

Supplementary Tables

Supplementary Table S1: miRNAs differential expression analysis: ASD cases *vs.* Controls

N#	ID	Log2 Fold change	Fold Change	p-value	Symbol
1	hsa-miR-302b-3p	12.49	5749.85	1.39E-08	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
2	hsa-miR-302a-3p	10.27	1233.68	5.32E-06	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
3	hsa-miR-302d-3p	9.67	814.94	1.21E-05	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
4	hsa-miR-144-5p	2.35	5.08	4.94E-06	miR-144-5p (miRNAs w/seed GAUAUCA)
5	hsa-miR-106a-5p	2.18	4.55	2.68E-03	miR-17-5p (and other miRNAs w/seed AAAGUGC)
6	hsa-miR-144-3p	2.18	4.53	5.97E-07	miR-144-3p (miRNAs w/seed ACAGUAU)
7	hsa-miR-122-5p	1.95	3.86	8.00E-05	miR-122-5p (miRNAs w/seed GGAGUGU)
8	hsa-miR-4306	1.82	3.53	3.05E-03	miR-185-5p (and other miRNAs w/seed GGAGAGA)
9	hsa-miR-885-3p	1.80	3.48	8.12E-03	miR-885-3p (miRNAs w/seed GGCAGCG)
10	hsa-miR-182-5p	1.80	3.47	4.48E-05	miR-182-5p (and other miRNAs w/seed UUGGCAA)
11	hsa-miR-183-5p	1.74	3.35	1.86E-05	miR-183-5p (miRNAs w/seed AUGGCAC)
12	hsa-miR-874-3p	1.56	2.94	2.26E-03	miR-874-3p (miRNAs w/seed UGCCUG)
13	hsa-miR-141-3p	1.54	2.90	1.39E-04	miR-141-3p (and other miRNAs w/seed AACACUG)
14	hsa-miR-1180-3p	1.52	2.87	5.19E-04	miR-1180-3p (miRNAs w/seed UUCCGGC)
15	hsa-miR-29c-3p	1.49	2.80	1.55E-05	miR-29b-3p (and other miRNAs w/seed AGCACCA)
16	hsa-miR-96-5p	1.47	2.78	1.18E-03	miR-96-5p (and other miRNAs w/seed UUGGCAC)
17	hsa-miR-1294	1.45	2.73	1.91E-03	miR-1294 (and other miRNAs w/seed GUGAGGU)
18	hsa-miR-3613-5p	1.42	2.67	1.12E-04	miR-3613-5p (miRNAs w/seed GUUGUAC)
19	hsa-miR-101-3p	1.39	2.62	3.15E-04	miR-101-3p (and other miRNAs w/seed ACAGUAC)
20	hsa-miR-4732-5p	1.37	2.59	1.08E-02	miR-4732-5p (miRNAs w/seed GUAGAGC)
21	hsa-miR-193b-5p	1.34	2.52	1.12E-02	miR-193b-5p (miRNAs w/seed GGGGUUU)
22	hsa-miR-196a-5p	1.30	2.46	1.54E-02	miR-196a-5p (and other miRNAs w/seed AGGUAGU)
23	hsa-miR-106b-5p	1.28	2.43	1.63E-03	miR-17-5p (and other miRNAs w/seed AAAGUGC)
24	hsa-miR-4742-3p	1.28	2.42	1.53E-02	miR-4742-3p (miRNAs w/seed CUGUAUU)
25	hsa-miR-29b-3p	1.26	2.40	3.51E-04	miR-29b-3p (and other miRNAs w/seed AGCACCA)
26	hsa-miR-199b-5p	1.22	2.33	3.58E-02	miR-199a-5p (and other miRNAs w/seed CCAGUGU)
27	hsa-miR-636	1.19	2.29	2.49E-02	miR-636 (miRNAs w/seed GUGCUUG)
28	hsa-miR-194-5p	1.18	2.27	2.81E-03	miR-194-5p (miRNAs w/seed GUAACAG)
29	hsa-miR-542-3p	1.16	2.23	3.27E-02	miR-542-3p (miRNAs w/seed GUGACAG)
30	hsa-miR-660-5p	1.14	2.20	6.28E-04	miR-660-5p (and other miRNAs w/seed ACCCAUU)
31	hsa-miR-1255b-5p	1.11	2.15	1.76E-02	miR-1255b-5p (and other miRNAs w/seed GGAUGAG)
32	hsa-miR-150-3p	1.10	2.15	1.21E-02	miR-150-3p (miRNAs w/seed UGGUACA)
33	hsa-miR-7-5p	1.10	2.14	8.21E-04	miR-7a-5p (and other miRNAs w/seed GGAAGAC)
34	hsa-miR-20b-5p	1.10	2.14	9.78E-03	miR-17-5p (and other miRNAs w/seed AAAGUGC)
35	hsa-miR-19a-3p	1.07	2.09	2.14E-03	miR-19b-3p (and other miRNAs w/seed GUGCAAA)
36	hsa-miR-148b-5p	1.06	2.09	1.20E-02	miR-148b-5p (and other miRNAs w/seed AGUUCUG)
37	hsa-miR-15a-5p	1.06	2.09	8.83E-04	miR-16-5p (and other miRNAs w/seed AGCAGCA)
38	hsa-miR-192-5p	1.06	2.08	7.40E-03	miR-192-5p (and other miRNAs w/seed UGACCUA)
39	hsa-miR-375-3p	1.05	2.07	2.79E-02	miR-375-3p (miRNAs w/seed UUGUUCG)
40	hsa-let-7b-5p	1.05	2.07	5.05E-03	let-7a-5p (and other miRNAs w/seed GAGGUAG)
41	hsa-miR-28-3p	-1.03	-2.04	1.19E-02	miR-28-3p (and other miRNAs w/seed ACUAGAU)
42	hsa-miR-3928-3p	-1.03	-2.05	4.65E-02	miR-3928-3p (miRNAs w/seed GAGGAAC)
43	hsa-miR-328-3p	-1.06	-2.08	1.88E-02	miR-328-3p (and other miRNAs w/seed UGGCCCU)
44	hsa-miR-5189-5p	-1.06	-2.09	3.92E-02	miR-1285-3p (and other miRNAs w/seed CUGGGCA)
45	hsa-miR-2355-3p	-1.08	-2.11	2.64E-02	miR-2355-3p (miRNAs w/seed UUGUCCU)
46	hsa-miR-335-5p	-1.09	-2.13	7.65E-03	miR-335-5p (and other miRNAs w/seed CAAGAGC)
47	hsa-miR-1301-3p	-1.11	-2.16	1.56E-02	miR-1301-3p (and other miRNAs w/seed UGCAGCU)

48	hsa-miR-485-3p	-1.14	-2.20	2.09E-02	miR-485-3p (and other miRNAs w/seed UCAUACA)
49	hsa-miR-1908-5p	-1.20	-2.30	1.59E-02	miR-10396b-5p (and other miRNAs w/seed GGCGGGG)
50	hsa-miR-224-5p	-1.22	-2.32	5.09E-03	miR-125b-2-3p (and other miRNAs w/seed CAAGUCA)
51	hsa-miR-4446-3p	-1.27	-2.42	3.78E-02	miR-4446-3p (miRNAs w/seed AGGGCUG)
52	hsa-miR-485-5p	-1.31	-2.48	2.44E-02	miR-485-5p (and other miRNAs w/seed GAGGCUG)
53	hsa-miR-584-5p	-1.35	-2.54	1.48E-03	miR-584-5p (and other miRNAs w/seed UAUGGUU)
54	hsa-miR-99a-5p	-1.37	-2.58	2.35E-02	miR-100-5p (and other miRNAs w/seed ACCCGUA)
55	hsa-miR-4433b-5p	-1.39	-2.62	4.60E-03	miR-4433b-5p (miRNAs w/seed UGUCCCA)
56	hsa-miR-127-3p	-1.39	-2.63	8.64E-03	miR-127-3p (miRNAs w/seed CGGAUCC)
57	hsa-miR-12136	-1.43	-2.69	1.80E-02	miR-12136 (miRNAs w/seed AAAAAGU)
58	hsa-miR-6852-5p	-1.45	-2.73	2.65E-02	miR-6852-5p (and other miRNAs w/seed CCUGGGG)
59	hsa-miR-744-5p	-1.48	-2.78	5.27E-03	miR-744-5p (and other miRNAs w/seed GCGGGGC)
60	hsa-miR-134-5p	-1.48	-2.80	9.93E-03	miR-3118 (and other miRNAs w/seed GUGACUG)
61	hsa-miR-23a-5p	-1.67	-3.18	1.06E-02	miR-23a-5p (and other miRNAs w/seed GGGUUCC)
62	hsa-miR-221-3p	-1.67	-3.19	7.85E-04	miR-221-3p (and other miRNAs w/seed GCUACAU)
63	hsa-miR-4433b-3p	-1.72	-3.28	2.22E-02	miR-4433b-3p (miRNAs w/seed AGGAGUG)

Supplementary Table S2: Other ncRNAs differential expression analysis: ASD cases *vs.* Controls

N#	Name	Chromosome	Region	Max group mean	Log ₂ fold change	Fold change	P-value
1	MT-ND1	MT	3307..4262	174	-1.53	-2.88	4.67E-02
2	MT-RNR1	MT	648..1601	3749	-1.62	-3.08	2.13E-02
3	MT-ND5	MT	12337..14148	113	-1.65	-3.13	4.66E-02
4	MT-ND3	MT	10059..10404	132	-1.74	-3.34	4.90E-02
5	MT-TW	MT	5512..5579	981	-1.74	-3.35	4.22E-02
6	MT-TE	MT	c(14674..14742)	187331	-1.79	-3.45	4.05E-02
7	MT-RNR2	MT	1671..3229	16216	-1.81	-3.51	3.67E-02
8	MT-TS2	MT	12207..12265	149289	-1.82	-3.54	4.97E-02
9	MT-TS1	MT	c(7446..7514)	19111	-1.83	-3.54	3.17E-02
10	MT-TG	MT	9991..10058	8975	-1.85	-3.61	3.36E-02
11	MT-TT	MT	15888..15953	37231	-1.90	-3.72	3.26E-02
12	MT-TV	MT	1602..1670	265677	-1.92	-3.77	3.14E-02
13	MT-TH	MT	12138..12206	863077	-1.93	-3.80	4.03E-02
14	MT-CO3	MT	9207..9990	906	-2.05	-4.13	1.95E-02
15	MT-TK	MT	8295..8364	15625	-2.09	-4.26	1.48E-02
16	MT-TI	MT	4263..4331	18263	-2.14	-4.42	1.84E-02
17	MT-TP	MT	c(15956..16023)	16194	-2.17	-4.49	5.29E-03
18	MT-TQ	MT	c(4329..4400)	55467	-2.18	-4.52	9.23E-03
19	MT-TY	MT	c(5826..5891)	57752	-2.25	-4.76	3.32E-03
20	MT-TN	MT	c(5657..5729)	15641	-2.25	-4.76	1.07E-02
21	MT-TL2	MT	12266..12336	28417	-2.28	-4.85	7.57E-03
22	MT-TL1	MT	3230..3304	9813	-2.31	-4.96	3.19E-03
23	MT-TD	MT	7518..7585	53034	-2.44	-5.41	2.64E-03
24	MT-TC	MT	c(5761..5826)	15881	-2.45	-5.47	2.12E-03
25	MT-TR	MT	10405..10469	14563	-2.46	-5.49	2.37E-03
26	AC104248.1	8	c(108871128..109063417)	1093	7.62	196.82	1.59E-12
27	LY75-CD302	2	c(159771851..159904710)	103	6.66	101.26	2.67E-08
28	AC020661.4	15	c(41016990..41018843)	92	5.75	53.78	1.46E-05
29	AC099681.3	7	55592074..55593193	80	4.50	22.66	3.63E-04
30	AC087235.1	12	c(23181334..23251499)	52	3.82	14.11	1.06E-05
31	AL357052.1	6	c(19290319..19321021)	614	3.37	10.33	1.84E-07
32	AC040170.1	16	c(86275429..86275523)	195	2.99	7.97	3.76E-02

33	AC090227.1	18	49814361..49814443	117	2.91	7.52	3.80E-02
34	AP001591.1	11	63495484..63500610	50	2.88	7.37	3.39E-02
35	AC013267.2	2	c(25008845..25008946)	675	2.81	7.04	7.96E-03
36	LINC02739	11	c(59560298..59566283)	903	2.11	4.32	2.78E-03
37	AC079449.1	2	c(121603073..121603164)	195	-1.36	-2.56	4.79E-02
38	AC209007.2	1	c(31503631..31503744)	67	-1.46	-2.74	4.87E-02
39	AC026634.1	18	23456371..23456467	57	-1.56	-2.94	2.12E-02
40	AP003392.15	11	119018944..119019012	405	-1.57	-2.98	3.23E-02
41	AC012572.1	18	c(78544095..78544188)	190	-1.58	-2.99	4.11E-03
42	AC104066.1	4	52786537..52786638	59	-1.58	-3.00	3.66E-02
43	AL137009.1	6	119057880..119057974	15563	-1.60	-3.02	4.35E-02
44	AC000114.1	X	112661657..112661768	79	-1.60	-3.04	4.57E-03
45	AL512288.1	1	c(27938875..27960193)	263	-1.64	-3.11	4.47E-02
46	AL139406.1	10	c(88585638..88585733)	498	-1.65	-3.15	1.22E-02
47	AC217773.1	17	c(46215070..46215171)	75	-1.70	-3.25	8.88E-03
48	AC020987.1	8	c(70780914..70781008)	110	-1.72	-3.28	9.63E-03
49	AC005037.2	2	c(200863152..200863247)	337	-1.76	-3.39	4.45E-02
50	NR2F2-AS1	15	c(96110040..96327361)	1058	-1.79	-3.47	2.45E-02
51	AP004609.2	11	118970498..118970595	128	-1.82	-3.52	1.47E-02
52	AL627171.4	14	c(49861176..49864326)	80	-1.82	-3.53	1.48E-02
53	LINC01962	5	c(181178821..181191852)	424	-1.91	-3.76	9.90E-03
54	AL080243.1	22	c(41065554..41065646)	61	-1.96	-3.90	3.80E-04
55	AL390766.1	10	c(34201979..34202074)	6285	-1.98	-3.94	2.15E-02
56	AC060812.2	11	c(3663815..3663911)	14092	-2.15	-4.44	9.12E-04
57	AC107939.1	11	c(33004250..33004345)	2873	-2.34	-5.07	7.20E-04
58	AC130462.1	16	c(68089449..68089543)	70	-2.43	-5.38	9.93E-05
59	AL359839.1	1	c(44153385..44153480)	426	-2.51	-5.70	1.33E-05
60	AC011603.1	12	c(49132853..49132947)	371	-2.54	-5.80	1.09E-04
61	LINC01714	1	8201518..8215210	151	-2.61	-6.10	2.64E-03
62	AL357075.2	6	154477982..154479593	70	-3.16	-8.97	1.05E-02
63	AC096551.1	7	c(115833273..115833373)	69	-3.17	-8.99	2.24E-06
64	AC023356.1	15	c(43863893..43864005)	208	-4.64	-24.94	2.67E-09
65	AC026353.1	3	c(167866500..167950292)	80	-5.52	-45.79	1.03E-09
66	AC010443.1	5	c(144087..144197)	441	-5.76	-54.15	4.14E-12

c: complement

Supplementary Table S3: miRNAs differential expression analysis: severe symptoms *vs.* mild symptoms cases

N#	ID	Log ₂ Fold change	Fold Change	p-value	Symbol
1	hsa-miR-302a-5p	8.70	416.11	2.36E-14	miR-302a-5p (miRNAs w/seed CUUAAAC)
2	hsa-miR-302c-3p	7.51	182.42	4.60E-14	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
3	hsa-miR-302a-3p	7.24	152.01	4.85E-14	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
4	hsa-miR-302d-3p	7.23	150.37	8.33E-15	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
5	hsa-miR-302b-3p	6.95	123.89	2.22E-16	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
6	hsa-miR-302c-5p	6.56	94.36	1.47E-09	miR-302c-5p (miRNAs w/seed UUAACAU)
7	hsa-miR-135b-5p	5.49	44.93	2.20E-07	miR-135a-5p (and other miRNAs w/seed AUGGCUU)
8	hsa-miR-373-3p	5.02	32.39	1.76E-05	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
9	hsa-miR-372-3p	4.75	26.90	8.48E-07	miR-291a-3p (and other miRNAs w/seed AAGUGCU)
10	hsa-miR-187-3p	4.37	20.66	6.04E-06	miR-187-3p (miRNAs w/seed CGUGUCU)
11	hsa-miR-302b-5p	4.36	20.48	1.00E-04	miR-302b-5p (and other miRNAs w/seed CUUUAAC)
12	hsa-miR-100-3p	4.32	19.96	1.26E-05	miR-100-3p (miRNAs w/seed AAGCUUG)
13	hsa-miR-12135	4.31	19.82	6.95E-05	miR-12135 (miRNAs w/seed AAAGGUU)

14	hsa-miR-371a-5p	4.29	19.51	9.49E-05	miR-293-5p (and other miRNAs w/seed CUCAAAC)
15	hsa-miR-518c-3p	4.25	18.99	1.00E-04	miR-518a-3p (and other miRNAs w/seed AAAGCGC)
16	hsa-miR-515-5p	4.05	16.57	7.08E-05	miR-515-5p (and other miRNAs w/seed UCUCCAA)
17	hsa-miR-31-3p	3.98	15.73	4.00E-04	miR-31-3p (and other miRNAs w/seed GCUAUGC)
18	hsa-miR-520f-3p	3.85	14.39	7.00E-04	miR-302c-3p (and other miRNAs w/seed AGUGCUU)
19	hsa-miR-516a-5p	3.66	12.67	1.00E-04	miR-516a-5p (miRNAs w/seed UCUCGAG)
20	hsa-miR-518f-3p	3.49	11.26	1.40E-03	miR-518a-3p (and other miRNAs w/seed AAAGCGC)
21	hsa-miR-6781-3p	3.48	11.18	1.90E-03	miR-2682-3p (and other miRNAs w/seed GCCUCUU)
22	hsa-miR-1298-5p	3.32	10.02	9.00E-04	miR-1298-5p (and other miRNAs w/seed UCAUUCG)
23	hsa-miR-31-5p	3.32	9.98	7.01E-09	miR-31-5p (and other miRNAs w/seed GGCAAGA)
24	hsa-miR-376b-3p	3.30	9.86	1.47E-05	miR-376a-3p (and other miRNAs w/seed UCAUAGA)
25	hsa-miR-106a-3p	3.26	9.58	4.00E-04	miR-106a-3p (and other miRNAs w/seed UGCAAUG)
26	hsa-miR-376c-5p	3.16	8.93	3.00E-03	miR-376b-5p (and other miRNAs w/seed GUGGAUA)
27	hsa-miR-517c-3p	3.07	8.41	4.70E-03	miR-517a-3p (and other miRNAs w/seed UCGUGCA)
28	hsa-miR-517a-3p	2.89	7.39	2.30E-03	miR-517a-3p (and other miRNAs w/seed UCGUGCA)
29	hsa-miR-518b	2.74	6.68	1.20E-03	miR-518a-3p (and other miRNAs w/seed AAAGCGC)
30	hsa-miR-18b-5p	2.67	6.38	9.00E-04	miR-18a-5p (and other miRNAs w/seed AAGGUGC)
31	hsa-miR-524-5p	2.57	5.95	1.93E-02	miR-520d-5p (and other miRNAs w/seed UACAAAG)
32	hsa-miR-4639-5p	2.545	5.84	2.03E-02	miR-4639-5p (miRNAs w/seed UGCUAAG)
33	hsa-miR-376b-5p	2.41	5.31	4.10E-03	miR-376b-5p (and other miRNAs w/seed GUGGAUA)
34	hsa-miR-105-5p	2.28	4.86	3.89E-02	miR-105-5p (and other miRNAs w/seed CAAAUGC)
35	hsa-miR-3195	2.27	4.81	6.40E-03	miR-3195 (miRNAs w/seed GCGCCGG)
36	hsa-miR-1323	2.27	4.81	2.76E-02	miR-548o-3p (and other miRNAs w/seed CAAAACU)
37	hsa-miR-376a-3p	2.28	4.71	2.83E-07	miR-376a-3p (and other miRNAs w/seed UCAUAGA)
38	hsa-miR-138-5p	2.22	4.66	2.47E-03	miR-138-5p (miRNAs w/seed GCUGGUG)
39	hsa-miR-143-5p	2.19	4.57	2.68E-05	miR-143-5p (and other miRNAs w/seed GUGCAGU)
40	hsa-miR-34a-5p	2.19	4.56	4.06E-07	miR-34a-5p (and other miRNAs w/seed GGCAGUG)
41	hsa-miR-299-5p	2.16	4.47	6.00E-04	miR-299a-5p (and other miRNAs w/seed GGUUUAC)
42	hsa-miR-539-3p	1.99	3.99	4.00E-03	miR-485-3p (and other miRNAs w/seed UCAUACA)
43	hsa-miR-222-5p	1.90	3.73	3.00E-02	miR-222-5p (miRNAs w/seed UCAGUAG)
44	hsa-miR-3168	1.86	3.63	1.00E-03	miR-3168 (miRNAs w/seed AGUUCUA)
45	hsa-miR-503-3p	1.85	3.60	3.00E-02	miR-503-3p (miRNAs w/seed GGGUAUU)
46	hsa-miR-154-5p	1.85	3.59	1.00E-03	miR-154-5p (miRNAs w/seed AGGUUAU)
47	hsa-miR-136-5p	1.84	3.59	1.00E-04	miR-136-5p (miRNAs w/seed CUCCAUA)
48	hsa-miR-218-5p	1.75	3.36	3.00E-04	miR-218-5p (and other miRNAs w/seed UGUGCUU)
49	hsa-miR-15a-3p	1.72	3.29	3.00E-02	miR-15a-3p (miRNAs w/seed AGGCCAU)
50	hsa-miR-3620-5p	1.70	3.26	3.00E-02	miR-1587 (and other miRNAs w/seed UGGGCUG)
51	hsa-miR-199b-5p	1.70	3.26	2.00E-04	miR-199a-5p (and other miRNAs w/seed CCAGUGU)
52	hsa-miR-363-5p	1.67	3.17	4.00E-02	miR-363-5p (and other miRNAs w/seed GGGUGGA)
53	hsa-miR-21-3p	1.56	2.95	2.00E-03	miR-122b-3p (and other miRNAs w/seed AACACCA)
54	hsa-miR-20b-5p	1.48	2.79	1.74E-05	miR-17-5p (and other miRNAs w/seed AAAGUGC)
55	hsa-miR-424-5p	1.46	2.76	3.73E-05	miR-16-5p (and other miRNAs w/seed AGCAGCA)
56	hsa-miR-125b-5p	1.48	2.73	2.53E-05	miR-125b-5p (and other miRNAs w/seed CCCUGAG)
57	hsa-miR-135a-5p	1.42	2.68	4.00E-02	miR-135a-5p (and other miRNAs w/seed AUGGCUU)
58	hsa-miR-494-3p	1.37	2.59	1.00E-03	miR-494-3p (miRNAs w/seed GAAACAU)
59	hsa-miR-379-3p	1.37	2.58	3.00E-02	miR-411-3p (and other miRNAs w/seed AUGUAAC)
60	hsa-miR-125b-1-3p	1.37	2.58	1.35E-02	miR-125b-1-3p (miRNAs w/seed CGGGUUA)
61	hsa-miR-199a-5p	1.32	2.50	3.06E-05	miR-199a-5p (and other miRNAs w/seed CCAGUGU)
62	hsa-miR-455-5p	1.32	2.49	2.00E-03	miR-455-5p (and other miRNAs w/seed AUGUGCC)
63	hsa-miR-411-5p	1.31	2.48	1.00E-03	miR-411-5p (and other miRNAs w/seed AGUAGAC)
64	hsa-miR-100-5p	1.27	2.41	2.00E-03	miR-100-5p (and other miRNAs w/seed ACCCGUA)
65	hsa-miR-542-3p	1.26	2.39	6.00E-03	miR-542-3p (miRNAs w/seed GUGACAG)

66	hsa-miR-377-3p	1.23	2.34	8.00E-03	miR-377-3p (miRNAs w/seed UCACACA)
67	hsa-miR-18a-5p	1.15	2.22	2.00E-04	miR-18a-5p (and other miRNAs w/seed AAGGUGC)
68	hsa-miR-493-3p	1.14	2.21	3.00E-03	miR-493-3p (miRNAs w/seed GAAGGUC)
69	hsa-miR-1277-5p	1.10	2.15	1.90E-02	miR-1277-5p (miRNAs w/seed AAUAUUAU)
70	hsa-miR-136-3p	1.04	2.05	2.40E-02	miR-136-3p (miRNAs w/seed AUCAUCG)
71	hsa-miR-149-5p	1.03	2.04	4.30E-02	miR-149-5p (miRNAs w/seed CUGGCUC)
72	hsa-miR-145-3p	1.02	2.02	4.20E-02	miR-145-3p (miRNAs w/seed GAUUCU)
73	hsa-miR-145-5p	1.01	2.01	2.00E-03	miR-145-5p (and other miRNAs w/seed UCCAGUU)
74	hsa-miR-6805-5p	-1.04	-2.06	1.60E-02	miR-3104-5p (and other miRNAs w/seed AGGGGCG)
75	hsa-miR-206	-1.18	-2.26	8.00E-03	miR-1-3p (and other miRNAs w/seed GGAAUGU)
76	hsa-miR-197-5p	-1.21	-2.31	1.80E-02	miR-197-5p (and other miRNAs w/seed GGGUAGA)
77	hsa-miR-1292-5p	-1.24	-2.37	4.90E-02	miR-1247-3p (and other miRNAs w/seed GGGAACG)
78	hsa-miR-548l	-1.26	-2.39	3.80E-02	miR-548l (miRNAs w/seed AAAGUAU)
79	hsa-miR-181c-5p	-1.31	-2.49	2.30E-02	miR-181a-5p (and other miRNAs w/seed ACAUUCA)
80	hsa-miR-412-5p	-1.40	-2.64	2.80E-02	miR-412-5p (miRNAs w/seed GGUCGAC)
81	hsa-miR-548b-5p	-1.42	-2.69	3.80E-02	miR-548h-5p (and other miRNAs w/seed AAAGUAA)
82	hsa-miR-3150b-3p	-1.47	-2.77	2.10E-02	miR-3150b-3p (and other miRNAs w/seed GAGGAGA)
83	hsa-miR-6891-5p	-1.50	-2.83	1.60E-02	miR-12118 (and other miRNAs w/seed AAGGAGG)
84	hsa-miR-151b	-1.53	-2.93	3.20E-02	miR-151-5p (and other miRNAs w/seed CGAGGAG)
85	hsa-miR-216a-5p	-1.55	-2.93	2.90E-02	miR-216a-5p (miRNAs w/seed AAUCUCA)
86	hsa-miR-202-5p	-1.59	-3.02	2.50E-02	miR-202-5p (miRNAs w/seed UCCUAUG)
87	hsa-miR-548o-3p	-1.65	-3.16	1.60E-02	miR-548o-3p (and other miRNAs w/seed CAAAACU)
88	hsa-miR-378d	-1.68	-3.21	3.00E-02	miR-378a-3p (and other miRNAs w/seed CUGGACU)
89	hsa-miR-6785-5p	-1.77	-3.42	3.80E-02	miR-149-3p (and other miRNAs w/seed GGGAGGG)
90	hsa-miR-4648	-1.79	-3.47	4.40E-02	miR-4648 (miRNAs w/seed GUGGGAC)
91	hsa-miR-450a-2-3p	-1.91	-3.76	1.20E-02	miR-450b-3p (and other miRNAs w/seed UUGGGGA)
92	hsa-miR-4745-5p	-1.95	-3.85	4.90E-02	miR-4481 (and other miRNAs w/seed GAGUGGG)
93	hsa-miR-184	-2.11	-4.32	6.00E-03	miR-184 (and other miRNAs w/seed GGACGGA)
94	hsa-miR-219a-5p	-2.12	-4.36	1.80E-02	miR-219a-5p (and other miRNAs w/seed GAUUGUC)
95	hsa-miR-128-1-5p	-2.13	-4.39	1.90E-02	miR-128-1-5p (and other miRNAs w/seed GGGGCCG)
96	hsa-miR-6516-5p	-2.22	-4.67	7.00E-03	miR-6516-5p (miRNAs w/seed UUGCAGU)
97	hsa-miR-5189-5p	-2.52	-5.74	1.00E-03	miR-1285-3p (and other miRNAs w/seed CUGGGCA)
98	hsa-miR-378g	-2.53	-5.79	3.00E-03	miR-378g (miRNAs w/seed CUGGGCU)
99	hsa-let-7f-2-3p	-2.79	-6.94	2.00E-04	let-7f-2-3p (and other miRNAs w/seed UAUACAG)
100	hsa-miR-6509-5p	-3.05	-8.33	8.00E-03	miR-6509-5p (miRNAs w/seed UUAGGUA)

Supplementary Table S4: Other ncRNAs differential expression analysis: severe symptoms *vs.* mild symptoms cases

N#	Name	Chromosome	Region	Max group mean	Log ₂ fold change	Fold change	P-value
1	MT-TG	MT	9991..10058	11827	3.57	11.86	1.74E-06
2	MT-TD	MT	7518..7585	19823	1.82	3.53	2.80E-03
3	MT-TF	MT	577..647	4269	1.81	3.52	8.76E-03
4	MT-TW	MT	5512..5579	682	1.79	3.46	1.04E-02
5	MT-TR	MT	10405..10469	3039	1.20	2.30	4.15E-02
6	MT-TN	MT	c(5657..5729)	3054	-1.55	-2.92	1.93E-02
7	MT-RNR1	MT	648..1601	2516	-1.79	-3.46	6.20E-04
8	MT-TM	MT	4402..4469	92425	-2.69	-6.44	8.47E-05
9	AL031595.3	22	44139365..44153626	56	3.74	13.32	1.44E-07

10	LINC02739	11	c(59560298..59566283)	2466	2.88	7.34	2.23E-07
11	AL928646.1	X	109054542..109054590	1001	2.10	4.30	2.50E-03
12	AP003499.4	11	93721542..93721621	145	1.76	3.38	4.38E-02
13	AC051619.7	15	c(45200325..45200632)	2214	1.13	2.19	2.14E-02
14	AC108134.2	16	c(3156736..3157483)	83	1.06	2.09	3.80E-02
15	AP005900.1	18	7995570..7995785	70	-1.14	-2.21	4.22E-02
16	AL135938.1	20	c(16670641..16670742)	14834	-1.21	-2.32	4.62E-02
17	AL391647.2	X	41316488..41316589	1714	-1.22	-2.34	3.91E-02
18	AC011603.1	12	c(49132853..49132947)	104	-1.29	-2.45	4.66E-02
19	AC012377.1	15	c(39922782..39922886)	103	-1.30	-2.46	3.29E-02
20	AL359759.1	10	c(100398352..100398446)	309	-1.42	-2.68	4.92E-02
21	AC091057.2	15	30673750..30673843	192	-1.49	-2.82	3.71E-02
22	AC132825.2	17	c(22524563..22525330)	194	-1.61	-3.06	2.90E-02
23	FP671120.8	21	c(8254592..8255514)	549	-1.88	-3.67	4.34E-02
24	AC090527.1	15	45591984..45592085	74	-2.05	-4.14	4.96E-03
25	AL035087.1	6	c(99642237..99642347)	60	-2.32	-5.00	1.12E-02
26	FP671120.4	21	8256781..8256933	5756	-2.51	-5.71	8.95E-06
27	AL109920.1	6	106454828..106454929	936	-4.98	-31.64	3.34E-07
28	LINC01921	2	216859948..216871643	69	-6.71	-104.58	2.06E-07

c: complement

Supplementary Table S5: Ingenuity Pathways Analysis (IPA) ASD vs. Control.

ID	Molecules in Network	Score	Focus Molecules	Top Diseases and Functions
1	ACSL6, AGO2, CNOT6, GFI1, Gnasas1, miR-101-3p, miR-122-5p, miR-125b-2-3p, mir-126, mir-130, mir-134, mir-188, miR-192-5p, miR-196a-5p, miR-199a-5p, miR-19b-3p, miR-221-3p, miR-28-3p, miR-291a-3p, mir-302, miR-3118, miR-328-3p, mir-335, miR-335-5p, miR-4446-3p, miR-660-5p, miR-96-5p, MKRN1, NR4A2 , TENT2	35	16	[Cancer, Organismal Injury and Abnormalities, Reproductive System Disease]
2	ADAMTS14, BLACAT1, BRAF , CDKN2A, Gnasas1, let-7a-5p, miR-100-5p, miR-1255b-5p, miR-127-3p, miR-141-3p, miR-144-3p, miR-144-5p, miR-150-3p, miR-17-5p, miR-185-5p, miR-194-5p, mir-290, miR-29b-3p, mir-302, miR-375-3p, miR-485-5p, mir-515, miR-744-5p, miR-7a-5p, MYC, PAX3-FOXO1, Smad2/3, SMAD6/7, Tgf beta, TUSC2	35	16	[Cancer, Organismal Injury and Abnormalities, Reproductive System Disease]
3	calcifediol, CD24, DDX60L, DDK1 , EPHB6 , HERC6, KIF23, miR-100-5p, miR-10396b-5p, miR-1180-3p, miR-1285-3p, miR-148b-5p, miR-16-5p, miR-182-5p, miR-183-5p, mir-1908, miR-193b-5p, miR-23a-5p, mir-335, miR-485-3p, mir-497, miR-542-3p, miR-584-5p, NTRK3 , RECK, RPS15, RTP4, SLFN5, TP53 , tretinoin, TRMT13	27	13	[Neurological Disease, Organismal Injury and Abnormalities, Psychological Disorders]

Supplementary Table S6: Ingenuity Pathways Analysis (IPA) networks ASD with severe symptoms vs. mild.

ID	Molecules in Network	Score	Focus Molecules	Top Diseases and Functions
1	BRAF , ERBB2, let-7f-2-3p, miR-106a-3p, mir-1231, miR-1285-3p, mir-138, miR-138-5p, miR-149-5p, miR-151-5p, mir-154, miR-154-5p, mir-17, mir-184, mir-187, miR-187-3p, miR-18a-5p, mir-197, miR-197-5p, miR-216a-5p, mir-25, miR-291a-3p, mir-302, miR-302a-5p, miR-302b-5p, miR-302c-5p, miR-377-3p, miR-485-3p, miR-494-3p, OIP5-AS1, PTEN , RNF149, SRC (family), UCA1	40	19	[Cancer, Organismal Injury and Abnormalities, Reproductive System Disease]
2	calcifediol, EGFR , HARS1, IGF1R , mir-10, miR-100-3p, miR-100-5p, miR-105-5p, miR-125b-1-3p, mir-136, miR-136-3p, miR-136-5p, miR-16-5p, mir-25, mir-299, miR-299a-5p, mir-31, miR-31-3p, miR-31-5p, miR-3104-5p, mir-322, mir-368, miR-378a-3p, mir-379, miR-411-3p, miR-411-5p, mir-542, miR-542-3p, miR-92a-3p, PAX3-FOXO1, PIK3C2B, PTPN7, RECK, RTL1, TLR2	32	16	[Cancer, Gastrointestinal Disease, Organismal Injury and Abnormalities]

3	AGO1, AGO2 , ALOX5AP, ARGONAUTE , DDX20, FGF16, MEF2A , miR-100-5p, miR-122b-3p, miR-135a-5p, miR-143-5p, mir-154, miR-15a-3p, miR-199a-5p, miR-21-5p, miR-219a-5p, miR-3150b-3p, mir-363, miR-363-5p, miR-455-5p, miR-493-3p, miR-494-3p, miR-515-5p, miR-548o-3p, miR-92a-3p, ZBP1	29	15	[Gene Expression, Organismal Injury and Abnormalities, Reproductive System Disease]
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