	21573888	21521555	N	N	N	N	N	N	Y	SLC7A8
10	44711724	44842190	Y	N	N	N	N	N	N	GNG2
10	48949618	49750993	Y	N	N	N	N	N	N	RORA (RORA)
10	47303876	47796327	N	N	N	N	N	N	N	TLN2
10	51020033	51240077	Y	N	N	N	N	N	N	MYO1E
11	38706659	38928773	Y	N	N	N	N	N	N	CCDC85A
11	61759950	61969748	N	N	N	N	N	N	N	WDPCP
11	64915358	64770131	N	N	N	N	N	N	Y	MEIS1
11	101350157	101438043	N	N	N	N	N	N	N	NUP214
12	27866074	28033238	N	N	N	N	N	N	N	STARD13
12	28110415	28073218	N	N	N	N	N	N	Y	KL
12	54777914	54825844	N	N	N	N	Y	N	N	RBM26
13	36610252	36833259	Y	N	N	N	N	N	N	MPP7
13	39202450	39632869	Y	N	N	N	N	N	N	SLC24A3
13	43605579	43610260	Y	N	N	N	N	N	N	UCN3
14	70303427	70236070	N	N	N	N	N	N	Y	PTDSS1
15	30023047	30033583	N	N	N	N	N	N	N	BCL9L
15	78254804	78044073	N	N	N	N	N	N	Y	C11orf49
16	30656001	30703396	Y	N	N	N	N	N	N	COQ8A
16	32381118	32471604	Y	N	N	N	N	N	N	KIF26B
16	45621457	45879645	Y	N	N	N	N	N	N	RERE
16	48314477	48181539	N	N	N	N	N	N	Y	NPHP4
17	52565556	52785519	N	N	N	Y	N	N	N	TMEM132B
18	8427455	8516798	Y	N	N	N	N	N	N	PLCG2

26	5017714	5578654	N	Y	N	Y	N	N	N	<i>PCDH15</i>
26	6906081	8343629	Y	Y	N	Y	N	N	N	<i>PRKG1</i>
26	20694707	20777487	Y	N	Y	N	N	N	N	<i>DNMBP</i>
26	20206332	20276715	Y	N	N	N	N	N	N	<i>CNNM1</i>
26	20476402	20466104	N	N	N	N	N	N	Y	<i>SLC25A28</i>
26	20494069	20524328	Y	N	N	N	N	N	N	<i>ENTPD7</i>
26	20613538	20684065	Y	N	N	N	N	N	N	<i>ABCC2</i>
26	21670831	21630816	N	N	N	N	N	N	Y	<i>SLF2</i>
26	21010622	21035035	Y	N	N	N	N	N	N	<i>CWF19L1</i>
27	28963365	28969954	N	N	N	N	N	N	N	<i>DUSP26</i>
28	25073149	25191276	N	N	N	N	N	N	Y	<i>TET1</i>
28	28777941	28562368	N	N	N	N	N	N	Y	<i>MICU1</i>
28	44545580	44597645	N	N	N	N	N	N	N	<i>ZFAND4</i>
28	44545580	44597645	N	N	N	N	N	N	N	<i>NOVEL</i>
28	44612704	44722610	N	N	N	N	N	N	N	<i>NOVEL</i>

- Y indicate the test detect the gene region, N indicate the test did not detect the gene region.
- Red colour lines refer to immunity genes.
- Rsb for Rustaqi X Holstein, revealed 12 genes in Rustaqi (**green colour**): no genes shared between analysis of Rustaqi here & previous genes that appeared in just Iraqi analysis.
- In Rsb Rustaqi X Nellore analysis. 5 genes appeared (**violet colour**), no sharing genes with our previous Iraqi analysis.
- In Rsb Rustaqi X N'Dama G., 26 genes appeared (**brown colour**), 1 gene sharing with previous Iraqi breeds analysis (**CD96**).