

# SUPPLEMENT

## The Shark HoxN cluster is homologous to the human HoxD cluster

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### Supplement: Summary of Footprint Cliques

The tables on the following pages summarize a **tracker** run with standard parameters (see Prohaska *et al.* (2003)) for the two horn shark sequences

HfM = AF479755 (same version as in Chiu *et al.* (2002)),

HfN = AF224263

and the four Human sequences

HsA = AC004080.2rc+AC010990[201-6508]rc+AC004079[75001-end]rc

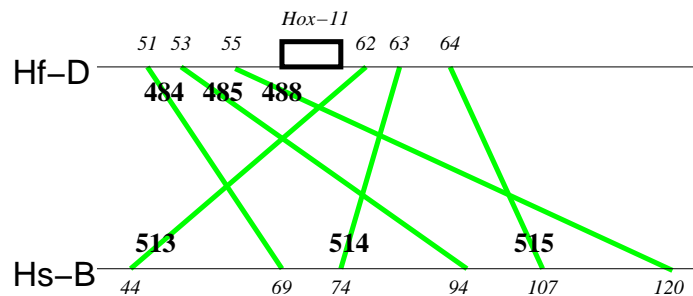
HsB = NT\_010783[931646-1263780]rc

HsC = NT\_009563[580371-708054]rc

HsD = NT\_037537[4075338-end].

Here “rc” means that the reverse complement of the sequence has been used (after extracting the indicated interval). The table contains only cliques between *evx* and *hox-1* that involve at least one horn shark and at least one mammalian cluster. Furthermore, we have deleted duplicate hits, and an obvious repeat sequence. Tracker run ID is 03291895RTNR.

PFCs in the sense of Chiu *et al.* (2002) are separated by horizontal lines in the first column. The six cliques 484, 485, 486, 513, 514, 515 (indicated by a ♣ sign in the tables) need special consideration since at most three of them are co-linear, Fig. 1. We therefore count them as only three co-linear cliques and use one half of their total length for the length counts. Cliques that are not co-linear are indicated by ×, or in case only one sequence does not fit by parentheses around positions and length. These hits are excluded from the statistics.



**Figure 1.** At most 3 of the 6 six cliques 484, 485, 486, 513, 514, 515 are co-linear in an alignment of HfN with the human B-cluster. Numbers in italics are sequence positions rounded to kilobases.

The rat sequences used for pairwise comparisons only are

RnA = NW\_043751[910030-1194462]rc

RnB = NW\_042671[264022-581839]

RnC = NW\_044048[722873-1060956]

RnD = NW\_042732[1061702-1217610]rc.

clique	HfM	HfN	HsA	HsB	HsC	HsD	Rem.		
		<i>Evx</i>					<i>Evx</i>		
409	10604	18				52430	18		
410	10774	50				54843	48		
399		28529	61			81540	65		
400		28606	219	13201	117	81627	233		
401		28877	45			81920	45		
402		28938	41	17061	32	81968	54		
403		30021	45	26139	44				
404		31214	31			84111	31		
405		32443	24			86638	24		
406		33810	25	31592	25				
420		35570	91	32683	95				
421		37299	32		10922	32			
422		39986	29			4699	29		
423		40718	53	49106	46				
419	13205	92	53810	88	29124	55			
		<i>Hox-13</i>							
435	19133	112	46175	110	59505	114	95454	41	
447	22619	38			75410	38			
448	25137	53			77494	45			
479	27606	116		68103	118				
480	28472	29			80253	29			
481	29021	59			108291	62	16981	24	
482		47001	34		109706	34			
483		47071	26			19111	26		
		<i>Hox-12</i>							
484 ♣		51300	65		69554	65			
485 ♣		52958	25		93646	25			
486		54377	29				102061	29	
487		54418	102				33734	44	
488 ♣		54600	38		119786	56	39712	57	
498	29793	156	57213	125	70665	152	40896	124	
		<i>Hox-11</i>				<i>Hox-11</i>			
499	34423	77		75337	78		(110012)(18)		
506		59212	24	75721	24				
500	35045	51		76070	51				
501	36773	30				44120	30		
507		60044	41				107996	41	
508		60098	29				108050	31	
512		60380	90				108316	93	
513 ♣		61576	21			43808	21		
502	37559	70			59654	70			
514 ♣		63171	41		74164	41			
503	38439	38			88767	38			
515 ♣		64170	48		106608	51			
504	38938	64			109939	54			
505	42363	43			118933	43			
516		66548	85				113145	92	
517		67157	24			52761	42	114312	47
521	43120	116	67205	164	81631	94	52861	88	
		<i>Hox-10</i>				<i>Hox-10</i>			
522	46400	43		85314	39				
523	46546	24		85435	24				
524	46591	187		85479	187				
525	47237	42			95973	42			

clique	HfM	HfN	HsA	HsB	HsC	HsD	Rem.
526	47542 116		86411 116	129676 98	59559 94		
527×	47542 116		86411 116	88870 38	59559 94		
528	48334 29		87354 32				
532	52969 35		90123 35				
533	53030 45		90216 44				
534	53084 92	70600 44	90268 55				
535	53229 28		90413 28				
536	53264 42		90453 41				
554		71847 32				117858 32	
555		73508 94			66771 98	119823 76	
557		74050 33		105970 33			
558		74180 82			67826 66	120357 82	
559		74264 18			67923 19		
560		74287 33			67953 33		
<i>Hox-9</i>							
561		77649 34			73302 34		
562		77704 15			73355 15		
563		77727 24			73378 23		
540	56968 94		94196 40	142567 96			
543	57229 218		94466 223		(87424) (20)		
545	57682 31		94837 31				
564		81010 88				126843 88	
<i>Hox-8</i>							
565		83302 34				129604 34	
566		83369 11				129668 11	
546×	60924 32					141941 32	
550	62154 12		99258 12				
551	62173 36		99280 37	151168 44			
552×	62173 36		97693 51	151118 89			
567	62226 108	84002 102	99328 107	151230 91			
<i>Hox-7</i>							
568	66443 217	86587 225	103205 211	157043 234	84545 129	134080 228	
571	66923 24		103654 24				
572	68467 25				93470 25		
573×	69747 46					141582 46	
581		87413 27			94200 27		
574	70583 56				95318 56		
576	71720 40		108022 41				
577	71778 148		108078 147				
<i>Hox-6</i>							
578	74400 27		111988 27				
579	74469 24		112053 24				
580	74519 53		112101 55				
582		92288 24				138365 24	
586	74582 205	92336 202	112161 205	168333 225	100718 76		
<i>Hox-5</i>							
587	76119 11		114171 11				
588	76145 22		114197 22				
589	76181 22		114231 22				
590	76215 38		114264 37				
591	76266 25		114314 26				
592	76323 69		114356 70				
593	76784 44		114894 44				
617×		94327 28		258054 28			
622×		94455 56		281067 55			

clique	HfM	HfN	HsA	HsB	HsC	HsD	Rem.	
623	77565 326	95108 271	115543 323	171828 182	105508 185	143847 254		
624×	77565 326	95108 271	115543 323	281218 46	105508 185	143847 254		
631	78818 52		116750 54					
632	80080 80				112115 67			
706		97493 38			112560 38			
707×		97877 35	138074 35					
634	81949 69		119373 81	176698 51				
635	82436 286		119799 284	177218 71				
636	82749 16		120098 15					
637	84825 232		121990 231	179577 194	117190 100	146730 95		
638	85596 41		122775 36					
639	85651 41		122822 41					
641	87711 148		125179 70	183768 143	121687 144	149205 140		
708×		98328 44		318453 44				
709		98613 23			125230 23			
	<i>Hox-4</i>		<i>Hox-4</i>					
642	91064 164	(93735) (45)	128822 129					
643	91515 117		129461 125			152691 80		
644	92853 145		131248 89	193035 130		154973 63		
645	93227 73		131592 77					
646	93311 42		131680 42					
647	93372 81		131766 83					
655×	96651 31		149670 26		125109 34			
656	98246 55		136897 58					
657	98424 35		137066 37					
658	98476 62		137119 58					
659	98868 148		137526 147			160616 38		
660	99108 105		137821 77	201920 88		160829 93		
662	101931 276		140542 277			162829 158		
663	102694 27		141968 27					
664	102995 192		142331 191	206719 145		163598 55		
665	105041 154		144063 157					
666	105199 33		144236 32					
667	106120 89		145095 94					
668	106233 67		145212 71					
669	106310 47		145293 47					
	<i>Hox-3</i>		<i>Hox-3</i>			<i>Hox-3</i>		
670	109890 95		148351 96					
671	109999 217		148482 218					
673	112899 112		151245 111					
674	113671 123		152783 127					
675	113939 243		153130 247					
	<i>Hox-2</i>		<i>Hox-2</i>					
676	116088 86		155551 83					
677	116229 30		155683 30					
678	116301 11		155747 11					
679	117158 46					185077 46		
680	117348 99		156872 100					
681	117460 78		156985 79					
687	119953 54		159818 54					
688	120009 44		159883 44					
689	120063 69		159973 72					
	<i>Hox-1</i>		<i>Hox-1</i>					

### References

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