



Figure S1 Measure of fry of Hd-rRII1 and Kaga. Photo is seven days fry of Hd-rRII1 (A) and Kaga (B). The scale bars represent 1 mm. Straight line was drawn along with notochord and it was considered as trunk length. The length was measured in imageJ software. (C) Boxplot of the trunk length. The mean \pm S.E.M. of the trunk length of are 3.22 ± 0.02 mm in Hd-rRII1 ($n = 16$), and 3.06 ± 0.04 mm in Kaga ($n = 11$), respectively. Hd-rRII1 is longer than Kaga in this stage. The trunk length showed significant difference as judged by Welch's t test ($p = 0.002$).

File S1

Input Data

Available for download at <http://www.g3journal.org/lookup/suppl/doi:10.1534/g3.112.003236/-/DC1>.

Table S1 Marker information

Marker	Chromosome	Position (cM)	Primer1	Primer2	Amplicon size (bp)	
					Hd-rRII1	Kaga
MID0111	1	0.0	TGCTAACATTTTCTTGCATCTAAAG	GCACCACCATAGCCAACCT	150	135
MID0127	1	14.8	AATGAAGACCAGAACATGTTTCTAAAT	TGTAGTTATTGCATTGCCTAATTTAAT	147	130
MID0124	1	23.2	TCAGTCCCAAATGGCTTAAAC	AATCTGCTTCTCATTCTTCAGTG	148	134
MID0122	1	35.3	CATAAGTAACTTTCATACACTCATGATTAA	TAGCGAGACGATTTTGGTCC	103	91
MID0117	1	49.5	GGCCCTTTGAGGACAGCC	AAAACATAAAGTGAATCTTTTAAAAAGTCC	157	131
MID0118	1	62.0	GAGTCTTGAGACTGATGGCAGC	CGCCCTGCTCCGGCCTCG	208	132
MID0119	1	77.5	GGTCTTTGTACACATTCTGTGAG	CAGAGGTAGACATGCCTTGATATG	143	121
MID0211	2	0.0	GCTGCTGCGTTCTGAACAA	AACTTTGTTGGAATCACTGTTCTCC	125	104
MID0221	2	20.6	CTGTCAATCCTTCAAATGCTG	ACCGGAAAGGACAAAGGTC	100	93
MID0229	2	30.7	CCAACAAAACACCACCGTC	CGTAATGGACATTTTAGAACTTCC	164	142
MID0215	2	39.8	AGTAGGCACACAAAATGTTCCGG	CGCCGGCGTTCAGGTGGG	120	111
MID0216	2	54.7	CTTGAGGGCCACAGTGTCTAC	CTGTCCAATCTGAACACAACATAAAAC	199	152
MID0231	2	68.0	TGTGGCTCCGCCTTCTCC	GAAAGAATGTTAAGTGAAAGTAACTTTTAG	160	137
MID0220	2	78.8	AGGCCACATAGAGGCCAAC	TCTGATGTCCCCTCATTCTCTG	150	155
MID0311	3	0.0	CATGACGTAGAAAAAGTGACGTG	TTTCTGGCTTCTTATGGATTCA	126	114
MID0321	3	11.8	TCCCTCACTGCACGGTGT	AAGAGATACTTTTGTAATTACAAATGAGG	103	89
MID0316	3	31.8	GTTTTTGGTCTTTGATTTTACATCAGT	ATCACCACAGGATGATGATGAA	103	91
MID0322	3	41.9	CATGACATAACTGACACAAACCAAAC	CCCCTTGGCTGTATTTCTCTG	205	181

MID0323	3	56.6	AAACTCCTTCGTGCCGTG	TTGTGTTCCCAGCATGAAAG	104	107
MID0318	3	69.3	CAGGAGAACAAAGACCAAGATCTG	TCCTCTGAAGACCTGAGACG	184	148
MID0421	4	0.0	TCATTCTTGTTGTAAAATGCTTG	AGCCGCTCCATACCCCCCTA	168	146
MID0412	4	12.7	CCACTGATTAATAACTACTTGTTCTGTAC	CAAAGCCATTTTTGGTATTTTTTTC	133	109
MID0414	4	23.6	TTGCTGCATAAACTACAATTTAATC	CAAAGTGTTTTGCAGACAGACA	143	128
MID0425	4	35.8	AGCTTTTTCAAGTTTTAACCTTAAATTATT	ACAGAGAAAACAAAGACCTCAAGTCTG	195	174
MID0424	4	46.2	ATATCAACTGTCATAAACATCAAAGG	GACATGTTAGTAGTTTAGAGATCACAAC	100	85
MID0428	4	53.4	AATGAAGATTCTGCCAAAAGAG	AATGAAAATATTTGTTTATATTATTCCTTG	100	88
MID0418	4	64.4	TGTTCTCAAACCTGCAGCAGG	GAGGAGTCCAGGTCTTACGTCG	165	135
MID0511	5	0.0	ATAAGAGAACTGGACTGAGTGAGAGTG	ATGATGACTCAGACCCACTGAGT	97, 104	85, 92
MM03D01K	5	15.1	AACAACAGTTTCACAACCTCTG	CCCATATTCCTTCTGACTGC	198	219
MID0515	5	30.5	CTGTCTTCAAAGTTAATAGTTTTGACAG	GTCATAAAACAGCTGAAAATGTCTC	151	132
MID0517	5	43.0	TACACCATGAAGTGGCATCATT	AAAACTATCCATCCATTCATTTTCTTAAC	161	131
MID0518K	5	52.8	TAATCTAAAAGCACCATCTCTCTTTTAC	ACAAACTGCTCAATGAGAAAAGTACC	203	180
MM05D05K	5	67.2	CTCCATTCAGGACCACATC	ACTGAGATGGAGGTAAGGAAC	206	182
MID0611	6	0.0	TTAACTCTCCCTACTTAACCGCTTA	CAGAGCCAAGTTTTGCGTG	172	149
MID0602	6	13.4	TGATGGACTGAAACTCAGATGAAG	CTGCCTAAGCTCTCATGGGG	155	142
MID0614	6	26.4	AGAACGTTCACTGTGGCTC	GCACTTGCACTTTGGAAAGG	197	159
MID0623	6	36.2	CTGGTGCTGCTGCTTCTT	CTGCAATCCTCTGCATGTC	200	174
MID0616	6	59.4	GCTTTATACTAGTCATTACACACCACA	CACACTTAGAAACGGCTTTAAAACA	270	258
MID0711	7	0.0	CCCCCAGATCAGCAGCAG	TACAATTATCGCCTTTGCACC	144	123

MID0722	7	14.3	TTTCTCCCTCACAACAACC	CTTTTTGGTGTCTTAACATATTGTTTTAG	142	127
MID0723	7	25.9	GTGTTTGATTGCTTGATTGTGT	AGTTCAAACCTTCGTAGAAAAATAAG	150	131
MID0712	7	31.9	TTCATCTTCCAACAATCATTGCT	CAGACCTTCACACTTCACAATGAC	105	94
MID0703	7	38.8	TGTAAGTGGGAAAATAATAAGCATATAGG	TTTAGAAAACACAGCTCTCTGAGAAAAG	199	179
MID0714	7	48.0	TGTATAGAAAAGAGCACAAAAGCACA	GTTGTTTGTGCCAAACATGAAG	140	122
MID0706	7	60.6	ACATTATATGGATTCCCTTAATGAATGTCTT	AAACTGACCAGTAGAATACTTCAGCTTATC	152	133
MID0811	8	0.0	CCGCCTAAGTCTGGGTCC	TGCAGAGTACGATTCAGCATATC	142	120
MID0812	8	17.2	TTATGCAAACATTTTCAGTAAATGC	GTTTCTGTGACTGCATTTCTGAAG	138	116
MID0821	8	26.0	AGGATCTGCAAAAGTGCAA	CGTGTTTTGAAATGACTTATCACA	195	159
MID0826	8	39.6	TGTA AAAACCTAAAGTTGTTACTCAATAA	AGATTA AATCTGCAATAGTTGGTA	139	120
MID0823	8	55.6	TAATCCGTAGATCGTCTGGTAATCTC	GCTTTGGTTCAGTTTGTTCATAAAG	142	130
MID0911	9	0.0	TCTGGACGCAGATTTTTGTCC	TTTCTTTACCTGTGATGACG	153	136
MID0923	9	9.1	ACACGTGAGCTAAAGCTCTGG	GACTTTGGGACTTGATTGTAACA	128	115
MID0921	9	18.8	CACGAGGCAGTCAGAGTCC	TACCAA ACTGTAAAACTGTTTCACG	105	90
MID0913	9	25.4	CCTGTGACATTTACCACATGTGTG	AAAAACATTTTCTTTAACA ACTTTTTTCTC	101	85
MID0914	9	33.9	GGACACTGTGATTGGCATAGTTTTG	GTTAAATCACAACCAAGTCCAATG	101	87
MID0916	9	46.5	AAAGTCGCAACAAGTTGG	AGTCAGATAAATCTGGACTTTATAACACG	100	84
MID0922	9	61.4	GTTAGGGCTCGCTGGTTTG	GGAGGCCATGGAGTGGTT	114	101
MID1011	10	0.0	CAGGCAGATGAAGACTCTGCAG	TAGGCAGTTGTTGATAAACTGGG	149	131
MID1025	10	10.5	CATAGGTGAGTATAATTTATAATCCTGAC	TCATGAAAATGGAACGTACCA	84	93
MID1024	10	20.6	CAGCCAAAAACAGAGGAGAG	GGCACCTAATTGGACATTGT	144	136

MID1014	10	39.1	TGTCCCCAACTGCTGAACATC	GGAATTCCTACTGAAGAATAAAATGAAAAAC	98	84
MID1028	10	48.6	TGGTGCTTGTGGAGCAAAG	CAACCGGGACAAGGAGTG	156	131
MID1015	10	64.3	CTGCTTGTCTGACAGCTGCG	GTTCTGCAGAACCGGG	154	145
MID1121	11	0.0	GATGAAACGTCTTTGGCACTC	AGCAGAGGTGAAAGGTGGATG	123	133
MID1125	11	6.0	GGCTCCCAGGTGGCAAC	TCTGCCCATGCAGAGACG	106	97
MID1123	11	24.1	ACTTTAGCCGATCCTCTAATAATTAC	ATCTTGTCAATTTATCTCCATAGC	101	92
MID1112	11	29.8	ACCTTCAGTTTGTACTTTTAAGCAGATTC	CTGGATTTGATCTTTTGTCTTAATTTTC	149	115
MID1113	11	39.3	TGTTTTTGTAAACAAAACGTACATT	AGCCTATGACCTTCACCCG	152	123
MID1116	11	51.6	CTCGCGTCTGAATTTTTGGG	CAGGACAAAGAAGATGTTACTGACTATG	139	123
MID1211	12	0.0	TGGAGGTAAAGAAAAACATTTCCC	GATCAGCTCATCTAAGTCATGCTAAG	150	118
MID1213	12	17.7	AGGTAAAATAAACTAACTCCTTACTATG	AGATGTCCCAGCATCCTTTG	147	125
MID1221	12	31.4	TGCTTAAAGACCCACTCCAATG	GACCCACAGCAATTTGAATG	106	96
MID1207	12	48.3	GGACACAAATCTGTAGTTTGGG	TTTGGCTTCCAGGGAAATAGATTAG	147	133
MID1218	12	60.2	AGATTGCTTCAACAGGATTGGT	AAATAAAATCACAACTGATGATTTATCAC	136	115
MID1311	13	0.0	TTTTTCAGAAGTTAAGAGTTTTGTTTCCAG	AGAACGATACGCATGAGTATCTGC	150	131
MID1324	13	10.4	CTGCATCTTTAGGGGAGCG	CCGCTTACAGATACTTCACAGTAC	110	95
MID1322	13	23.0	AACTAAATTTTACATTCTGAACAGAAAC	TTAGAAAAATAAATTGAATTCAATCCAT	146	134
MID1314	13	33.2	TTCCTGAATTATTGATCCTGACAA	GTCAAATGGCTAAACTAGACTGTCTG	103	90
MID1306	13	44.0	GCCTTTCTTCAAATCCACTGC	GGAAAACAAAATATTAACACAGAAGCAT	161	142
MID1317	13	51.9	GCATTCACCAACAACCTGTGCATG	TCTTCTCCTCAACTGAAGCCACTC	163	148
MID1308	13	57.6	GGCCCTTGAGACAGTAGCACTTG	AGGATGGACGCACAGAGACAGA	155	138

MID1423	14	0.0	G TTCCTACAAAGGTTGTCTTGGTG	CTTTGACTAAACTGATTA AAAAGGCAG	187	170
MID1414	14	17.4	GCTGCAGATTTCTGTTGAGAC	GGCCAAAAGTAGACTTTTATATTCTACTGG	123	110
MID1425	14	31.7	GACAGTGAGGCGTGACGA	TCCTTTAGGTTTTGGTGCCTC	107	97
MID1424	14	39.8	ACCAGAGTTCTGTGGCAAAG	AATTTGTTTCCAAACCAACTGATG	99	85
MID1416	14	58.2	CATCTTCATGATCAATCATTTGACC	CACTGCTGGAAGTTTGGATGAAG	202	157
MID1511	15	0.0	CCTGCAAAGCTTCTCACTCGC	ACGCAAAGGCTGCATCTC	112	100
MID1513	15	9.2	GCAGGATATCCTTTGAAGAGTTCTG	CTTCCTTTGGGTCCAACACC	154	138
MID1505	15	19.8	GTGTTTGTGAAACTCCTTTAAAGAGAAAAC	CCACATTAGTGGAGAACAGGATG	193	173
MID1516	15	32.8	CATCTGCACTTTATGAAACATGCT	ATGCAGGCGTCATGGTCA	149	136
MID1523	15	35.7	TGGTAAATCTGCAGAACTTTAATATG	AGGAAGCATCAAGGAAAATCTTAG	199	169
MID1522	15	45.8	GTTCTTTCTATGTTGTTTGTGCATG	GGCCAACATTTATGCTATAAAACAAC	167	150
MID1518	15	51.5	CAGGCCTGTCCACATGAC	GAAGATCAATCCATATTATTACCTG	151	133
MID1611	16	0.0	CCTTTCAGCATTGAACTTATGAAC	CGATAACGATAAATGTGCGATTTG	149	136
MID1626	16	21.5	TTTTTTTATCTTAAATGAGAAGAAAGC	CAAGGCAGCAACTGAACA	199	163
MID1603	16	33.0	AGTTTTGCTTTAGCTAAAACAAACAGG	ATGTTTTTGCTAATATTTTCTGGAGAGAG	201	186
MID1615	16	46.4	GTTTTATTTCTGGTGTGTACCCATAG	TGGAGTTACAATAACTGGAAAAATGAC	144	123
MID1616	16	68.6	TTTCAGGTAAACCGTCCATCTG	GCCGCCTTATACTTCTTATCAAAG	189	162
MID1721	17	0.0	TGTTCTTCAAAAAACAGAAAAAGTGG	GCAAAAAACCAACTAAAAACACC	149	134
MID1715	17	13.0	TTTTTACACTAGCATGGCAGTCTC	TCACAGAGATGTGTTGGAACCA	103	91
MID1717	17	28.4	ATCCAGATTTTGTATCAACAATAGAAAC	GCCCCGCACCAACAAAGTG	103	89
MID1718	17	42.8	AGAAGTCTGCATCTCTAGATTTGACTTT	GGACGTGCCAAAAACAG	152	139

MID1725	17	51.3	AGGACTCAGGCTTTAGAAACACC	TTGATAAATGCACTACCTTTCTTTATTG	102	91
MID1719	17	62.6	TTCAGCTGAGGAGCTCCG	CTCCCTTCAACAATCTGAGAGC	203	178
MID1830	18	0.0	CAACCTGAAACACACAACAGC	ATCAGATGACAACCTGACAGAG	150	135
MID1812	18	6.9	AAAAAAACAATAACAATGATCTCATTG	TTAAAGTTGACCCCTAATTTAGCTTTT	139	121
MID1814	18	19.2	GTTTGTGTTTCAGTCAAAGCATG	GGAAAAGGCCAGGGCTCT	151	134
MID1806	18	31.5	CCTAAGGGCTGACGGAGGAG	AAAAACAAGGAACTGCCCCG	156	136
MID1807	18	39.2	CTTTATCTCTTCCATAAGGTAAATCAGC	AAAACCTCTAAGAGCCCGTAAATCC	204	180
MID1808	18	53.8	CTGGATTCATGAGATCATTCCGTC	TGGGACAGCAAGTCAGAGATGG	154	135
MID1921	19	0.0	TGCGGCCACGGAGGAGG	AGCACACAGGCACACGCG	156	138
MID1924	19	11.6	CACCCGTAAGTCTCTCTG	GCAGGTTGACAAAGATCGTG	106	96
MID1923	19	24.3	GTTGAGCTGGCCTTATGCTC	TTAAAAAGCCTCACTTTCGAGTTC	168	146
MID1926	19	35.9	CAAAATTAATCAAGAATAAGTGGACC	CTTCTTTTAGGCTAAACTCTTTG	118	106
MID1917	19	54.1	TAAGTATCCCAACAACAGCTG	ACAAATTGAGTGCAGACTGAGTG	199	165
MID2011	20	0.0	CATGTCCCGTAGAGCTTGT	GTGTGGCAAACATGGACCA	105	92
MID2014	20	16.5	GCTAGTGAAGCATAAACCTGGTG	GTCAAATACGTATTTACATGTAGGCCT	104	94
MID2016	20	26.3	TGGAAAATCAACTCTTTGAAAAGAAG	TTAATTTTGCTAAAGGAATGAGGTTACA	126	111
G042S318	20	37.2	CATAAACTAGACACTTGC GTTGTG	CCTTACCGATGCCTTTGTGG	168	156
MID2017	20	66.0	TGCAACATCTTTCCAATTGG	TTTTCTAATCTGAATAACTGCAGTGG	149	135
MID2101	21	0.0	GCAGCAGTAGATCTCAGGTCCATC	TCTGCGTCTGATTGGCTGTAG	156	141
MID2122	21	4.0	TTCAGTCTAGTGGGTCTAGATG	TTTTTCTATAACCATGGCATATG	105	96
MID2112	21	18.7	CTGCAGAGACTCTAGAACCCTCA	TCTCTGCAGGCCTTGAACCT	155	125

MID2113	21	36.5	TTTTACCTAAATTTAGGGTTTTCTTTCC	CATTTACAACAAAACAGATGGAGC	152	132
MID2126	21	49.4	GAATGAAAAGGGATTTTACGTTC	TTCTTCTGGAAAACAGTGCCA	156	135
MID2124	21	59.6	GATGTCGTCCACTTGCTTG	TCTCCAGGTTATGTAATAACCA	106	93
MID2116	21	65.9	GTGTTAAATGAAACCTTGTAAGTT	TTTGCATCCGTACAATATGTGC	152	129
G021S407	21	70.7	AGTACCTGATCCACACAAGCAG	GGATGTGGAGTTGGATCAGCA	178	190
MID2221	22	0.0	ACTGCCCAATCGGGATG	AGGGAGAACAGATTTTCATTCATG	148	134
MID2211	22	16.6	TCATAAATACATTTCTGGATCAGGC	AGTAAAAAGGTCTAGCTGCTGTTACCT	196	152
MID2222	22	31.7	GATTAACCTAACTACCATTTTATTTACCG	ATGACAAAAACTTGCTTTTGCTAAG	128	116
MID2212	22	36.5	GGCTATGTGACTGGAACCTTCATTC	TATTGTGGAGCTTTTAATTATTACAACGTC	194	148
MID2213	22	54.6	TTTTTATGTTTTGTCCTGTTAAATTCAG	TGTGAAGTGGATTTTTGGAGAAC	150	135
MID2216	22	61.5	AGCTTTATGAAATTGGACTTGAAATG	TTCACAAACTAGCATGCTTTCAAT	150	133
MID2311	23	0.0	GGTTCACCTTAAAGCACCAATGTG	TTTGTGCATGGCTCATCT	206	170
MID2322	23	16.5	TGTCCTTGATGTTGGAAAACAT	TCCTCTGAAGCATATCTACTTCAATC	143	133
MID2312	23	23.7	CTTTTCTCTCACGTCTTTACAATGC	CATTTACTTCTATTAACGTTTTCTTTTTA	113	100
MID2313	23	34.2	GGCTCCTCTAATAGATGCTGAACC	ATATAGGGTAGTTGTATCGGCCATG	105	92
MM05G07K	23	50.6	ACATCACAAAAGTGAGAACAGC	CATCAGCACTTGAAAGCG	148	140
MID2321	23	56.3	AAACGGCAGCACAAATGTC	AATTGTTGTGGTTTTGGACTTTC	102	94
MID2305	23	64.1	CATCGAGAAATCCTCGGTAACA	TGGCCAGTGTACTAATTGTTTGC	203	239
MID2411	24	0.0	GTTTCGTCATCACCTATCAAAGGAG	AATGACATGGCAAGCAACCA	198	162
MID2428	24	10.8	TATTTTATTAACACATTTGATTTGGC	AGGGAGGTGGAGGAGGTG	141	122
MID2412	24	19.0	CAGTTCTATTTTCATTGCAGTCAAAG	AGAATTCAGACATCTAAGTAAATTTGTG	150	120

MID2414	24	30.9	TAAGGGCACCATACGACAGC	CCAAAATGTTGCTGTTTTAGCA	108	96
MID2421	24	38.8	AAAAATGTTTATTTGCATGTTGATTG	AGCTGTTGTTTCATATTA AAAACTCAAAGAC	154	136
MID2425	24	54.7	GTGGGAGCAAAGACTCATGG	AGGTGAGAGCAGTCCAGCC	106	95

Position indicates a map distance. The map function is Haldane. All amplicon size were decided by MultiNA.