

Supplemental Table 1

Deep sequencing read counts brain and gonadal tissues of 3-year-old Atlantic halibut.

Tissue type	Total number of reads	Adapter removed reads	Reads longer than 16 nts	miRNA reads
Ovary	5877347	5655013	4306116	160465
Testis	5821909	5241973	4061606	151021
Female brain	5035191	4283093	2416260	424132
Male brain	3850623	3403927	1972788	402902

Supplemental Table 2

Number of miRNA reads in 3-year-old Atlantic halibut gonads and brains.

miRNA name	Ovary	Testis	Female brain	Male brain
let-7a	1117	2289	16352	14292
let-7b	959	574	5132	4664
let-7c	336	530	3478	3317
let-7d	204	216	912	926
let-7e	198	520	2898	3709
let-7f	41	133	796	986
let-7g	108	220	1845	1989
let-7h	183	82	395	481
let-7i	308	142	2722	2369
let-7j	281	330	1742	1468
miR-1	224	557	373	371
miR-100	6270	3438	14015	14214
miR-101a	77	131	701	768
miR-101b	95	158	485	584
miR-103	1527	1839	23845	17100
miR-107	912	697	11850	9380
miR-107b	148	35	777	765
miR-10a	11	19	6	6
miR-10b	396	513	21	21
miR-10c	134	198	108	56
miR-10d	112	199	58	32
miR-122	8	2	3	5
miR-124	52	29	40496	48538
miR-125a	2098	1377	10950	10719
miR-125b	5852	4955	36849	38129
miR-125c	2299	1386	10229	11670
miR-126	1388	2893	8750	5299
miR-126-3p	3017	4841	16473	10892
miR-126b	719	545	3616	2437
miR-126b-3p	952	945	4679	3134
miR-128	239	95	4505	7174
miR-129	0	0	738	796
miR-129-3p	5	17	8296	10134
miR-130a	309	210	680	282
miR-130b	470	473	1247	959
miR-130c	3020	4146	8874	7158
miR-132	5	6	813	1240
miR-132-3p	7	6	955	1382

miR-133a	118	141	116	98
miR-133a-3p	171	331	197	174
miR-133b	82	73	73	49
miR-133b-3p	82	74	74	50
miR-135a	108	89	1263	1256
miR-135b	9	5	493	541
miR-135c	350	466	1293	1527
miR-137	1	0	231	500
miR-138	343	157	10986	13673
miR-1388	27	43	37	58
miR-1388-3p	27	49	47	63
miR-139	66	58	373	541
miR-140	88	60	62	31
miR-140-3p	425	476	543	260
miR-141	13	29	11	5
miR-142a-3p	28	59	98	88
miR-142a-5p	26	24	22	23
miR-142b-5p	6	2	4	4
miR-143	13892	6086	894	583
miR-144	8	11	74	16
miR-145	38266	47809	8048	4569
miR-146a	133	438	227	221
miR-146b	3	18	8	7
miR-148	452	290	438	517
miR-150	0	0	13	6
miR-152	214	141	201	315
miR-153a	14	13	647	755
miR-153b	1	2	420	591
miR-153c	1	6	225	297
miR-15a	634	211	1725	1503
miR-15a-3p	634	212	1725	1503
miR-15b	382	459	598	523
miR-16a	386	316	1741	1467
miR-16b	431	592	5171	4443
miR-16c	0	2	31	17
miR-17a	4527	3225	3431	3422
miR-17a-3p	4531	3225	3431	3423
miR-181a	1067	631	2713	3172
miR-181a-3p	1502	917	4086	4468
miR-181b	289	326	605	827
miR-181c	8	11	31	53
miR-182	9	3	45	81
miR-182-3p	9	3	51	97
miR-183	2	1	46	86
miR-184	3	1	2	5
miR-187	57	38	1613	1498

miR-189	2	9	3	5
miR-18a	117	185	239	305
miR-18b	3	4	6	4
miR-18b-3p	3	4	8	4
miR-18c	1	1	2	7
miR-190	44	44	56	97
miR-192	49	3	50	9
miR-193a	109	74	56	93
miR-196a	17	26	0	0
miR-199	9958	7197	1180	717
miR-199-3p	13019	9156	1497	954
miR-19a	493	846	1495	1067
miR-19a-3p	502	852	1497	1068
miR-19b	4893	7702	11115	6567
miR-19b-3p	4895	7702	11122	6570
miR-19c	882	1754	3421	2112
miR-19d	1178	1891	2488	1344
miR-200a	40	101	21	6
miR-200b	5	18	6	2
miR-200c	5	13	2	0
miR-202	19	39	0	0
miR-202-3p	8622	3648	2	11
miR-203a	27	34	38	15
miR-203b-3p	7	4	4	4
miR-204	167	98	867	1149
miR-205	48	40	38	29
miR-206	9	6	17	2
miR-20a	892	821	776	1205
miR-20a-3p	898	827	785	1212
miR-20b	225	303	237	185
miR-21	4117	2453	4889	4819
miR-210	1447	1298	2716	2271
miR-210-3p	1943	2235	4567	3811
miR-212	3	0	213	322
miR-214	1287	1112	129	49
miR-216a	1	0	72	71
miR-216b	14	1	324	254
miR-217	4	5	356	334
miR-2184	388	249	83	61
miR-2187-3p	1	4	3	5
miR-2188	386	199	6560	1588
miR-2188-3p	386	200	6574	1589
miR-218a	213	357	2441	1903
miR-218b	62	93	1319	696
miR-219	0	2	132	336
miR-221	209	77	944	1504

miR-222	273	107	894	1419
miR-223	327	340	956	1088
miR-22a	2914	2445	6149	5380
miR-22b	64	40	198	141
miR-23a	682	769	513	531
miR-23b	627	1156	1943	2098
miR-24	2480	5661	10400	7748
miR-25	792	413	349	272
miR-26a	2485	3165	6724	8042
miR-26b	1019	1872	3679	4448
miR-27a	222	73	93	119
miR-27b	411	117	302	453
miR-27c	257	120	71	73
miR-27d	79	32	139	189
miR-27e	98	60	125	178
miR-29a	2290	604	7990	8521
miR-29b	91	171	2522	2787
miR-301a	47	139	516	558
miR-301b	27	94	298	483
miR-301c	104	252	1235	1366
miR-30b	492	332	936	1077
miR-30c	586	328	1430	1431
miR-30d	112	228	530	548
miR-30e	252	481	1245	1335
miR-30e-3p	437	617	1696	1814
miR-31	8	5	2	1
miR-338	822	559	8933	8165
miR-34	1831	500	6127	4833
miR-34b	0	0	67	63
miR-365	29	24	46	113
miR-375	2	4	26	2
miR-430c	6	22	0	18
miR-451	115	238	7391	1564
miR-454b	1	1	8	14
miR-455	41	45	20	30
miR-455b	13	16	6	12
miR-456	66	22	387	418
miR-458	42	14	310	410
miR-460-3p	1	1	35	38
miR-460-5p	15	15	254	304
miR-462	189	108	86	105
miR-489	1	12	173	186
miR-722	0	0	1	8
miR-724	2	2	153	343
miR-727	2	3	44	70
miR-727-3p	13	14	141	206

miR-728	1	4	23	50
miR-730	331	476	1751	1598
miR-731	117	79	39	30
miR-733	358	93	17	3
miR-737	2	1	9	8
miR-7a	108	75	547	1428
miR-9	23	26	16773	18846
miR-92a	1489	620	776	864
miR-92b	3	2	4	1
miR-93	267	312	168	257
miR-9-3p	6034	2876	29338	31707
miR-99	4249	1914	9300	8279

Supplemental Table 3

Tissue- and sex-biased miRNAs in Atlantic halibut.

Brain-biased	Gonad-biased specific	Female brain-biased	Male brain-biased	Ovary-biased	Testis- biased
miR-124	miR-10b	let-7f	let-7i	miR-25	miR-146a
miR-129-3p	miR-10d	let-7g	miR-107b	miR-27a	miR-133a-3p
miR-129	miR-199-3p	miR-218b	miR-135a	miR-27c	
miR-132	miR-202-3p	miR-451	miR-221	miR-462	
miR-135b	miR-214		miR-222	miR-146a	
miR-153a	miR-2184		miR-456		
miR-153b	miR-733		miR-458		
miR-187			miR-7a		
miR-9					
miR-9-3p					
miR-137					

Supplemental Table 4

Tissue expression of miRNAs in various vertebrates. Comparison was performed by blasting Atlantic halibut miRNA sequences to miRBase 18 (www.mirbase.org) and searching published results.

	Halibut tissue	Method	Species and expression localization	Reference
miR-9*	Brain	Cloning, deep sequencing	Mouse (brain)	[1, 2]
miR-129	Brain	Cloning, deep sequencing, northern blot, microarray	Mouse (brain, pancreatic cells, gonads) Rat (brain, testis, kidney)	[1-6] [7]
miR-137	Brain	Cloning, deep sequencing	Mouse (brain, testis, pancreatic cells) Rat (brain, testis) Platypus (brain, testis) Lamprey (brain, mouth, heart)	[1-3] [7] [8] [9]
mir-153b	Brain	Deep sequencing	Mouse (brain)	[2]
miR-212	Brain	Deep sequencing	Mouse (brain, ovary) Lamprey (brain)	[2, 10] [9]
mir-219	Brain	Deep sequencing	Mouse (brain, gonads) Platypus (brain, testis) Chicken (brain, testis) Lamprey (brain)	[2, 7, 10] [8] [8] [9]
miR-202	Gonads	Deep sequencing, Cloning	Chicken (gonads) Mouse (gonads) Rodents and Human (gonads)	[11] [2, 10] [5]
miR-202*	Gonads	Deep sequencing	Mouse (gonads)	[2]

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