

Figure S1. The transfection efficiency evaluation of si-RHPN1-AS1 and miR-485-5p inhibitor in SKOV3 and OVCAR3 cells. (A) RT-qPCR was employed to detect the expression of RHPN1-AS1 in SKOV3 and OVCAR3 cells with the transfection of si-RHPN1-AS1 (si-lnc group), miR-485-5p inhibitor (inhibitor group), co-transfecting si-RHPN1-AS1 and inhibitor (si-lnc+inhibitor group), siRNA negative control (si-NC group), inhibitor negative control (inhibitor-NC group), siRNA NC+inhibitor-NC (co-NC group) and untreated cells (blank group). (B) RT-qPCR was employed to detect the expression of miR-485-5p in si-lnc group, inhibitor group, si-lnc+inhibitor group, NC group and blank group. The cellular experiments were biologically repeated for three times, and the data were presented as mean \pm standard deviation (SD). ** $P < 0.001$ in contrast to blank group.

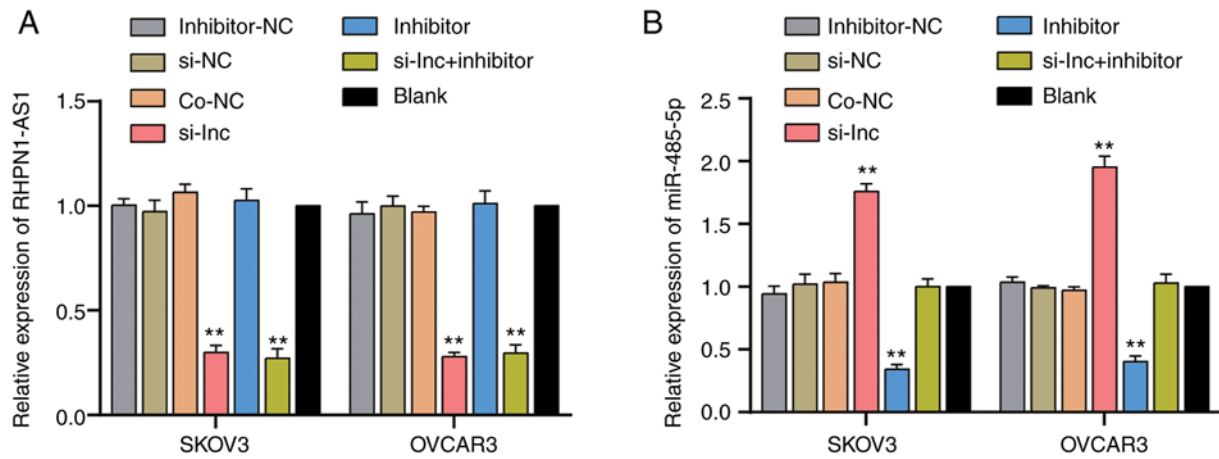


Figure S2. The transfection efficiency of miR-485-5p inhibitor and si-TPX2 in SKOV3 and OVCAR3 cells. Western blot was employed to detect the protein level of TPX2 in SKOV3 and OVCAR3 cells with the transfection of miR-485-5p inhibitor (inhibitor group), TPX2 siRNA (si-TPX2 group), co-transfecting inhibitor and TPX2 siRNA (inhibitor+si-TPX2 group), siRNA negative control (si-NC group), inhibitor negative control (inhibitor-NC group), siRNA NC+inhibitor-NC (co-NC group) and untreated cells (blank group). The cellular experiments were biologically repeated for three times, and the data were presented as mean \pm standard deviation (SD). **P<0.001 contrast to blank group.

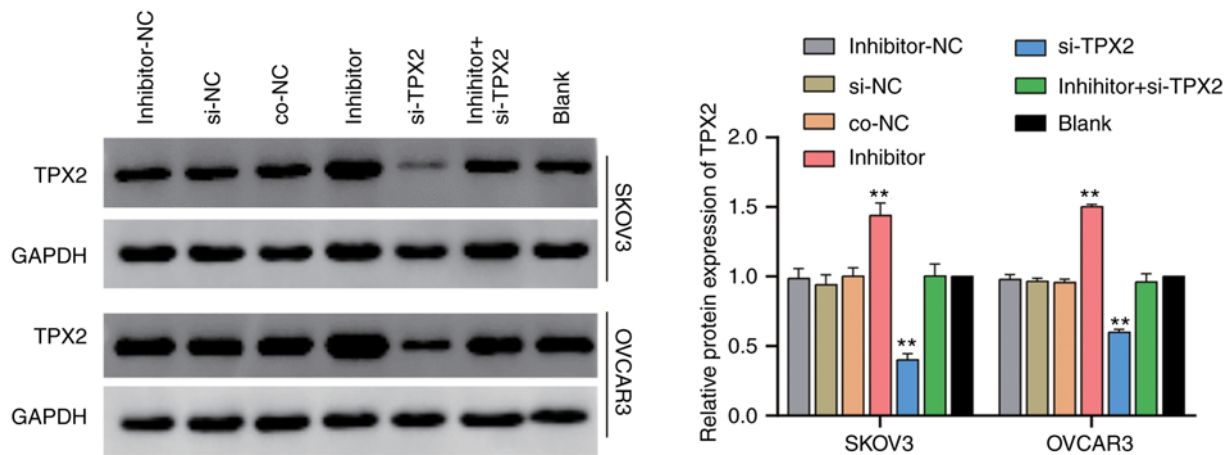


Figure S3. The transfection efficiency of si-RHPN1-AS1 and OE-TPX2 in SKOV3 and OVCAR3 cells. Western blot was employed to detect the protein level of *TPX2* in SKOV3 and OVCAR3 cell lines with the transfection of si-RHPN1-AS1 (si-lnc group), *TPX2* overexpression vector (OE-*TPX2* group), co-transfecting si-RHPN1-AS1 and *TPX2* overexpression vector (si-lnc+OE-*TPX2* group), siRNA negative control (si-NC group), empty vector (Empty vector group), siRNA NC+empty vector (co-NC group) and untreated cells (blank group). The cellular experiments were biologically repeated for three times, and the data were presented as mean \pm standard deviation (SD). ** $P < 0.001$ contrast to blank group.

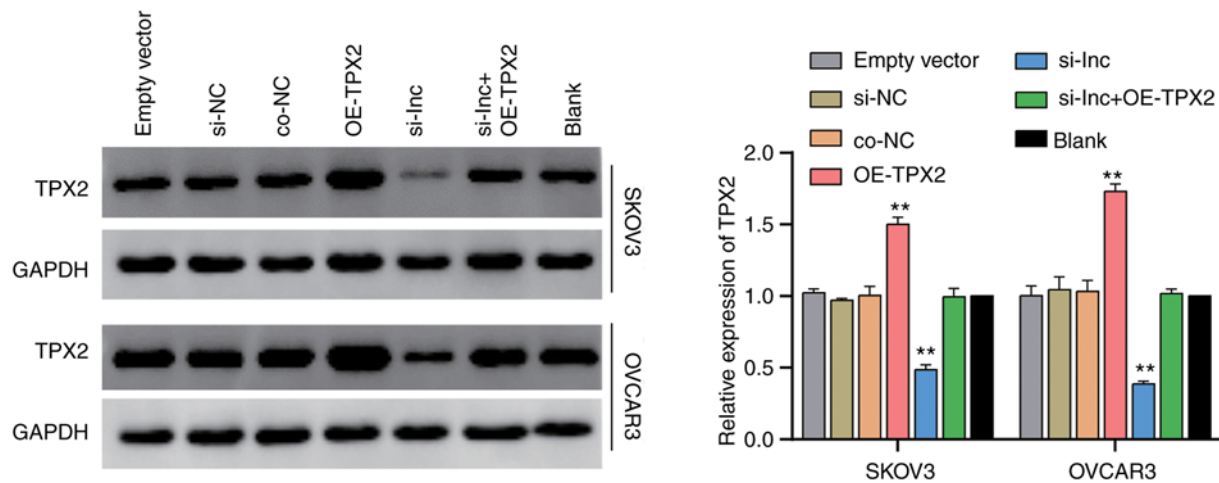


Table SI. The miRNAs binding to TPX2 were predicted by TargetScan.

miRNA	Position in the UTR	Seed match	Context++ score	Context++ score percentile	Weighted context++ score	Conserved branch length	Pct
hsa-miR-3713	17-23	7mer-m8	-0.06	61	-0.06	0	N/A
hsa-miR-4317	29-35	7mer-m8	-0.12	79	-0.12	0	N/A
hsa-miR-2278	40-46	7mer-m8	-0.18	95	-0.18	0	N/A
hsa-miR-655-5p	47-54	8mer	-0.44	99	-0.44	0	N/A
hsa-miR-377-5p	48-54	7mer-1A	-0.23	93	-0.23	0	N/A
hsa-miR-6086	48-54	7mer-1A	-0.17	93	-0.17	0	N/A
hsa-miR-1304-5p	50-56	7mer-1A	-0.14	81	-0.14	0	N/A
hsa-miR-4464	53-60	8mer	-0.34	98	-0.34	0	N/A
hsa-miR-4748	53-60	8mer	-0.26	98	-0.26	0	N/A
hsa-miR-329-5p	54-60	7mer-1A	-0.06	82	-0.06	0	N/A
hsa-miR-5571-3p	57-63	7mer-m8	-0.16	91	-0.16	0	N/A
hsa-miR-4696	66-72	7mer-m8	-0.25	95	-0.25	0	N/A
hsa-miR-451b	67-73	7mer-m8	-0.15	89	-0.15	0	N/A
hsa-miR-1273a	68-79	Non-canonical	N/A	N/A	N/A	0	N/A
hsa-miR-330-3p	70-76	7mer-m8	-0.12	92	-0.12	0.245	N/A
hsa-miR-6872-3p	83-90	8mer	-0.38	98	-0.38	0	N/A
hsa-miR-5581-3p	84-90	7mer-m8	-0.14	86	-0.14	0	N/A
hsa-miR-136-5p	86-92	7mer-1A	-0.05	66	-0.05	1.174	N/A
hsa-miR-6845-3p	88-94	7mer-1A	-0.09	72	-0.09	0	N/A
hsa-miR-6833-3p	89-95	7mer-m8	-0.02	61	-0.02	0	N/A
hsa-miR-4768-5p	89-95	7mer-m8	-0.02	59	-0.02	0	N/A
hsa-miR-6873-3p	89-95	7mer-1A	-0.01	20	-0.01	0	N/A
hsa-miR-2117	90-96	7mer-m8	-0.05	49	-0.05	0	N/A
hsa-miR-597-3p	91-97	7mer-m8	-0.2	89	-0.2	0	N/A
hsa-miR-23b-5p	93-99	7mer-1A	-0.18	83	-0.18	0	N/A
hsa-miR-23a-5p	93-99	7mer-1A	-0.11	81	-0.11	0	N/A
hsa-miR-4506	95-101	7mer-m8	-0.17	87	-0.17	0	N/A
hsa-miR-5680	98-104	7mer-m8	-0.02	68	-0.02	0	N/A
hsa-miR-539-5p	99-105	7mer-m8	-0.02	65	-0.02	0.536	N/A
hsa-miR-4531	101-107	7mer-m8	-0.16	86	-0.16	0	N/A
hsa-miR-4516	101-107	7mer-1A	-0.08	86	-0.08	0	N/A
hsa-miR-4434	101-107	7mer-1A	-0.12	81	-0.12	0	N/A
hsa-miR-5703	101-107	7mer-1A	-0.12	80	-0.12	0	N/A
hsa-miR-516b-5p	103-109	7mer-m8	-0.19	88	-0.19	0.099	N/A
hsa-miR-548n	109-115	7mer-1A	-0.05	86	-0.05	0.099	N/A
hsa-miR-548t-5p	109-115	7mer-1A	-0.01	52	-0.01	0	N/A
hsa-miR-548az-5p	109-115	7mer-1A	-0.01	51	-0.01	0	N/A
hsa-miR-564	121-127	7mer-m8	-0.41	95	-0.41	0.024	N/A
hsa-miR-3622a-5p	122-128	7mer-m8	-0.28	97	-0.28	0	N/A
hsa-miR-4269	123-130	8mer	-0.33	99	-0.33	0	N/A
hsa-miR-6715b-5p	123-130	8mer	-0.43	99	-0.43	0	N/A
hsa-miR-4742-5p	124-130	7mer-1A	-0.2	94	-0.2	0.024	N/A
hsa-miR-4692	124-130	7mer-1A	-0.18	91	-0.18	0	N/A
hsa-miR-4514	124-130	7mer-1A	-0.16	89	-0.16	0	N/A
hsa-miR-3664-3p	126-132	7mer-1A	-0.17	92	-0.17	0	N/A
hsa-miR-1266-5p	126-132	7mer-1A	-0.19	92	-0.19	0.024	N/A
hsa-miR-4518	126-132	7mer-1A	-0.11	90	-0.11	0.024	N/A
hsa-miR-3160-5p	130-137	8mer	-0.21	95	-0.21	0	N/A
hsa-miR-5697	138-144	7mer-1A	-0.1	84	-0.1	0	N/A
hsa-miR-1297	138-144	7mer-m8	-0.16	77	-0.16	0.844	<0.1
hsa-miR-26b-5p	138-144	7mer-m8	-0.16	77	-0.16	0.844	<0.1
hsa-miR-26a-5p	138-144	7mer-m8	-0.15	72	-0.15	0.844	<0.1
hsa-miR-4465	138-144	7mer-m8	-0.15	68	-0.15	0.844	<0.1
hsa-miR-6755-3p	142-148	7mer-m8	-0.3	92	-0.3	0	N/A

Table SI. Continued.

miRNA	Position in the UTR	Seed match	Context++ score	Context++ score percentile	Weighted context++ score	Conserved branch length	Pct
hsa-miR-140-3p.1	148-154	7mer-1A	-0.19	91	-0.19	0.946	<0.1
hsa-miR-1289	152-159	8mer	-0.55	99	-0.55	0.024	N/A
hsa-miR-4309	153-159	7mer-m8	-0.23	93	-0.23	0	N/A
hsa-miR-3198	153-159	7mer-m8	-0.16	92	-0.16	0	N/A
hsa-miR-4294	153-159	7mer-1A	-0.15	83	-0.15	0	N/A
hsa-miR-548ar-3p	158-164	7mer-m8	-0.02	61	-0.02	0.024	N/A
hsa-miR-548a-3p	158-164	7mer-m8	-0.02	60	-0.02	0.024	N/A
hsa-miR-548e-3p	158-164	7mer-m8	-0.02	59	-0.02	0.024	N/A
hsa-miR-548f-3p	158-164	7mer-m8	-0.02	59	-0.02	0.024	N/A
hsa-miR-548az-3p	158-164	7mer-m8	-0.02	59	-0.02	0.024	N/A
hsa-miR-1323	159-165	7mer-m8	-0.02	63	-0.02	0.099	N/A
hsa-miR-548o-3p	159-165	7mer-m8	-0.02	51	-0.02	0.099	N/A
hsa-miR-3065-5p	162-169	8mer	-0.12	86	-0.12	0	N/A
hsa-miR-7159-5p	163-169	7mer-m8	-0.05	59	-0.05	0	N/A
hsa-miR-513c-5p	166-172	7mer-1A	-0.04	73	-0.04	0.085	N/A
hsa-miR-514b-5p	166-172	7mer-1A	-0.04	73	-0.04	0.085	N/A
hsa-miR-5571-5p	168-174	7mer-m8	-0.09	92	-0.09	0	N/A
hsa-miR-570-3p	174-180	7mer-m8	-0.08	76	-0.08	0	N/A
hsa-miR-3614-3p	191-197	7mer-1A	-0.18	88	-0.18	0	N/A
hsa-miR-126-5p	196-202	7mer-m8	-0.02	51	-0.02	0.47	N/A
hsa-miR-4528	198-204	7mer-1A	-0.11	88	-0.11	0	N/A
hsa-miR-6758-3p	200-206	7mer-1A	-0.13	89	-0.13	0	N/A
hsa-miR-4424	209-215	7mer-1A	-0.16	78	-0.09	0	N/A
hsa-miR-7154-5p	213-219	7mer-1A	-0.11	79	-0.06	0	N/A
hsa-miR-433-3p	213-219	7mer-1A	-0.08	78	-0.05	0.049	N/A
hsa-miR-4262	216-222	7mer-m8	-0.02	43	-0.01	0.069	<0.1
hsa-miR-181c-5p	216-222	7mer-m8	-0.02	31	-0.01	0.069	<0.1
hsa-miR-181b-5p	216-222	7mer-m8	-0.02	30	-0.01	0.069	<0.1
hsa-miR-181d-5p	216-222	7mer-m8	-0.02	30	-0.01	0.069	<0.1
hsa-miR-181a-5p	216-222	7mer-m8	-0.02	30	-0.01	0.069	<0.1
hsa-miR-4294	230-237	8mer	-0.45	98	-0.25	0	N/A
hsa-miR-3198	231-237	7mer-m8	-0.28	98	-0.16	0	N/A
hsa-miR-4309	231-237	7mer-m8	-0.33	97	-0.19	0	N/A
hsa-miR-1289	231-237	7mer-1A	-0.19	84	-0.11	0.024	N/A
hsa-miR-6514-5p	232-238	7mer-m8	-0.21	93	-0.12	0	N/A
hsa-miR-4802-3p	234-241	8mer	-0.34	98	-0.19	0	N/A
hsa-miR-942-3p	235-241	7mer-1A	-0.15	86	-0.09	0	N/A
hsa-miR-606	239-245	7mer-1A	-0.16	87	-0.09	0.024	N/A
hsa-miR-548ao-5p	243-249	7mer-m8	-0.14	78	-0.08	0.085	N/A
hsa-miR-548ax	243-249	7mer-m8	-0.14	78	-0.08	0.085	N/A
hsa-miR-299-5p	253-259	7mer-1A	-0.11	84	-0.06	0.579	N/A
hsa-miR-8069	255-262	8mer	-0.37	98	-0.16	0	N/A
hsa-miR-8075	258-264	7mer-m8	-0.22	87	-0.09	0	N/A
hsa-miR-6768-3p	266-272	7mer-m8	-0.23	94	-0.1	0	N/A
hsa-miR-3163	270-276	7mer-1A	-0.01	45	0	0	N/A
hsa-miR-3667-5p	278-284	7mer-m8	-0.29	97	-0.12	0	N/A
hsa-miR-5586-3p	284-290	7mer-m8	-0.12	81	-0.05	0	N/A
hsa-miR-759	285-292	8mer	-0.25	98	-0.11	0.099	N/A
hsa-miR-554	291-297	7mer-1A	-0.14	81	-0.06	0.024	N/A
hsa-miR-10a-3p	296-302	7mer-1A	-0.08	93	-0.04	0	N/A
hsa-miR-642a-3p	308-314	7mer-1A	-0.1	80	-0.04	0	N/A
hsa-miR-642b-3p	308-314	7mer-1A	-0.1	80	-0.04	0	N/A
hsa-miR-6730-3p	309-315	7mer-m8	-0.19	92	-0.08	0	N/A
hsa-miR-628-5p	311-317	7mer-m8	-0.22	93	-0.09	0.085	N/A

Table SI. Continued.

miRNA	Position in the UTR	Seed match	Context++ score	Context++ score percentile	Weighted context++ score	Conserved branch length	Pct
hsa-miR-7157-3p	314-320	7mer-m8	-0.15	85	-0.07	0.312	N/A
hsa-miR-6737-3p	314-320	7mer-m8	-0.14	85	-0.06	0.312	N/A
hsa-miR-5008-3p	314-320	7mer-m8	-0.14	84	-0.06	0.312	N/A
hsa-miR-6757-3p	318-324	7mer-1A	-0.13	85	-0.06	0	N/A
hsa-miR-3976	326-332	7mer-m8	-0.16	81	-0.07	0	N/A
hsa-miR-4703-5p	330-337	8mer	-0.28	98	-0.12	0	N/A
hsa-miR-3942-5p	330-337	8mer	-0.3	98	-0.13	0	N/A
hsa-miR-3908	331-337	7mer-1A	-0.12	92	-0.05	0	N/A
hsa-miR-4766-3p	331-337	7mer-m8	-0.17	89	-0.07	0	N/A
hsa-miR-4688	339-345	7mer-m8	-0.35	97	-0.15	0	N/A
hsa-miR-6743-5p	339-345	7mer-m8	-0.3	95	-0.13	0	N/A
hsa-miR-3936	341-347	7mer-1A	-0.2	90	-0.09	0	N/A
hsa-miR-4693-3p	350-356	7mer-1A	-0.17	80	-0.07	0	N/A
hsa-miR-6804-5p	355-361	7mer-m8	-0.33	94	-0.13	0	N/A
hsa-miR-8085	359-365	7mer-m8	-0.25	91	-0.1	0	N/A
hsa-miR-6731-5p	359-365	7mer-m8	-0.25	91	-0.1	0	N/A
hsa-miR-3175	360-367	8mer	-0.44	98	-0.17	0	N/A
hsa-miR-3150a-3p	361-367	7mer-m8	-0.3	95	-0.12	0	N/A
hsa-miR-6763-5p	361-367	7mer-m8	-0.29	95	-0.12	0	N/A
hsa-miR-1343-5p	361-367	7mer-1A	-0.15	85	-0.06	0.024	N/A
hsa-miR-939-5p	361-367	7mer-1A	-0.16	85	-0.07	0.024	N/A
hsa-miR-6825-5p	361-367	7mer-1A	-0.26	84	-0.11	0	N/A
hsa-miR-491-5p	362-368	7mer-m8	-0.3	95	-0.12	0.069	N/A
hsa-miR-1296-3p	363-369	7mer-m8	-0.31	97	-0.13	0.085	N/A
hsa-miR-4796-3p	365-371	7mer-m8	-0.22	97	-0.09	0	N/A
hsa-miR-548t-5p	366-372	7mer-m8	-0.12	95	-0.05	0	N/A
hsa-miR-548az-5p	366-372	7mer-m8	-0.12	95	-0.05	0	N/A
hsa-miR-4282	378-385	8mer	-0.03	95	-0.01	0	N/A
hsa-miR-29b-1-5p	385-391	7mer-1A	-0.17	93	-0.07	0	N/A
hsa-miR-3159	407-413	7mer-1A	-0.21	94	-0.09	0	N/A
hsa-miR-651-5p	408-414	7mer-m8	-0.21	94	-0.09	0.024	N/A
hsa-miR-200a-5p	412-418	7mer-1A	-0.05	75	-0.02	0.364	N/A
hsa-miR-200b-5p	412-418	7mer-1A	-0.03	71	-0.01	0.364	N/A
hsa-miR-3675-3p	417-423	7mer-m8	-0.19	95	-0.08	0	N/A
hsa-miR-216b-5p	418-425	8mer	-0.38	99	-0.14	0.101	<0.1
hsa-miR-216a-5p	419-425	7mer-1A	-0.17	92	-0.07	0.101	<0.1
hsa-miR-497-3p	431-437	7mer-1A	-0.09	89	-0.03	0.085	N/A
hsa-miR-5696	436-442	7mer-m8	-0.02	50	-0.01	0	N/A
hsa-miR-4729	436-442	7mer-1A	-0.01	37	0	0	N/A
hsa-miR-6891-3p	439-445	7mer-1A	-0.19	89	-0.08	0	N/A
hsa-miR-6072	439-445	7mer-1A	-0.17	86	-0.07	0	N/A
hsa-miR-670-3p	440-446	7mer-m8	-0.19	92	-0.07	1.992	N/A
hsa-miR-4326	441-448	8mer	-0.5	99	-0.18	0	N/A
hsa-miR-4445-5p	445-452	8mer	-0.3	95	-0.11	0	N/A
hsa-miR-508-3p	446-452	7mer-1A	-0.2	89	-0.08	0.024	N/A
hsa-miR-4782-3p	446-452	7mer-1A	-0.11	79	-0.04	0.676	<0.1
hsa-miR-219a-5p	446-452	7mer-1A	-0.09	76	-0.03	0.676	<0.1
hsa-miR-6766-3p	446-452	7mer-1A	-0.09	76	-0.03	0.676	<0.1
hsa-miR-4699-3p	452-458	7mer-m8	-0.02	49	-0.01	0	N/A
hsa-miR-29a-5p	455-462	8mer	-0.27	97	-0.07	0	N/A
hsa-miR-3920	456-462	7mer-1A	-0.16	90	-0.05	0	N/A
hsa-miR-5004-5p	466-472	7mer-m8	-0.24	89	-0.05	0	N/A
hsa-miR-5197-3p	470-476	7mer-m8	-0.08	80	-0.01	0	N/A
hsa-miR-1253	471-477	7mer-m8	-0.12	82	-0.02	0.024	N/A

Table SI. Continued.

miRNA	Position in the UTR	Seed match	Context++ score	Context++ score percentile	Weighted context++ score	Conserved branch length	Pct
hsa-miR-3919	473-479	7mer-m8	-0.08	87	-0.01	0	N/A
hsa-miR-3678-3p	475-481	7mer-m8	-0.24	95	-0.03	0	N/A
hsa-miR-2467-3p	475-481	7mer-1A	-0.21	91	-0.03	0	N/A
hsa-miR-10a-3p	488-494	7mer-1A	-0.09	94	-0.01	0	N/A
hsa-miR-4713-3p	502-508	7mer-m8	-0.34	92	-0.04	0	N/A
hsa-miR-545-3p	509-515	7mer-m8	-0.02	31	0	0.099	N/A
hsa-miR-3120-3p	510-516	7mer-m8	-0.02	35	0	0	N/A
hsa-miR-7848-3p	517-523	7mer-m8	-0.16	80	-0.02	0	N/A
hsa-miR-329-5p	525-531	7mer-m8	-0.02	51	0	0.085	N/A
hsa-miR-655-5p	527-533	7mer-1A	-0.12	76	-0.02	0	N/A
hsa-miR-377-5p	527-533	7mer-1A	-0.07	59	-0.01	0.085	N/A
hsa-miR-6086	527-533	7mer-1A	-0.02	57	0	0.085	N/A
hsa-miR-1294	528-534	7mer-m8	-0.14	82	-0.02	0.024	N/A
hsa-miR-4710	529-536	8mer	-0.28	95	-0.04	0	N/A
hsa-miR-7855-5p	530-537	8mer	-0.24	94	-0.03	0	N/A
hsa-miR-4792	530-536	7mer-1A	-0.05	59	-0.01	0	N/A
hsa-miR-143-5p	537-543	7mer-m8	-0.02	63	0	0	N/A
hsa-miR-548q	540-546	7mer-m8	-0.18	93	-0.02	0	N/A
hsa-miR-653-3p	543-549	7mer-m8	-0.14	89	-0.02	0.085	N/A
hsa-miR-1304-3p	544-550	7mer-m8	-0.05	73	-0.01	0	N/A
hsa-miR-670-3p	547-553	7mer-m8	-0.03	48	0	1.631	N/A
hsa-miR-6875-3p	550-556	7mer-m8	-0.09	82	-0.01	0	N/A
hsa-miR-4778-3p	551-558	8mer	-0.19	93	-0.03	0	N/A
hsa-miR-6740-3p	553-559	7mer-m8	-0.11	72	-0.01	0	N/A
hsa-miR-5092	562-568	7mer-m8	-0.18	90	-0.02	0	N/A
hsa-miR-2467-5p	576-583	8mer	-0.19	92	-0.03	0	N/A
hsa-miR-3975	577-583	7mer-1A	-0.09	78	-0.01	0	N/A
hsa-miR-3188	577-583	7mer-1A	-0.07	76	-0.01	0	N/A
hsa-miR-485-5p	577-583	7mer-1A	-0.14	76	-0.02	0.587	N/A
hsa-miR-6884-5p	577-583	7mer-1A	-0.11	67	-0.02	0.587	N/A
hsa-miR-4316	578-585	8mer	-0.2	92	-0.03	0	N/A
hsa-miR-1294	579-585	7mer-1A	-0.07	66	-0.01	0.024	N/A
hsa-miR-4677-3p	580-586	7mer-m8	-0.02	40	0	0.085	N/A
hsa-miR-6762-3p	585-592	8mer	-0.17	83	-0.02	0	N/A
hsa-miR-604	586-592	7mer-1A	-0.15	81	-0.02	0.024	N/A
hsa-miR-647	586-592	7mer-m8	-0.04	71	-0.01	0	N/A
hsa-miR-6821-5p	590-596	7mer-m8	-0.18	78	-0.02	0	N/A
hsa-miR-6853-5p	590-596	7mer-1A	-0.2	74	-0.03	0	N/A
hsa-miR-4520-5p	591-597	7mer-m8	-0.2	69	-0.03	0	N/A
hsa-miR-370-3p	595-601	7mer-m8	-0.02	41	0	0.422	N/A
hsa-miR-6893-3p	595-601	7mer-m8	-0.03	41	0	0.422	N/A
hsa-miR-596	597-603	7mer-m8	-0.17	92	-0.02	0.024	N/A
hsa-miR-1295b-5p	603-609	7mer-m8	-0.02	28	0	0	N/A
hsa-miR-1912	603-609	7mer-m8	-0.02	28	0	0	N/A
hsa-miR-500b-3p	604-610	7mer-m8	-0.02	45	0	0.085	N/A
hsa-miR-4758-3p	608-614	7mer-m8	-0.11	77	-0.02	0	N/A
hsa-miR-4323	609-615	7mer-m8	-0.02	17	0	0	N/A
hsa-miR-4485-3p	616-622	7mer-1A	-0.14	67	-0.02	0	N/A
hsa-miR-337-5p	616-622	7mer-1A	-0.12	62	-0.02	0.085	N/A
hsa-miR-3133	629-635	7mer-m8	-0.02	80	0	0	N/A
hsa-miR-651-3p	633-640	8mer	-0.03	63	0	0	N/A
hsa-miR-29a-3p	642-648	7mer-m8	-0.22	85	-0.03	1.189	<0.1
hsa-miR-29b-3p	642-648	7mer-m8	-0.22	85	-0.03	1.189	<0.1
hsa-miR-29c-3p	642-648	7mer-m8	-0.22	85	-0.03	1.189	<0.1

Table SI. Continued.

miRNA	Position in the UTR	Seed match	Context++ score	Context++ score percentile	Weighted context++ score	Conserved branch length	Pct
hsa-miR-3065-3p	643-650	8mer	-0.44	99	-0.05	0.437	N/A
hsa-miR-383-3p	644-650	7mer-1A	-0.13	89	-0.02	0	N/A
hsa-miR-3617-3p	645-652	8mer	-0.3	95	-0.04	0.085	N/A
hsa-miR-361-5p	647-653	7mer-1A	-0.15	84	-0.02	1.865	N/A
hsa-miR-374a-3p	647-653	7mer-m8	-0.06	72	-0.01	0.085	N/A
hsa-miR-339-5p	656-662	7mer-1A	-0.12	73	-0.02	0.836	N/A
hsa-miR-670-5p	657-663	7mer-1A	-0.15	93	-0.02	0	N/A
hsa-miR-642b-5p	658-664	7mer-m8	-0.09	73	-0.01	0	N/A
hsa-miR-6070	660-666	7mer-m8	-0.35	86	-0.04	0	N/A
hsa-miR-3177-3p	664-670	7mer-1A	-0.22	79	-0.03	0	N/A
hsa-miR-8064	670-677	8mer	-0.33	97	-0.04	0	N/A
hsa-miR-3662	676-682	7mer-1A	-0.01	47	0	0	N/A
hsa-miR-302a-5p	679-685	7mer-1A	-0.01	50	0	0	N/A
hsa-miR-1972	688-694	7mer-m8	-0.19	89	-0.02	0	N/A
hsa-miR-4645-5p	690-696	7mer-1A	-0.24	96	-0.03	0.085	N/A
hsa-miR-4673	690-696	7mer-1A	-0.2	94	-0.03	0.085	N/A
hsa-miR-424-3p	703-709	7mer-m8	-0.19	90	-0.02	0	N/A
hsa-miR-6733-5p	712-718	7mer-m8	-0.24	96	-0.02	0	N/A
hsa-miR-6739-5p	712-718	7mer-m8	-0.23	95	-0.02	0	N/A
hsa-miR-3153	712-718	7mer-m8	-0.15	94	-0.01	0	N/A
hsa-miR-5584-5p	713-719	7mer-m8	-0.08	74	-0.01	0	N/A
hsa-miR-1249-5p	715-721	7mer-m8	-0.26	93	-0.02	0	N/A
hsa-miR-6797-5p	715-721	7mer-m8	-0.24	91	-0.02	0	N/A
hsa-miR-6883-5p	716-722	7mer-m8	-0.32	97	-0.02	0	N/A
hsa-miR-6785-5p	716-722	7mer-m8	-0.34	97	-0.02	0	N/A
hsa-miR-4728-5p	716-722	7mer-m8	-0.34	97	-0.02	0	N/A
hsa-miR-149-3p	716-722	7mer-m8	-0.3	96	-0.02	0	N/A
hsa-miR-4756-5p	717-723	7mer-m8	-0.24	93	-0.02	0.335	N/A
hsa-miR-1321	717-723	7mer-m8	-0.23	91	-0.02	0.335	N/A
hsa-miR-4739	717-723	7mer-m8	-0.23	91	-0.02	0.335	N/A
hsa-miR-4270	718-725	8mer	-0.42	99	-0.03	0	N/A
hsa-miR-6754-5p	718-725	8mer	-0.42	99	-0.03	0	N/A
hsa-miR-4441	718-725	8mer	-0.42	99	-0.03	0	N/A
hsa-miR-211-3p	719-725	7mer-1A	-0.11	89	-0.01	0	N/A

Table SII. The miRNAs sponged by RHPN1-AS1 were predicted by ENCORI Starbase.

miRNAid	miRNA name	Gene name	Chromosome	start	end	clipExpNum	degraExpNum	RBP	merClass
MIMAT0000253	hsa-miR-10a-5p	RHPN1-AS1	chr8	144449489	144449511	1	0	AGO1-4	7mer-m8
MIMAT0000254	hsa-miR-10b-5p	RHPN1-AS1	chr8	144449489	144449512	1	0	AGO1-4	7mer-m8
MIMAT0000764	hsa-miR-339-5p	RHPN1-AS1	chr8	144449490	144449513	1	0	AGO1-4	7mer-m8
MIMAT0022701	hsa-miR-506-5p	RHPN1-AS1	chr8	144449554	144449575	1	0	AGO1-4	8mer
MIMAT0027668	hsa-miR-6884-5p	RHPN1-AS1	chr8	144449560	144449580	1	0	AGO1-4	7mer-m8
MIMAT0002175	hsa-miR-485-5p	RHPN1-AS1	chr8	144449560	144449582	1	0	AGO1-4	7mer-m8
MIMAT0004952	hsa-miR-665	RHPN1-AS1	chr8	144449588	144449607	1	0	AGO1-4	7mer-m8
MIMAT0002175	hsa-miR-485-5p	RHPN1-AS1	chr8	144449598	144449618	1	0	AGO1-4	7mer-m8
MIMAT0027668	hsa-miR-6884-5p	RHPN1-AS1	chr8	144449598	144449624	1	0	AGO1-4	7mer-m8
MIMAT0003180	hsa-miR-487b-3p	RHPN1-AS1	chr8	144449617	144449639	1	0	AGO1-4	7mer-m8
MIMAT0000764	hsa-miR-339-5p	RHPN1-AS1	chr8	144449656	144449676	1	0	AGO1-4	7mer-m8
MIMAT0004952	hsa-miR-665	RHPN1-AS1	chr8	144449671	144449690	1	0	AGO1-4	7mer-m8
MIMAT0000252	hsa-miR-7-5p	RHPN1-AS1	chr8	144449679	144449699	2	0	AGO1-4,AGO2	8mer
MIMAT0004952	hsa-miR-665	RHPN1-AS1	chr8	144449695	144449714	1	0	AGO2	7mer-m8
MIMAT0027571	hsa-miR-6835-3p	RHPN1-AS1	chr8	144450308	144450330	1	0	AGO2	7mer-m8
MIMAT0002833	hsa-miR-520a-5p	RHPN1-AS1	chr8	144450321	144450341	1	0	AGO2	8mer
MIMAT0002838	hsa-miR-525-5p	RHPN1-AS1	chr8	144450321	144450341	1	0	AGO2	8mer
MIMAT0000687	hsa-miR-299-3p	RHPN1-AS1	chr8	144450343	144450365	1	0	AGO2	7mer-m8