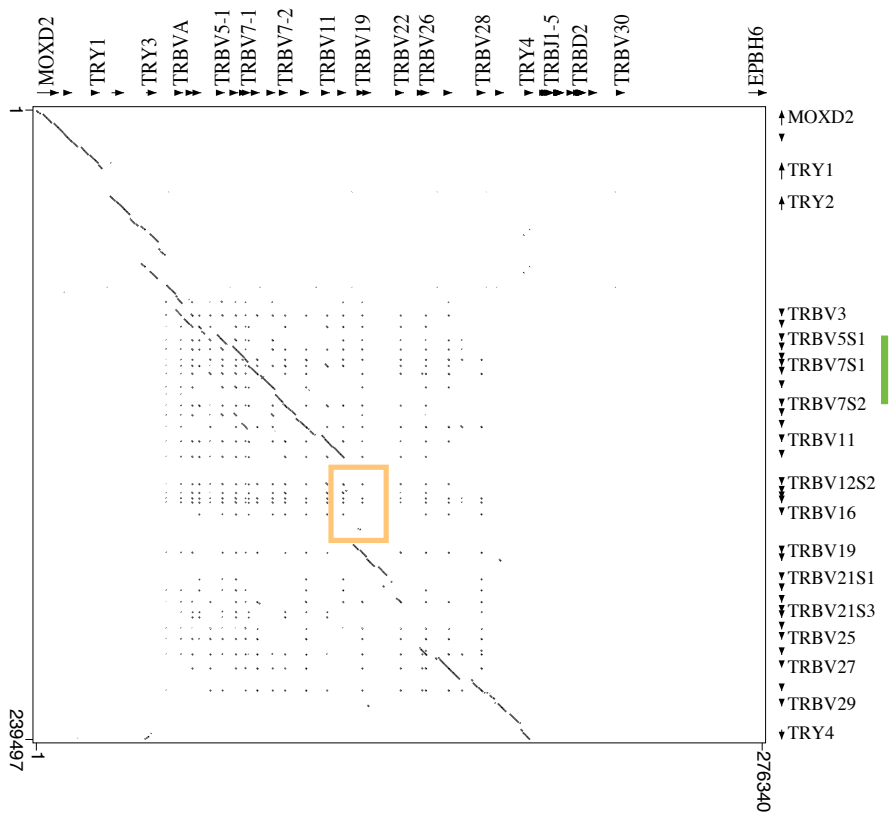
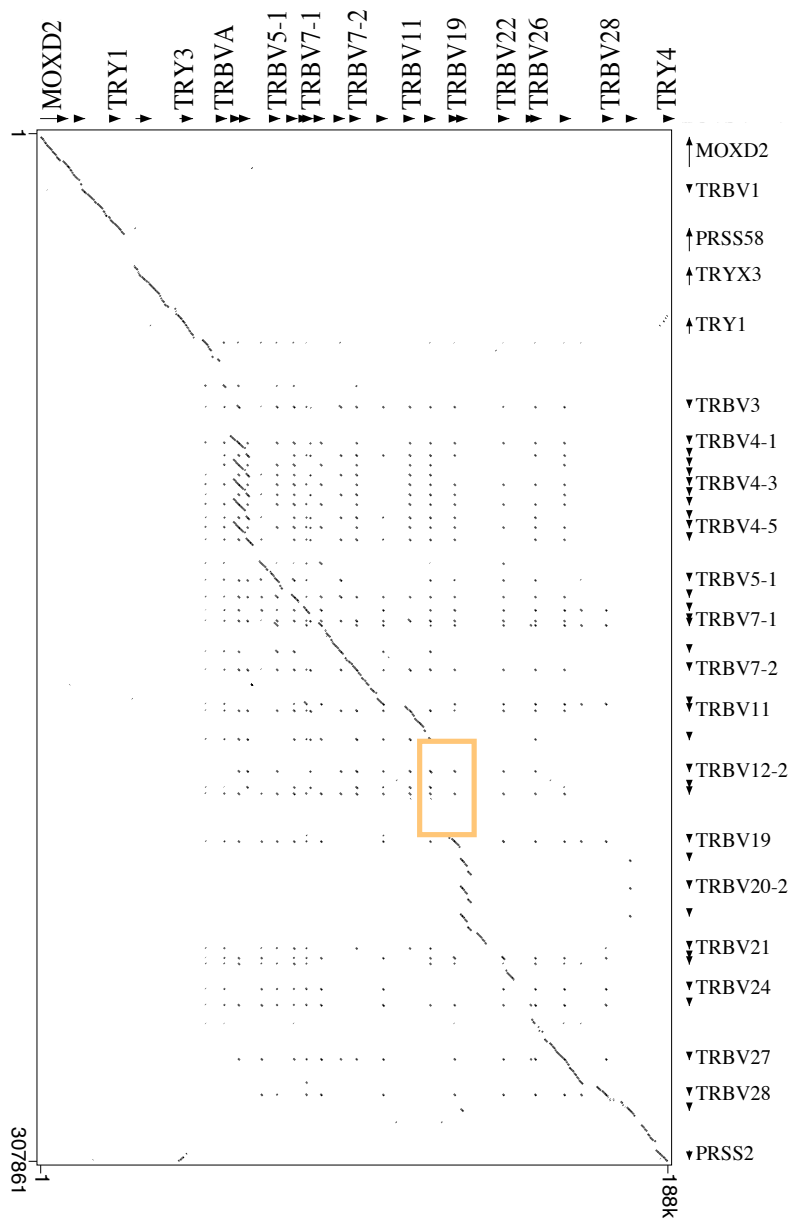
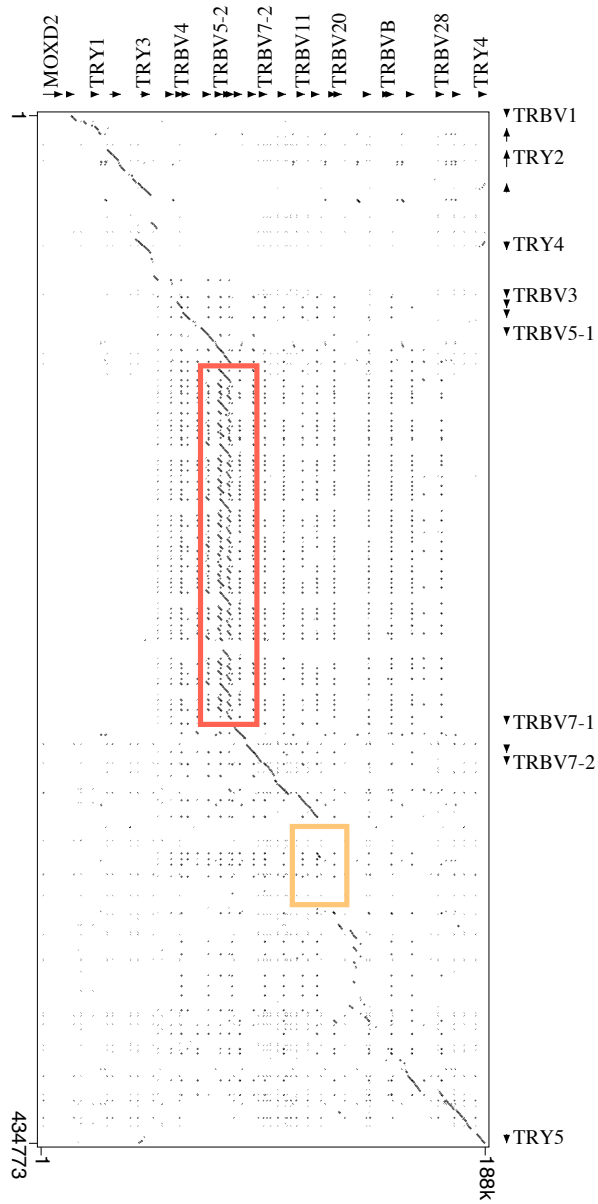
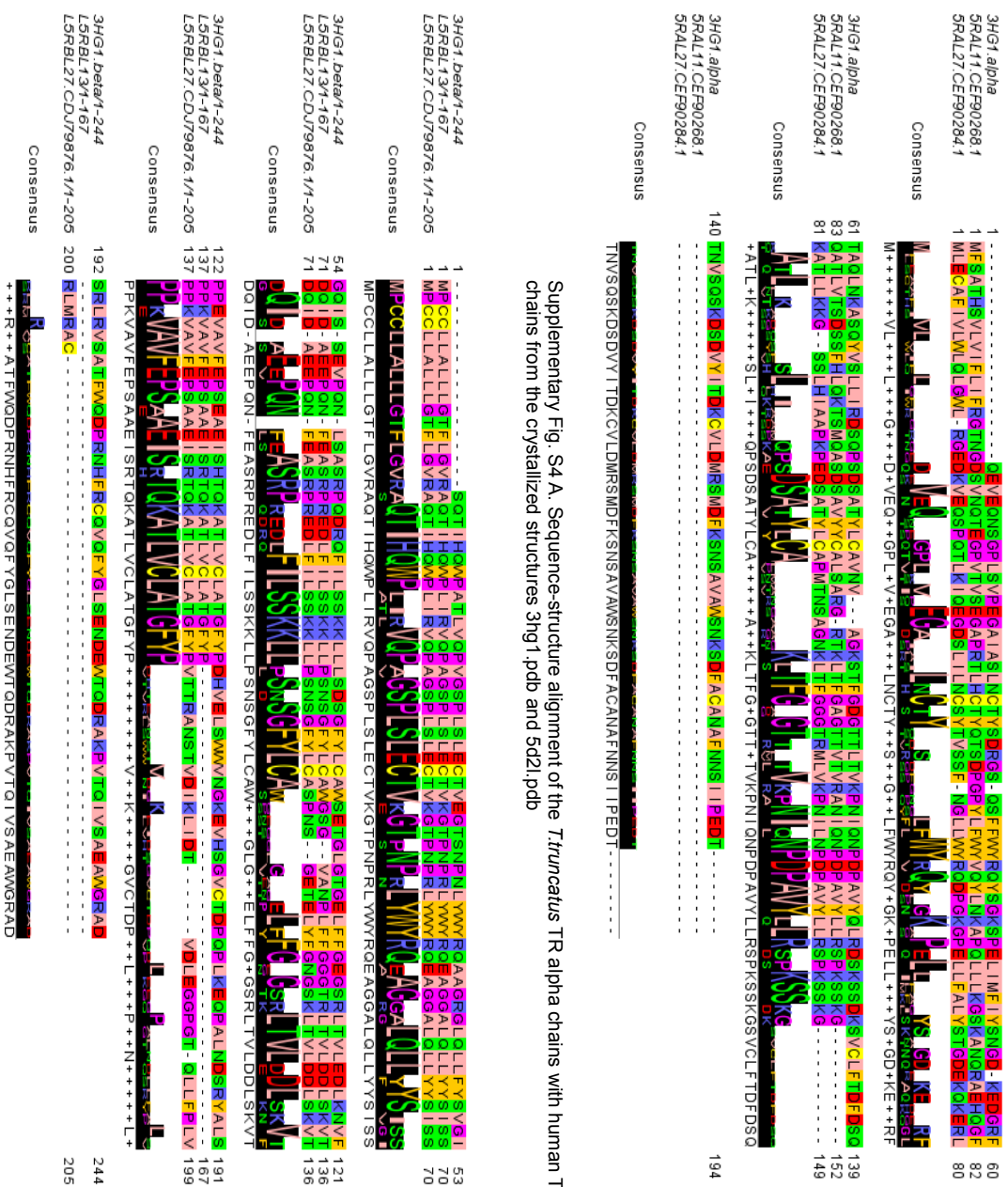










Supplementary Fig. S4 A. Sequence-structure alignment of the *Truncatus* TR alpha chains with human TR alpha chains from the crystallized structures 3hg1.pdb and 5d2l.pdb

Zoom: x20



Supplementary Table S1. Description of the TRB genes in the *Tursiops truncatus* genome assembly NC_047042.1 (NCBI Reference Sequence). The position of all genes and their classification and functionality are reported.

Gene classification	Functionality	Position ^a
TRBV1	F	93278021-93278653
TRBVA	P	93320055-93320358
TRBV4	F	93324321-93324776
TRBV2	P	93326918-93327347
TRBV5-1	P	93335335-93335774
TRBV5-2	P	93340222-93340693
TRBV6	P	93343983-93344322
TRBV7-1	P	93345165-93345463
TRBV8	ORF	93348343-93348814
TRBV5-3	P	93354230-93354715
TRBV7-2	P	93358991-93359460
TRBV10	F	93366739-93367174
TRBV11	P	93374729-93375179
TRBV12	F ^b	93380788-93381219
TRBV19	F	93387915-93388390
TRBV20	F	93389954-93390604
TRBV22	F	93401774-93402229
TRBV24	F	93407335-93407806
TRBV26	F	93413510-93413958
TRBV27	F	93422186-93422664
TRBV28	P	93434684-93434857
TRBV29	P	93440755-93441360
TRBD1	F	93457912-93457924
TRBJ1-1	F	93458569-93458616
TRBJ1-2	ORF	93458704-93458747
TRBJ1-3	F	93458981-93459030
TRBJ1-4	ORF	93459601-93459649
TRBJ1-5	P	93459873-93459894
TRBJ1-6	F	93460364-93460416
TRBJ3-1	F	93463121-93463170
TRBJ3-2	ORF	93463316-93463366
TRBJ3-3	F	93463536-93463584
TRBJ3-4	F	93463682-93463730
TRBJ3-5	F	93463804-93463849
TRBJ3-6	P	93463900-93463950
TRBJ3-7	F	93464105-93464151
TRBC3	F	93467445-93469165
TRBD2	F	93471630-93471644
TRBJ2-1	F	93472292-93472342
TRBJ2-2	F	93472489-93472536
TRBJ2-3	F	93472706-93472754
TRBJ2-4	F	93472849-93472897
TRBJ2-5	F	93472971-93473015
TRBJ2-6	F	93473066-93473118
TRBJ2-7	F	93473285-93473331
TRBC2	F	93475738-93477417
TRBV30	F	93487190-93487870

^a L-PART1/ V-exon for TRBV genes

^b STOP-CODON at position 108 (last 3' codon of germline CDR3-IMGT) may disappear during rearrangements

Supplementary Table S2. Description of the unrelated TRB genes in the *Tursiops truncatus* genome assembly NC_047042.1 (NCBI Reference Sequence). The position of all genes and their classification and functionality are reported.

Gene classification	Functionality	Position
MOXD2	F	93263345-93275829
TRY1	n.d.	93288754-93289117
TRY2	n.d.	93293406-93298172
TRY3	F	93306317-93310331
TRY4	n.d.	93448938 93452377
EPHB6	F	93534281-93541276

Supplementary Table S3. Description of the *Turtru* TRBV pseudogenes

TRBV genes	No INIT- CODON	Defectiv e Leader	Frameshift	Stop codon
TRBVA	•	•	•	
TRBV2	•	•	•	
TRBV5-1			•	•
TRBV5-2		•	•	
TRBV5-3				•
TRBV6			•	
TRBV7-1		•	•	
TRBV7-2			•	•
TRBV11			•	•
TRBV28				•
TRBV29	•	•	•	

Contact analysis

3hg1

Homo sapiens V-ALPHA [6.6.9] TRAV1.2*01 (98.9%) -TRAJ27*01 (100%),
Homo sapiens V-BETA [6.5.13] TRBV30*01 (100%)-(TRBD) - TRBJ2-2*01 (100%)
HLA-A*0201 (100%) G-ALPHA1 (1.90) – G-ALPHA2 (91-182)- C-LIKE (183-274)
Peptide MART-1 10-mer ELAIGILTV

V-ALPHA		Atom pairs contact types Total : 8									
[6.6.9]		G-ALPHA1									
CDR1-IMGT	37 Q	58E (1)	61D (1)	62G (17)	65R (48)	66K (14)					
CDR3-IMGT	109 A 114 G 115 K	58E (1)	61D (1)	62G (15) 62G (2)	65R (17) 65R (12) 65R (19)	66K (4) 66K (7)					

V-BETA		Atom pairs contact types Total : 100									
[6.5.13]		G-ALPHA1									
CDR1-IMGT	36 N				65R (18)	66K (6)	68K (9)	69A (13)	70H (2)	72Q (30)	73T (10)
CDR2-IMGT	55 Y 57 V 58 G 66 Q 70 E				65R (7)			69A (1) 69 A (3)		72Q (18) 72Q (6) 72Q (5),	75R (4)
CDR3-IMGT	109 T 110 G 111 L				65R (11)					72Q (1), 73T (4) 73T (5) 73T (1)	76V (3)

V-ALPHA		Atom pairs contact types Total : 109									
[6.6.9]		G-ALPHA2									
CDR1-IMGT	27 D 28 R 29 G 36 S 37 Q		62H (4)	65E (13)	66Q (29)		69A (8)	70Y (10)		73T (17)	76E (11) 77W (2)
CDR2-IMGT	57 Y 58 S 82 K						69A (7) 69A (1)	70Y (10)		73T (13)	

V-BETA		Atom pairs contact types Total : 24									
[6.5.13]		G-ALPHA2									
CDR3-IMGT	112 G 113 T				66Q (9) 66Q (15)						

G-ALPHA1 and G-ALPHA2 amino acids which have atom pair contacts with both V-ALPHA and V-BETA are underlined in the alignments.
They include, in the G-ALPHA1:
65R (contacts with V-ALPHA 109A, 114G and 115K) and V-BETA 55Y and 70E
66K (contacts with V-ALPHA 37Q, 109A and 114G) and V-BETA 111L
and in the G-ALPHA2:
66Q (contacts with V-ALPHA 57Y) and V-BETA 112G and 113T).