

Supplementary Information dataset 2. Mammalian MH-I and MH-I like, and their characteristics.

a) Similarity scores between the orthologs of MR1 and different CD1 genes from different species.

	CD1b	CD1c	CD1d	CD1e	MR1
Human/bovine	75%	-	55%	62%	83%
Human/elephant	-	67%	62%	71%	88%
Human/marsupial		40%			70%

b) Similarity scores between MH-Ia sequences of human and mouse, and between human and mouse MR1.

	HLA-A	HLA-B	HLA-C	human MR1
mouse H2K	74%	72%	72%	
mouse MR1				86%

c) MH-I related genes in selected mammalian species.

	Human	Mouse	Cat	Dog	Rabbit	Armadillo	Sloth
MH class Ib "old" MHC							
zag/azgp ⁽¹⁾	1	1	1	1	1	1	1
FcRN	1	1	1	1	1	1	?
rae1	1	1	1	1+1	1+1	2	1+1
mr1	1	1	1	-	-	-	-
EPCR/PROCR	1	1	1	1	1	1	1
CD1a-e	5	CD1d (1 or 2)	6	10	8	1	1
HFE ₍₂₎	1	1	1	1 ₍₃₎	1	1	2
MHX	-	-	1	?{	1	1	1/2
MH class Ia and "recent" class Ib							
	HLA-A HLA-B HLA-C HLA-E HLA-F, HLA-G	H2-K H2-D H2-L Qa1 H2T10, H2M1, H2M2, H2M3, H2M101, H2M102, H2M103, H2M104, H2M105, H2M106, Q10, QA2/Q6	9	6	8	61(49)	2

(1) filtered dataset, all partial sequences removed

(2) note that several species like cow, elephant etc have both mr1 and MHX

(3) no MHX sequence was found in the current dog genome; however, this gene is present in most Caniformes as it is found in ferret, panda, black bear and weddelseal.

d) Distribution of sequence variability within MHX and MHI sequences in rabbit.

MH-I			MH-X		
Region of the sequence	% of similarity	Proportion ⁽¹⁾	Region of the sequence	% of similarity	Proportion ⁽¹⁾
α1-α2 domains	98-100	15.9	α1-α2 domains	98-100	94.63
	96-98	15.7		96-98	3.38
	94-96	22.6		94-96	1.10
	92-94	38.7		92-94	0.65
	90-92	7.2		90-92	0.24
rest of the protein	98-100	44.2	rest of the protein	98-100	92.19
	96-98	31.5		96-98	5.47
	94-96	10.6		94-96	1.39
	92-94	11.2		92-94	0.8
	90-92	2.6		90-92	0.15

⁽¹⁾ Sequences 90% similar or more to the reference were selected and the proportion falling into the 5 defined categories (90-92; 92-94; 94-96; 96-98; 98-100) reported.

e) Matrix of similarity scores between mammalian MH-X and MH-X like sequences

	rabbit	armadillo	cat	panda	microbat	elephant	cow	platypus
rabbit	100							
armadillo	87	100						
cat	81	80	100					
panda	82	83	84	100				
microbat	82	84	80	82	100			
elephant	81	81	80	80	81	100		
cow	71	74	67	74	71	69	100	
platypus	55	56	53	54	55	56	51	100