

## SUPPLEMENTARY TABLES

**Supplementary Table 1. Oligonucleotide sequence.**

siRNA	Target sequence (5'-3')
si-ENST00000606533 1	CACAGCAAGATGCAGACAA
si-ENST00000606533 2	CCACACCTATACCTTCTCA
si-ENST00000606533 3	GCCACCAGGTATCTTTACA
si-NC2	UUCUCCGAACGUGUCACGUTT
si-circ_0091223 1	GGAAUGUCAUUGAGUGUGATT
si-circ_0091223 2	AUGUCAUUGAGUGUGAUUGTT
si-circ_0091223 3	CAUUGAGUGUGAUUGGCCUTT
NC inhibitors	CAGUACUUUUGUGUAGUACAA
miR-1291 inhibitors	ACUGCUGGUCUUCAGUCAGGGCCA
NC mimics	UUGUACUACACAAAAGUACUG
miR-1291 mimics	UGGCCUGACUGAAGACCAGCAGU

**Supplementary Table 2. The primers sequence in the study.**

Genes	Forward sequence (5'-3')	Reverse primer (5'-3')
ENST00000532 071	GGAGACCTGATGTCCAATT	GTAAGGCTGTGAACCGTGT A
ENST00000606 533	GCATCATCGCTTCAACTTCG	GAATAGAGCCCACGGTCCT G
circ_0031728	GACTGCTGGAGATTCTTACAAC	CCCCAGAGGAACGCAAAGG T
circ_0091223	ATGTCATTGAGTGTGATTGGCC	GAATGGCTTGAATCACCTTG
miR_4530	GTCGTATCCAGTGCAGGGTCCGAGGTATTTCGCACTGGATACG ACCGCTCC	CGCGCCCAGCAGGACG
miR-1291	GTCGTATCCAGTGCAGGGTCCGAGGTATTTCGCACTGGATACG ACACTGCT	CGTGGCCCTGACTGAAGAC C
TYR	TCAGCCCAGCATCATTCTTC	GGCATCCGCTATCCCAGTAA
MITF	AAATACGTTGCCTGTCTCGG	TGTTGGGAAGGTTGGCTGG A
TYRP1	ACCAGAGGGTTCTCATAGTCAG	TTCTCAAATTGTGGCGTGTT
DCT	GGGCAGCGAGACCAGACGAT	TTGGCAATTCATGCTGTTT CTTC
RAB27A	GTAGTGAAAGAGGAGGAAGC	TCATTATCAGGTCCAGAAGC
MYO5A	GCCCGATGCTATGCTAAGTT	GCCAAGAAGCTCGCAAGT A
U6	GCTCGCTTCGGCAGCACATAT	ATATGGAACGCTTCACGAAT TTGC
GAPDH	CTCTGCTCCTCCTGTTTCGAC	GCCCAATACGACCAAATCC

**Supplementary Table 3. The predicted miRNA of screened lncRNA in  $\alpha$ -MSH-induced melanogenesis.**

<b>LncRNA</b>	<b>Predicted miRNA</b>
ENST00000532071	miR-6851-5p, miR-484, miR-1291, miR-6817-5p, miR-3120-5p, miR-5189-5p, miR-663b, miR-6847-3p, miR-6511b-5p, miR-5695, miR-6799-3p, miR-6772-3p, miR-4459, miR-4691-5p, miR-4421, miR-7158-5p, miR-6865-5p
NR_040100	miR-7851-3p, miR-1268b, miR-675-5p, miR-1268a, miR-4516, miR-3157-5p, miR-30c-2-3p, miR-6765-3p, miR-4466, miR-5096, miR-619-5p, miR-6760-5p, miR-4459, miR-6755-5p, miR-29b-2-5p, miR-2467-3p, miR-1304-5p, miR-373-3p, miR-106b-5p, miR-4713-5p, miR-1910-3p, miR-4439, miR-1233-5p, miR-3192-5p, miR-4518, miR-888-3p, miR-20b-5p, miR-93-5p, miR-6884-5p, miR-6780a-5p, miR-4695-5p, miR-17-5p, miR-20a-5p, miR-4259, miR-2681-5p, miR-6513-3p, miR-6813-5p, miR-6831-5p, miR-4493, miR-6089, miR-665, miR-3154, miR-4700-5p, miR-4469, miR-4725-3p, miR-4667-5p
ENST00000316807	miR-6849-3p, miR-4722-5p, miR-4652-5p, miR-4433a-3p, miR-3657, miR-324-3p, miR-7160-5p, miR-1913, miR-1273g-3p, miR-1254, miR-7851-3p, miR-4738-3p, miR-4699-5p, miR-1285-3p, miR-4733-3p, miR-6870-3p, miR-4649-5p, miR-4776-3p, miR-4708-3p, miR-573, miR-4439, miR-665, miR-3129-5p, miR-6757-3p, miR-4280, miR-4646-5p, miR-3135b, miR-4494, miR-922, miR-7703, miR-542-3p, miR-4421, miR-3174, miR-6884-5p, miR-181b-5p, miR-431-5p, miR-4515, miR-619-5p
ENST00000606533	miR-6791-3p, miR-7706, miR-4530, miR-508-5p, miR-1281, miR-6829-3p, miR-2467-5p, miR-619-5p, miR-143-5p, miR-3620-5p, miR-6801-3p, miR-3619-5p, miR-1291, miR-4673, miR-1587, miR-6810-3p, miR-6825-5p, miR-6791-5p, miR-5095, miR-1304-3p, miR-214-3p, miR-378a-5p, miR-4430, miR-939-3p, miR-7113-3p, miR-17-5p, miR-6811-5p, miR-3135b, miR-4538, miR-212-5p, miR-504-3p, miR-7160-5p, miR-20b-5p, miR-6747-3p, miR-3155a, miR-6763-5p, miR-5189-5p, miR-3943, miR-6787-5p, miR-658, miR-7114-5p, miR-8089, miR-4763-3p, miR-760, miR-4260, miR-4692, miR-6799-3p, miR-330-5p, miR-6883-5p, miR-3678-3p
lnc-CYP4F22-1:1	miR-6808-5p, miR-1285-3p, miR-1304-5p, miR-1827, miR-3187-5p, miR-6720-5p, miR-6884-5p, miR-6771-5p, miR-612, miR-6780a-5p, miR-5189-5p, miR-6086, miR-6779-5p, miR-661, miR-766-3p, miR-1273h-5p, miR-3064-5p, miR-4646-5p, miR-4491, miR-6089, miR-367-3p, miR-6820-3p, miR-1273e, miR-3622a-5p, miR-4802-3p, miR-6744-5p, miR-7703, miR-1268b, miR-1268a, miR-7157-3p
ENST00000587528	miR-654-5p, miR-6749-5p, miR-1908-3p, miR-92b-5p, miR-541-3p, miR-6825-5p, miR-4674, miR-9500, miR-3185, miR-6894-5p, miR-3960, miR-181a-2-3p, miR-8089
NR_031650	miR-578
lnc-LNPEP-2:1	miR-6878-5p, miR-6871-5p, miR-6779-3p, miR-4518, miR-3127-5p, miR-1266-5p, miR-1233-3p
ENST00000530955	miR-6833-3p, miR-6511b-5p, miR-4774-5p, miR-3670, miR-4524a-5p, miR-150-3p, miR-5001-5p, miR-4704-3p, miR-6832-3p, miR-4481, miR-6510-5p, miR-3620-5p, miR-4692, miR-6511a-5p, miR-4524b-5p, miR-8055, miR-4743-3p, miR-6734-3p, miR-892b, miR-6873-3p
ENST00000533322	miR-3187-5p, miR-612, miR-6856-3p, miR-6860, miR-6721-5p, miR-4758-3p, miR-6890-5p, miR-6812-5p, miR-6819-5p, miR-541-3p, miR-614, miR-4254, miR-378c, miR-1298-3p, miR-1251-5p, miR-212-5p, miR-3929
NR_104161	miR-378g, miR-7851-3p, miR-661, miR-939-3p, miR-6807-5p, miR-612, miR-3128, miR-3187-5p, miR-4797-3p, miR-4716-5p, miR-550b-2-5p, miR-4743-3p, miR-4525, miR-3652, miR-532-5p, miR-3137, miR-508-5p, miR-7843-5p, miR-4505
ENST00000414633	miR-4518, miR-875-3p, miR-490-3p, miR-345-5p, miR-619-3p, miR-5008-3p, miR-6822-3p, miR-1247-5p, miR-6737-3p, miR-3617-3p
ENST00000599817	miR-4656, miR-378g, miR-3620-5p, miR-1587, miR-6729-5p, miR-4505, miR-6758-5p, miR-6783-3p, miR-1343-3p, miR-939-3p
lnc-ELAVL2-1:2	miR-4686, miR-4436a, miR-4715-5p, miR-4668-3p, miR-1305, miR-185-5p, miR-106b-5p, miR-6881-3p, miR-4420, miR-6766-5p, miR-5739, miR-4293, miR-3173-3p, miR-29a-3p, miR-6720-5p, miR-4312, miR-2355-5p, miR-543
lnc-RBMY1J-6:1	miR-3591-3p, miR-141-5p, miR-7156-3p, miR-3612, miR-4308, miR-412-3p, miR-4742-3p, miR-6754-3p, miR-5193, miR-3679-5p, miR-4794

lnc-KIF20A-1:1	miR-550a-5p, miR-2110, miR-106a-5p, miR-17-5p, miR-20a-5p, miR-1254, miR-550a-3-5p, miR-3116, miR-33b-3p
lnc-TRIM37-1:2	miR-6511a-3p, miR-6824-3p, miR-4758-3p, miR-6837-3p, miR-6764-3p, miR-21-5p, miR-6849-3p, miR-765, miR-1224-3p, miR-584-3p
NR_104003	miR-6758-5p, miR-4644, miR-4510, miR-4747-5p, miR-4533, miR-6780b-5p, miR-3619-5p, miR-646, miR-5196-5p, miR-766-3p, miR-761, miR-214-3p, miR-6760-5p, miR-5186, miR-486-5p, miR-181a-2-3p, miR-3145-5p, miR-8081, miR-150-5p, miR-184, miR-6862-3p, miR-6089, miR-4767, miR-6510-5p, miR-4667-3p, miR-6739-5p, miR-3162-3p, miR-935, miR-4679, miR-6127, miR-6845-3p, miR-6720-5p, miR-4722-5p, miR-34a-5p, miR-892c-3p
lnc-BTBD19-1:1	miR-4789-5p, miR-5588-3p, miR-7106-3p, miR-425-5p, miR-4659a-5p, miR-4730, miR-7113-3p, miR-4433a-5p, miR-619-5p, miR-486-5p

**Supplementary Table 4. The predicted miRNA of screened circRNA in  $\alpha$ -MSH-induced melanogenesis.**

CircRNA	Predicted miRNA
circ_0031794	miR-519d-5p, miR-4694-5p, miR-6744-5p, miR-8082, miR-4534
circ_0035909	miR-4436b-5p, miR-942-5p, miR-6509-3p, miR-4659a-3p, miR-4659b-3p
circ_0074400	miR-3167, miR-876-5p, miR-1972, miR-4691-3p, miR-4659a-5p
circ_0066944	miR-338-3p, miR-3972, miR-1202, miR-5088-3p, miR-3194-5p
circ_0030056	miR-615-5p, miR-4290, miR-3189-3p, miR-491-5p, miR-3138
circ_0054509	miR-641, miR-3617-5p, miR-4756-3p, miR-6728-5p, miR-6072
circ_0015211	miR-4677-5p, miR-578, miR-629-3p, miR-22-5p, miR-2116-5p
circ_0054701	miR-1226-3p, miR-6828-3p, miR-3940-3p, miR-5196-3p,
circ_0068095	miR-6509-3p, miR-9-3p, miR-181a-2-3p, miR-4422, miR-4504
circ_0037543	miR-7106-5p, miR-4739, miR-1827, miR-1273g-3p, miR-149-3p
circ_0084506	miR-519e-5p, miR-515-5p, miR-519d-5p, miR-5695, miR-433-3p
circ_0002626	miR-5089-3p, miR-148a-3p, miR-148b-3p, miR-152-3p, miR-8080
circ_0083993	miR-3191-5p, miR-455-3p.1, miR-139-3p, miR-3944-5p, miR-4420
circ_0025748	miR-4659a-3p, miR-4659b-3p, miR-4677-5p, miR-2116-5p, miR-22-5p
circ_0069815	miR-4659a-3p, miR-4659b-3p, miR-4778-3p, miR-130b-5p, miR-3942-3p
circ_0053692	miR-4793-3p, miR-1288-3p, miR-24-3p, miR-6842-3p, miR-1269a
circ_0067366	miR-451b, miR-6817-5p, miR-640, miR-4769-3p, miR-4727-5p
circ_0059675	miR-4454, miR-876-3p, miR-562, miR-31-5p, miR-548v
circ_0091223	miR-197-3p, miR-455-3p.2, miR-8056, miR-1291, miR-6775-3p
circ_0031463	miR-4778-3p, miR-5193, miR-660-3p, miR-219a-5p, miR-4782-3p
circ_0053508	miR-4691-5p, miR-6792-3p, miR-3653-5p, miR-6842-3p, miR-4267
circ_0020240	miR-4672, miR-3913-5p, miR-3122, miR-3120-3p, miR-6768-5p
circ_0058701	miR-3915, miR-5582-5p, miR-1910-5p, miR-1224-5p, miR-4689
circ_0026068	miR-328-5p, miR-6885-5p, miR-4326, miR-518c-5p, miR-6780a-3p
circ_0015226	miR-6884-5p5, miR-485-5p5, miR-39753, miR-31883, miR-2467-5p3
circ_0007726	miR-4645-3p, miR-612, miR-5189-5p, miR-1285-3p, miR-6860
circ_0050401	miR-6836-3p, miR-4772-5p, miR-662, miR-383-5p.2, miR-4281

circ_0058630	miR-509-3-5p, miR-509-5p, miR-4418, miR-197-3p, miR-760
circ_0083902	miR-670-5p, miR-3677-5p, miR-4786-3p, miR-622, miR-642b-5p
circ_0088002	miR-5006-5p, miR-766-3p, miR-1202, miR-3972, miR-4533
circ_0079872	miR-432-3p, miR-8058, miR-5009-5p, miR-3074-5p, miR-7152-5p
circ_0068584	miR-4738-5p, miR-4701-5p, miR-588, miR-4435, miR-4709-5p
circ_0001808	miR-3977, miR-95-5p, miR-1184, miR-4288, miR-632
circ_0021740	miR-6748-3p, miR-3614-3p, miR-4778-3p, miR-4421, miR-5699-3p
circ_0073019	miR-6873-3p, miR-6833-3p, miR-4768-5p, miR-545-3p, miR-6817-3p
circ_0031728	miR-4677-3p, miR-4530, miR-4713-5p, miR-766-3p, miR-3135b
circ_0053546	miR-5193, miR-660-3p, miR-4326, miR-4267, miR-3922-5p
circ_0014138	miR-5193, miR-660-3p, miR-1248, miR-6868-3p, miR-1237-3p
circ_0055832	miR-3663-5p, miR-455-3p.2, miR-4778-3p, miR-6744-3p, miR-4757-5p
circ_0047279	miR-4800-3p, miR-6877-3p, miR-6890-3p, miR-3713, miR-4780
circ_0077787	miR-578, miR-1539, miR-4691-5p, miR-6792-3p, miR-140-3p.1
circ_0072730	miR-29a-5p, miR-452-3p, miR-653-3p, miR-5703, miR-4516
circ_0073464	miR-4493, miR-6126, miR-605-3p, miR-4753-5p, miR-1825
circ_0030604	miR-6890-3p, miR-7977, miR-186-3p, miR-483-3p.1, miR-4436b-3p

**Supplementary Table 5. The predicted miRNA of screened mRNA in  $\alpha$ -MSH-induced melanogenesis.**

<b>mRNA</b>	<b>Predicted miRNA</b>
CALM2	miR-93-3p, miR-874-5p, miR-8086, miR-7109-3p, miR-7108-5p, miR-6867-3p, miR-6828-3p, miR-6810-3p, miR-6802-3p, miR-6801-3p, miR-6778-3p, miR-631, miR-6071, miR-5690, miR-519e-5p, miR-519d-5p, miR-515-5p, miR-5002-3p, miR-4800-5p, miR-4755-3p, miR-4748, miR-4730, miR-4724-3p, miR-4650-3p, miR-4641, miR-4464, miR-4313, miR-4313, miR-4309, miR-4285, miR-3943, miR-376c-3p, miR-3665, miR-3665, miR-3198, miR-25-5p, miR-135b-5p, miR-135a-5p, miR-1289, miR-103b
CTNNB1	miR-892c-5p, miR-892b, miR-885-5p, miR-6837-3p, miR-6806-5p, miR-6762-3p, miR-6715b-5p, miR-660-5p, miR-6513-5p, miR-6511a-5p, miR-6506-3p, miR-624-5p, miR-6069, miR-5591-3p, miR-5586-3p, miR-526b-5p, miR-512-5p, miR-4999-5p, miR-496.1, miR-495-5p, miR-483-3p.1, miR-4776-5p, miR-4765, miR-4733-5p, miR-4708-3p, miR-4684-3p, miR-4503, miR-4255, miR-3973, miR-3691-3p, miR-3688-5p, miR-3688-5p, miR-3619-3p, miR-3162-3p, miR-3137, miR-3119, miR-214-3p, miR-1972, miR-142-3p.2, miR-1276
EDNRB	miR-7160-5p, miR-6872-3p, miR-6773-5p, miR-6759-5p, miR-6748-5p, miR-6728-5p, miR-6724-5p, miR-648, miR-588, miR-548ao-3p, miR-520e, miR-520d-3p, miR-520c-3p, miR-520b, miR-520a-3p, miR-5187-5p, miR-4746-5p, miR-4661-5p, miR-4519, miR-3945, miR-3935, miR-372-3p, miR-3688-5p, miR-367-5p, miR-3670, miR-3659, miR-3650, miR-3187-3p, miR-31-5p, miR-3156-3p, miR-302d-3p, miR-19b-3p, miR-19a-3p, miR-196b-5p, miR-196a-5p, miR-182-5p, miR-181a-3p, miR-1468-5p, miR-1294, miR-1273e
FZD4	miR-8081, miR-7704, miR-7113-3p, miR-6882-3p, miR-6826-3p, miR-6809-5p, miR-6792-3p, miR-6766-3p, miR-661, miR-5739, miR-5587-5p, miR-5581-5p, miR-4782-3p, miR-4749-3p, miR-4731-5p, miR-4646-3p, miR-449c-3p, miR-4297, miR-3938, miR-3914, miR-3166, miR-3127-5p, miR-3127-5p, miR-29c-3p, miR-29b-3p, miR-29a-3p, miR-219a-5p, miR-218-5p, miR-199b-5p, miR-199a-5p, miR-1294, miR-1251-3p, miR-124-3p.2, miR-124-3p.1, miR-124-3p.1, miR-1184, miR-101-3p.1, miR-101-3p.1, let-7g-3p, let-7a-2-3p

FZD7 miR-874-5p, miR-7515, miR-6884-5p, miR-6881-3p, miR-6878-5p, miR-6871-5p, miR-6822-3p, miR-6805-5p, miR-6803-3p, miR-6788-5p, miR-6788-5p, miR-6785-3p, miR-670-5p, miR-6515-5p, miR-608, miR-532-5p, miR-485-5p, miR-4777-3p, miR-4774-3p, miR-4750-3p, miR-4725-5p, miR-4700-3p, miR-4690-5p, miR-4681, miR-4661-3p, miR-4651, miR-4633-5p, miR-4532, miR-4526, miR-451b, miR-4423-3p, miR-3937, miR-3660, miR-345-3p, miR-3162-3p, miR-30c-2-3p, miR-30c-1-3p, miR-2355-5p, miR-212-5p, miR-1281

GNAO1 miR-92b-5p, miR-7974, miR-7704, miR-7155-5p, miR-6885-5p, miR-6836-3p, miR-6829-3p, miR-6791-3p, miR-6786-5p, miR-6768-5p, miR-6742-5p, miR-6739-3p, miR-6722-5p, miR-609, miR-608, miR-550a-3p, miR-503-3p, miR-4753-3p, miR-4711-3p, miR-4651, miR-449b-5p, miR-449a, miR-4463, miR-4445-3p, miR-4288, miR-3914, miR-3675-5p, miR-34c-5p, miR-34a-5p, miR-328-5p, miR-3152-5p, miR-27a-5p, miR-200c-5p, miR-193b-3p, miR-193a-3p, miR-185-3p, miR-1307-3p, miR-1264, miR-1184, let-7d-3p

IL6 miR-760, miR-6889-3p, miR-6807-3p, miR-6787-3p, miR-676-3p, miR-664a-5p, miR-628-5p, miR-574-3p, miR-5583-5p, miR-548z, miR-548t-3p, miR-548o-3p, miR-548h-3p, miR-548d-3p, miR-548bb-3p, miR-548av-3p, miR-548ap-3p, miR-548ac, miR-548aa, miR-512-5p, miR-4795-3p, miR-4680-3p, miR-4662a-5p, miR-4641, miR-4528, miR-4500, miR-449b-3p, miR-4256, miR-3925-5p, miR-365b-3p, miR-365a-3p, miR-338-5p, miR-3138, miR-3126-3p, miR-217, miR-1-5p, miR-149-5p, miR-148a-5p, miR-1323, miR-103b

MAPK11 miR-7976, miR-760, miR-7114-3p, miR-7107-5p, miR-6889-5p, miR-6886-5p, miR-6837-5p, miR-6836-5p, miR-6789-3p, miR-6786-5p, miR-6778-5p, miR-6777-5p, miR-6752-3p, miR-6746-3p, miR-6736-3p, miR-656-5p, miR-654-5p, miR-6132, miR-5689, miR-541-3p, miR-5192, miR-516a-5p, miR-4763-5p, miR-4685-5p, miR-4645-5p, miR-4642, miR-4640-5p, miR-4640-3p, miR-4532, miR-4433b-3p, miR-4313, miR-3922-5p, miR-3684, miR-3663-3p, miR-3202, miR-296-5p, miR-1911-3p, miR-1234-3p, miR-1233-5p, miR-1180-5p

POMC miR-7704, miR-7151-3p, miR-7111-5p, miR-6884-5p, miR-6870-5p, miR-6859-3p, miR-6852-5p, miR-6847-5p, miR-6836-5p, miR-6820-5p, miR-6813-5p, miR-6779-3p, miR-6730-5p, miR-6722-3p, miR-6134, miR-6132, miR-6087, miR-6085, miR-5698, miR-5572, miR-5095, miR-488-3p, miR-485-5p, miR-4764-5p, miR-4723-5p, miR-4692, miR-4514, miR-4438, miR-4262, miR-4257, miR-412-5p, miR-377-3p, miR-3691-5p, miR-3165, miR-1909-3p, miR-181d-5p, miR-181c-5p, miR-181b-5p, miR-181a-5p, miR-1207-5p

RAB38 miR-7161-3p, miR-7110-3p, miR-6878-5p, miR-6866-5p, miR-6833-5p, miR-6788-5p, miR-6775-3p, miR-663b, miR-650, miR-5702, miR-5690, miR-5584-5p, miR-539-3p, miR-499a-5p, miR-485-3p, miR-4802-5p, miR-4758-3p, miR-4710, miR-4666a-5p, miR-4443, miR-3612, miR-33a-3p, miR-3173-5p, miR-30e-5p, miR-30d-5p, miR-30c-5p, miR-30c-2-3p, miR-30c-1-3p, miR-30b-5p, miR-30a-5p, miR-3064-3p, miR-22-5p, miR-1972, miR-1972, miR-194-5p, miR-135a-3p, miR-1304-3p, miR-1295b-3p, miR-1291, miR-124-3p.1

SOX6 miR-96-5p, miR-942-3p, miR-93-3p, miR-8075, miR-7-5p, miR-7150, miR-7110-5p, miR-6883-5p, miR-6856-5p, miR-6825-5p, miR-6785-5p, miR-6783-5p, miR-6763-5p, miR-6755-5p, miR-6754-3p, miR-6071, miR-505-5p, miR-499b-5p, miR-4767, miR-4758-3p, miR-4725-5p, miR-4649-3p, miR-449c-5p, miR-412-3p, miR-34b-5p, miR-342-3p, miR-3157-5p, miR-3150a-3p, miR-2682-5p, miR-219a-5p, miR-219a-5p, miR-1911-5p, miR-183-5p.2, miR-183-5p.2, miR-182-5p, miR-1271-5p, miR-1249-3p, miR-107, miR-103a-3p, let-7d-5p

TYR miR-7161-3p, miR-6851-3p, miR-6845-5p, miR-6824-5p, miR-6783-5p, miR-6775-3p, miR-6762-5p, miR-634, miR-619-3p, miR-605-3p, miR-584-3p, miR-571, miR-5586-3p, miR-552-3p, miR-490-3p, miR-4696, miR-4656, miR-4646-5p, miR-4638-3p, miR-4530, miR-450b-5p, miR-4446-3p, miR-4326, miR-4314, miR-4278, miR-3934-5p, miR-3690, miR-3650, miR-330-5p, miR-328-3p, miR-326, miR-3191-5p, miR-3179, miR-3154, miR-3120-3p, miR-27a-5p, miR-204-3p, miR-1304-3p, miR-1291, miR-1208

TYROBP miR-96-3p, miR-939-5p, miR-889-5p, miR-7107-3p, miR-6895-3p, miR-6843-3p, miR-6842-3p, miR-6766-5p, miR-6763-5p, miR-6759-5p, miR-6756-5p, miR-6753-3p, miR-654-5p, miR-6516-3p, miR-636, miR-628-5p, miR-6090, miR-579-5p, miR-571, miR-541-3p, miR-5192, miR-4518, miR-450a-2-3p, miR-4430, miR-4417, miR-4266, miR-3977, miR-3663-5p, miR-3652, miR-3175, miR-3150a-3p, miR-27a-5p, miR-218-5p, miR-2113, miR-183-5p.2, miR-183-5p.1, miR-134-3p, miR-1343-5p, miR-1287-5p, miR-1266-5p

**Supplementary Table 6. The lncRNA-miRNA-mRNA ceRNA network involved in  $\alpha$ -MSH-induced melanogenesis.**

<b>lncRNA</b>	<b>miRNA</b>	<b>mRNA</b>
ENST00000587528	miR-92b-5p	GNAO1
ENST00000530955	miR-892b	CTNNB1
NR_104003	miR-8081	FZD4
ENST00000606533	miR-760	IL6, MAPK11
ENST00000316807, ENST00000606533	miR-7160-5p	EDNRB
lnc-BTBD19-1:1, ENST00000606533	miR-7113-3p	FZD4
NR_040100, ENST00000316807, lnc-CYP4F22-1:1	miR-6884-5p	FZD7, POMC
ENST00000606533	miR-6883-5p	SOX6
lnc-ELAVL2-1:2	miR-6881-3p	FZD7
lnc-LNPEP-2:1	miR-6878-5p	FZD7, RAB38
lnc-LNPEP-2:1	miR-6871-5p	FZD7
lnc-TRIM37-1:2	miR-6837-3p	CTNNB1
ENST00000606533	miR-6829-3p	GNAO1
ENST00000606533, ENST00000587528	miR-6825-5p	SOX6
ENST00000414633	miR-6822-3p	FZD7
NR_040100	miR-6813-5p	POMC
ENST00000606533	miR-6810-3p	CALM2
ENST00000606533	miR-6801-3p	CALM2
ENST00000606533	miR-6791-3p	GNAO1
lnc-LNPEP-2:1	miR-6779-3p	POMC
lnc-ELAVL2-1:2	miR-6766-5p	TYROBP
ENST00000606533	miR-6763-5p	SOX6, TYROBP
NR_040100	miR-6755-5p	SOX6
lnc-RBMY1J-6:1	miR-6754-3p	SOX6
ENST00000532071	miR-663b	RAB38
lnc-CYP4F22-1:1	miR-661	FZD4
ENST00000587528	miR-654-5p	MAPK11, TYROBP
ENST00000530955	miR-6511a-5p	CTNNB1
ENST00000414633	miR-619-3p	TYR
lnc-TRIM37-1:2	miR-584-3p	TYR
lnc-ELAVL2-1:2	miR-5739	FZD4
ENST00000587528, ENST00000533322	miR-541-3p	MAPK11, TYROBP
NR_104161	miR-532-5p	FZD7

ENST00000606533	miR-5095	POMC
ENST00000414633	miR-490-3p	TYR
NR_104003	miR-4767	SOX6
lnc-TRIM37-1:2	miR-4758-3p	RAB38, SOX6
lnc-BTBD19-1:1	miR-4730	CALM2
ENST00000316807	miR-4708-3p	CTNNB1
ENST00000606533, ENST00000530955	miR-4692	POMC
ENST00000599817	miR-4656	TYR
ENST00000316807, lnc-CYP4F22-1:1	miR-4646-5p	TYR
ENST00000606533	miR-4530	TYR
NR_040100, lnc-LNPEP-2:1, ENST00000414633	miR-4518	TYROBP
ENST00000606533	miR-4430	TYROBP
lnc-RBMY1J-6:1	miR-412-3p	SOX6
ENST00000606533	miR-3943	CALM2
ENST00000530955	miR-3670	EDNRB
NR_104161	miR-3652	TYROBP
lnc-RBMY1J-6:1	miR-3612	RAB38
NR_104003, ENST00000414633	miR-34a-5p	GNAO1
ENST00000606533	miR-330-5p	TYR
NR_104003	miR-3162-3p	CTNNB1, FZD7
NR_040100	miR-3157-5p	SOX6
NR_040100	miR-3154	TYR
NR_104161	miR-3137	CTNNB1
lnc-LNPEP-2:1	miR-3127-5p	FZD4
NR_040100	miR-30c-2-3p	FZD7, RAB38
lnc-ELAVL2-1:2	miR-29a-3p	FZD4
lnc-ELAVL2-1:2	miR-2355-5p	FZD7
ENST00000606533, NR_104003	miR-214-3p	CTNNB1
ENST00000606533, ENST00000533322	miR-212-5p	FZD7
ENST00000316807	miR-181b-5p	POMC
ENST00000606533	miR-1304-3p	TYR, RAB38
ENST00000532071, ENST00000606533	miR-1291	TYR, RAB38
ENST00000606533	miR-1281	FZD7
lnc-CYP4F22-1:1	miR-1273e	EDNRB
lnc-LNPEP-2:1	miR-1266-5p	TYROBP
NR_040100, lnc-LNPEP-2:1	miR-1233-5p	MAPK11

**Supplementary Table 7. The circRNA-miRNA-mRNA ceRNA network involved in  $\alpha$ -MSH-induced melanogenesis.**

<b>circRNA</b>	<b>miRNA</b>	<b>mRNA</b>
circ_0058630	miR-760	IL6,MAPK11
circ_0026068	miR-6885-5p	GNAO1
circ_0053692, circ_0053508	miR-6842-3p	TYROBP
circ_0050401	miR-6836-3p	GNAO1
circ_0054701	miR-6828-3p	CALM2
circ_0053508, circ_0077787	miR-6792-3p	FZD4
circ_0091223	miR-6775-3p	TYR, RAB38
circ_0020240	miR-6768-5p	GNAO1
circ_0054509	miR-6728-5p	EDNRB
circ_0083902	miR-670-5p	FZD7
circ_0073464	miR-605-3p	TYR
circ_0068584	miR-588	EDNRB
circ_0084506	miR-519e-5p	CALM2
circ_0031794, circ_0084506	miR-519d-5p	CALM2
circ_0084506	miR-515-5p	CALM2
circ_0030604	miR-483-3p.1	CTNNB1
circ_0031463	miR-4782-3p	FZD4
circ_0031728	miR-4530	TYR
circ_0067366	miR-451b	FZD7
circ_0026068, circ_0053546	miR-4326	TYR
circ_0001808	miR-4288	GNAO1
circ_0001808	miR-3977	TYROBP
circ_0053546	miR-3922-5p	MAPK11
circ_0055832	miR-3663-5p	TYROBP
circ_0026068	miR-328-5p	GNAO1, TYR
circ_0083993	miR-3191-5p	TYR
circ_0059675	miR-31-5p	EDNRB
circ_0030056	miR-3138	IL6
circ_0020240	miR-3120-3p	TYR
circ_0015211, circ_0025748	miR-22-5p	RAB38
circ_0031463	miR-219a-5p	SOX6, FZD4
circ_0074400	miR-1972	CTNNB1, RAB38
circ_0091223	miR-1291	TYR, RAB38
circ_0001808	miR-1184	FZD4, GNAO1