

**Table S3** List of all the variants in the candidate region. Non-synonymous variants are bolded.

CHROM	POS	REF	ALT	Effect	Gene	exonRank
28	3039955	T	C	DOWNSTREAM	Q0VC87_BOVIN	
				UTR_3_PRIME	Q0VC87_BOVIN	6
28	3040356	T	C	DOWNSTREAM	Q0VC87_BOVIN	
				UTR_3_PRIME	Q0VC87_BOVIN	6
28	3040696	T	C	UTR_3_PRIME	Q0VC87_BOVIN	6
28	3188097	G	A	EXON	ENSBTAG00000012132	1
28	3333880	A	AT	UTR_3_PRIME	ENSBTAG00000010500	4
28	3390913	A	G	SYNONYMOUS_CODING	GNPAT	18
28	3390916	<b>C</b>	<b>T</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>GNPAT</b>	<b>18</b>
28	3412039	<b>C</b>	<b>T</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>GNPAT</b>	<b>6</b>
28	3418467	<b>C</b>	<b>T</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>C1orf131</b>	<b>1</b>
				UPSTREAM	GNPAT	
28	3418502	<b>C</b>	<b>A</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>C1orf131</b>	<b>1</b>
				UPSTREAM	GNPAT	
28	3418503	<b>A</b>	<b>G</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>C1orf131</b>	<b>1</b>
				UPSTREAM	GNPAT	
28	3448465	T	C	SYNONYMOUS_CODING	C1orf131	5
28	3460901	GC	G	INTRON	TRIM67	14
28	3519455	T	C	SYNONYMOUS_CODING	TRIM67	2
28	3519609	<b>A</b>	<b>G</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>TRIM67</b>	<b>2</b>
28	3777122	<b>A</b>	<b>G</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>TTC13</b>	<b>15</b>
28	3780843	C	T	SYNONYMOUS_CODING	TTC13	17
28	3793749	T	C	UTR_3_PRIME	TTC13	23
28	3962482	T	C	INTRON	ENSBTAG00000045932	8
				INTRON	ENSBTAG00000045932	12
		<b>T</b>	<b>C</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>9</b>
28	3962491	C	T	INTRON	ENSBTAG00000045932	8

				INTRON	ENSBTAG00000045932	12
		<b>C</b>	<b>T</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>9</b>
28	3962516	G	T	INTRON	ENSBTAG00000045932	8
				INTRON	ENSBTAG00000045932	12
28	3962644	A	G	INTRON	ENSBTAG00000045932	8
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>8</b>
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>11</b>
28	3962745	C	T	INTRON	ENSBTAG00000045932	8
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>7</b>
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>10</b>
28	3963070	<b>G</b>	<b>T</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>8</b>
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>6</b>
28	3963654	<b>T</b>	<b>C</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>6</b>
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>5</b>
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>6</b>
28	3963696	<b>C</b>	<b>A</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>6</b>
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>5</b>
28	3963759	T	C	INTRON	ENSBTAG00000045932	5
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>5</b>
				SYNONYMOUS_CODING	ENSBTAG00000045932	5
28	3963829	<b>C</b>	<b>T</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>5</b>
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>4</b>
28	3963857	T	C	INTRON	ENSBTAG00000045932	4
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>4</b>
				<b>SPLICE_SITE_ACCEPTOR</b>	<b>ENSBTAG00000045932</b>	<b>5</b>
28	3963871	T	C	INTRON	ENSBTAG00000045932	4
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>4</b>
28	3964067	G	GA	INTRON	ENSBTAG00000045932	3
				<b>SPLICE_SITE_ACCEPTOR</b>	<b>ENSBTAG00000045932</b>	<b>4</b>
				<b>SPLICE_SITE_DONOR</b>	<b>ENSBTAG00000045932</b>	<b>3</b>

28	3964083	T	C	INTRON	ENSBTAG00000045932	3
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>3</b>
28	3964152	G	A	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>3</b>
28	3964205	C	T	SYNONYMOUS_CODING	ENSBTAG00000045932	3
28	3964227	C	T	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>3</b>
28	3964244	G	A	SYNONYMOUS_CODING	ENSBTAG00000045932	3
28	3964276	T	A,G	<b>STOP_GAINED</b>	<b>ENSBTAG00000045932</b>	<b>3</b>
				SYNONYMOUS_CODING	ENSBTAG00000045932	3
28	3964290	T	C	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>3</b>
28	3964321	C	T	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>3</b>
28	3964341	T	C	INTRON	ENSBTAG00000045932	2
				<b>SPLICE_SITE_ACCEPTOR</b>	<b>ENSBTAG00000045932</b>	<b>3</b>
28	3964342	G	A	INTRON	ENSBTAG00000045932	2
28	3964374	A	G	INTRON	ENSBTAG00000045932	2
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>2</b>
28	3964425	G	A	INTRON	ENSBTAG00000045932	1
				<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>2</b>
28	3964557	G	A	SYNONYMOUS_CODING	ENSBTAG00000045932	1
28	3964585	A	G	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000045932</b>	<b>1</b>
28	3987172	T	C	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000039845</b>	<b>5</b>
28	3987441	G	A	SYNONYMOUS_CODING	ENSBTAG00000039845	5
28	3987483	C	G	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000039845</b>	<b>5</b>
28	3987566	A	G	SYNONYMOUS_CODING	ENSBTAG00000039845	4
28	3987683	C	T	INTRON	ENSBTAG00000039845	3
28	3987860	C	G	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000039845</b>	<b>2</b>
28	4122112	G	A	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000025021</b>	<b>1</b>
28	4262866	C	G	INTRON	ENSBTAG00000025021	6
28	4263657	T	C	SYNONYMOUS_CODING	ENSBTAG00000025021	7
28	4263753	G	C	SYNONYMOUS_CODING	ENSBTAG00000025021	7
28	5292858	A	G	<b>NON_SYNONYMOUS_CODING</b>	<b>SIPA1L2</b>	<b>13</b>

28	5292897	C	T	<b>NON_SYNONYMOUS_CODING</b>	<b>SIPA1L2</b>	<b>13</b>
28	5293106	C	T	SYNONYMOUS_CODING	SIPA1L2	13
28	5299373	C	T	SYNONYMOUS_CODING	SIPA1L2	9
28	5347581	A	G	<b>NON_SYNONYMOUS_CODING</b>	<b>SIPA1L2</b>	<b>2</b>
28	5713156	C	T	SYNONYMOUS_CODING	K1383_BOVIN	1
28	5872194	T	C	UTR_5_PRIME	F1MM52_BOVIN	1
28	5872208	G	T	UTR_5_PRIME	F1MM52_BOVIN	1
28	5872247	T	C	UTR_5_PRIME	F1MM52_BOVIN	1
28	5872313	G	T	UTR_5_PRIME	F1MM52_BOVIN	1
28	5878021	T	C	SYNONYMOUS_CODING	F1MM52_BOVIN	2
28	5909820	G	A	INTRON	F1MM52_BOVIN	4
28	5910015	C	G	UTR_3_PRIME	F1MM52_BOVIN	5
28	5910417	GTT	G	UTR_3_PRIME	F1MM52_BOVIN	5
28	5910473	G	A	DOWNSTREAM	F1MM52_BOVIN	
INTERGENIC						
28	5917639	A	G	SYNONYMOUS_CODING	PCNXL2	33
28	5984896	A	G	SYNONYMOUS_CODING	PCNXL2	25
28	6054537	G	A	SYNONYMOUS_CODING	PCNXL2	21
28	6083098	C	T	<b>NON_SYNONYMOUS_CODING</b>	<b>PCNXL2</b>	<b>19</b>
28	6084058	A	G	<b>NON_SYNONYMOUS_CODING</b>	<b>PCNXL2</b>	<b>18</b>
28	6168134	A	G	SYNONYMOUS_CODING	PCNXL2	9
28	6243190	A	G	<b>NON_SYNONYMOUS_CODING</b>	<b>ENSBTAG00000021183</b>	<b>1</b>
28	6298743	C	T	SYNONYMOUS_CODING	ENSBTAG00000021183	13
28	6559804	T	C	UTR_3_PRIME	KCNK1_BOVIN	3
28	7185945	T	C	SYNONYMOUS_CODING	SLC35F3	5
28	7188541	T	C	INTRON	SLC35F3	5
28	7188752	G	A	INTRON	SLC35F3	6
28	7195511	C	T	SYNONYMOUS_CODING	SLC35F3	8
28	7195646	T	C	SYNONYMOUS_CODING	SLC35F3	8
28	7282915	A	G	SYNONYMOUS_CODING	TARBP1	10

28	7292308	C	A	INTRON	TARBP1	7
28	7296396	G	A	SYNONYMOUS_CODING	TARBP1	6
28	7304942	C	T	SYNONYMOUS_CODING	TARBP1	2
28	7304960	T	C	SYNONYMOUS_CODING	TARBP1	2
28	7304965	<b>C</b>	<b>T</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>TARBP1</b>	<b>2</b>
28	7307397	G	A	SYNONYMOUS_CODING	TARBP1	1
28	7446928	<b>T</b>	<b>G</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>IRF2BP2</b>	<b>1</b>
28	7928014	G	A	UTR_3_PRIME	TOM20_BOVIN	5
28	7928096	G	T	UTR_3_PRIME	TOM20_BOVIN	5
28	7946879	G	GA	UTR_3_PRIME	A8NJ74_BOVIN	12
28	8022387	G	C	INTRON	ARID4B	9
28	8022387	<b>G</b>	<b>C</b>	<b>SPLICE_SITE_ACCEPTOR</b>	<b>ARID4B</b>	<b>10</b>
28	8046931	T	TA	INTRON	ARID4B	3
28	8210510	G	A	SYNONYMOUS_CODING	TBCE_BOVIN	4
28	<b>8223073</b>	<b>C</b>	<b>T</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>TBCE_BOVIN</b>	<b>7</b>
28	8232316	G	A	INTRON	TBCE_BOVIN	15
28	8232316	G	A	UTR_3_PRIME	A7YY59_BOVIN	13
28	8342799	T	C	UTR_3_PRIME	GNG4	4
28	8424006	A	G	UTR_3_PRIME	LYST	51
28	8424588	TA	T	INTRON	LYST	50
28	8450923	G	A	SYNONYMOUS_CODING	LYST	42
28	<b>8492389</b>	<b>G</b>	<b>A</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>LYST</b>	<b>26</b>
28	8508758	GAAA	GA,G, GAA	INTRON	LYST	18
28	<b>8664873</b>	<b>A</b>	<b>G</b>	<b>EXON</b>	<b>U6</b>	<b>1</b>
28	8733389	A	ATG	UTR_3_PRIME	NID1	31
28	8733559	G	A	SYNONYMOUS_CODING	NID1	31
28	8733580	G	A	SYNONYMOUS_CODING	NID1	31
28	8796044	A	C	SYNONYMOUS_CODING	NID1	7
28	8798180	<b>T</b>	<b>C</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>NID1</b>	<b>3</b>
28	8798200	<b>A</b>	<b>G</b>	<b>NON_SYNONYMOUS_CODING</b>	<b>NID1</b>	<b>3</b>

28	8798242	A	G	NON_SYNONYMOUS_CODING	NID1	3
28	8798266	G	A	NON_SYNONYMOUS_CODING	NID1	3
28	8917765	A	G	SYNONYMOUS_CODING	GPR137B	3
28	8942111	A	G	DOWNSTREAM	GPR137B	
INTERGENIC						
28	9026323	A	C	NON_SYNONYMOUS_CODING	ERO1LB	1
28	9242413	A	G	DOWNSTREAM	Q2YDD7_BOVIN	
UTR_3_PRIME					Q2KIF9_BOVIN	44
28	9250434	G	C	NON_SYNONYMOUS_CODING	Q2KIF9_BOVIN	34
28	9264455	A	G	SYNONYMOUS_CODING	Q2KIF9_BOVIN	20
28	9269959	G	A	NON_SYNONYMOUS_CODING	Q2KIF9_BOVIN	17
28	9273258	T	C	SYNONYMOUS_CODING	Q2KIF9_BOVIN	14
28	9273312	T	A	INTRON	Q2KIF9_BOVIN	13
28	9441112	T	C	SYNONYMOUS_CODING	ACTN2	15
28	9483580	A	G	NON_SYNONYMOUS_CODING	MTR	2
28	9483679	G	A	NON_SYNONYMOUS_CODING	MTR	2