Table SI. Fundamental terms for building search keywords.

Key term	Sub term	Combined terms
Ovarian cancer	"ovarian cancer" OR "ovarian neoplasms" OR "ovarian carcinoma" OR "ovarian malignancy"	("ovarian cancer" OR "ovarian neoplasms" OR "ovarian carcinoma" OR "ovarian malignancy") AND ("anti-miRs" OR "anti-miR" OR "anti-miRNA" OR "miR-Mimic" OR "miRs-Mimic" OR "mimic-miRs" OR "miRNA-mimic" OR "miRs antagonist" OR "miR antagonist" OR "miRNA-antagonist" OR "miRs inhibitor" OR "miRNA inhibitor" OR "miR inhibitor" OR "miRs mimics" OR "miRNA mimics" OR "miR mimics" OR "antagomiRs" OR "antagomiRNA" OR "antagomiR" OR "agonist MiRNA" OR "agonist MiRs" OR "agonist MiRs" OR "block MiRs" OR "block MiRNA" OR "block MiRNA")
miRNA	"anti-miRs" OR "anti-miR" OR "anti-miRNA" OR "miR-Mimic" OR "miRs-Mimic" OR "mimic-miRs" OR "miRNA-mimic" OR "miRs antagonist" OR "miR antagonist" OR "miRNA-antagonist" OR "miRs inhibitor" OR "miRNA inhibitor" OR "miR inhibitor" OR "miRs mimics" OR "miRNA mimics" OR "miR mimics" OR "antagomiRs" OR "antagomiRNA" OR "antagomiR" OR "agonist MiRNA" OR "agonist MiRs" OR "agonist MiRs" OR "block MiRs" OR "block MiRNA" OR "block MiRNA"	

miRNA/miR, microRNA.

Table SII. Summary of exclusion reasons from the excluded studies.

Exclusion reason	Count	%
Cancer development and progression	149	67.12
Did not focus on miRNAs	24	10.81
Did not using synthetic miRNAs	4	1.80
Focusing outside of human ovarian cancer	29	13.06
Full text did not available	6	2.70
Retracted	4	1.80
Review or methodological papers	6	2.70

miRNA, microRNA.

Table SIII. Cumulative observed-microRNAs from the eligible studies.

No.	miRNA	Associated diseases
1	let-7b	Melanoma and lung cancer
2	let-7d-3p	Acute promyelocytic leukemia and ovarian cancer (let-7d)
3	let-7i	Ovarian cancer and Alzheimer disease, familial, 1
4	let-7d-5p	Acute promyelocytic leukemia and ovarian cancer (let-7d)
5	miR-106a	T-cell acute lymphoblastic leukemia and glioma susceptibility 1
6	miR-1246	-
7	miR-125b	Pancreatitis, hereditary and pancreatic cancer (miR-125b-1)
8	miR-125b	Down syndrome and pancreatitis, hereditary (miR-125b-2)
9	miR-1271	Holoprosencephaly 5
10	miR-130a	Lung cancer and Miyoshi muscular dystrophy 1
11	miR-133b	Tongue squamous cell carcinoma and Parkinson disease, late-onset
12	miR-137	Oral squamous cell carcinoma and glioblastoma
13	miR-138-5p	Thyroid cancer, nonmedullary, 1 and oral squamous cell carcinoma (miR-138-1)
14	miR-138-5p	Pituitary adenoma and thyroid cancer, nonmedullary, 1 (miR-138-2)
15	miR-139-5p	Leiomyoma, uterine and follicular lymphoma (miR-139)
16	miR-141	Cholangiocarcinoma and renal cell carcinoma, nonpapillary
17	miR-142-5p	Brain cancer and multiple sclerosis (miR-142)
18	miR-145	Vascular disease and Burkitt lymphoma (miR-145)
19	miR-149-3p	Pituitary adenoma and follicular lymphoma (miR-149)
20	miR-155-5p	Diffuse large b-cell lymphoma and pancreatic ductal adenocarcinoma (miR-155)
21	miR-182	Glioblastoma and melanoma
22	miR-185	Lung cancer and kidney cancer
23	miR-186	Lymphoma, Hodgkin, classic and multiple sclerosis
24	miR-194-5p	Coffin-siris syndrome 1 and branchiootic syndrome (miR-194-2)
25	miR-199a	Cell type cancer and gastrointestinal system disease (miR-199a-1)
		Pancreatitis, hereditary and oral squamous cell carcinoma (miR-199a-2)
26	miR-200c	Renal cell carcinoma, nonpapillary and endometrial cancer (miR-200c)
27	miR-204	Retinal dystrophy and iris coloboma with or without congenital cataract and cholangiocarcinoma
28	miR-21	Glioblastoma and oral squamous cell carcinoma
29	miR-21-3p	-
30	miR-211	Melanoma and ovarian cancer
31	miR-214	Cervical cancer and ovarian cancer
32	miR-23a	Hepatocellular carcinoma and heart disease
33	miR-27a	Leukemia and hepatocellular carcinoma
34	miR-299-3p	Primary biliary cholangitis and Miyoshi muscular dystrophy 1 (miR-299)
35	miR-302a	Teratocarcinoma and oral squamous cell carcinoma
36	miR-302b	Oral squamous cell carcinoma and embryonal carcinoma
37	miR-302c	Non-gestational choriocarcinoma and 45,x/46,xy mixed gonadal dysgenesis
38	miR-302d	Testicular germ cell tumor and leukemia, acute myeloid.
39	miR-30c-2*	Scrotum squamous cell carcinoma and scrotal carcinoma
40	miR-31	Oral cancer and ovarian cancer
41	miR-324-5p	Medulloblastoma and primary biliary cholangitis (miR-324)
42	miR-34a	Retinoblastoma and neuroblastoma
43	miR-374a	Lymphoma, Hodgkin, classic and squamous cell carcinoma, head and neck
44	miR-375	Lung cancer susceptibility 3 and diabetes mellitus
45	miR-376c	Ovarian cancer and facioscapulohumeral muscular dystrophy 1
46	miR-383-5p	Pancreatitis, hereditary and embryonal testis carcinoma (miR-383)
47	miR-424-3p	Leukemia, chronic lymphocytic and intrahepatic cholangiocarcinoma (miR-424)
48	miR-484	Autism spectrum disorder and systemic lupus erythematosus
49	miR-489	Hypopharynx cancer and kidney cancer
50	miR-503-5p	Adrenal cortical carcinoma and retinoblastoma (miR-503)
51	miR-532-3p	Melanoma and kidney cancer (miR-532)
52	miR-551a	Ovarian cancer and non-syndromic x-linked intellectual disability 21

53	miR-591	-
54	miR-622	Systemic lupus erythematosus and ovarian cancer
55	miR-630	-
56	miR-654-5p	Systemic lupus erythematosus and maxillary sinus cancer (miR-654)
57	miR-7	Pituitary adenoma and spermatogenic failure, x-linked, 1 (miR-7-1)
		Kidney cancer (miR-7-2)
		Pituitary adenoma and pancreatitis, hereditary (miR-7-3)
58	miR-708	Leukemia, acute lymphoblastic and pleuropulmonary blastoma
59	miR-766-5p	Dental pulp disease and pulpitis (miR-766)
60	miR-873	Glycine n-methyltransferase deficiency and lung cancer (miR-873)
61	miR-9	Oral squamous cell carcinoma and schizophrenia (miR-9-1)
		Oral squamous cell carcinoma and glioblastoma (miR-9-2)
		Breast cancer and pituitary adenoma (miR-9-3)
62	miR-93	Myeloma, multiple and hepatocellular carcinoma
63	miR-98-5p	Squamous cell carcinoma, head and neck and Niemann-Pick disease (miR-98)
64	miR-106a	T-cell acute lymphoblastic leukemia and glioma susceptibility 1
65	miR-210-3p	Cardiovascular system disease and head and neck cancer (miR-210)
66	miR-29b	Alzheimer disease, familial, 1 and aortic disease (miR-29b-1)
		Rhabdomyosarcoma and leukemia, chronic lymphocytic (miR-29b-2)

’-‘ indicates that the corresponding miRNA is not associated with any disease according to the database information at the time of extraction. The associated diseases for the corresponding miRNA are based on the gene mapping from The Human Gene database. miRNAs in brackets indicate miRNAs from the same family as the relevant miRNA, as identified on the Human Gene Database. The data was gathered in November 2023. miRNA/miR, microRNA.

Table SIV. Observed-miRNAs that were used to understand the treatment outcomes.

No.	PMID	miRNA of interest	anti-miR	mimic-miR	Therapy	Key findings related to miRNAs regulation
1	35371298	let-7b	x	let-7b mimics[a]	Paclitaxel	miRNA was downregulated in patients with therapy resistant ovarian cancer
2	25556276	let-7i	anti-let-7i	x	Propofol	Downregulation of the miRNA was associated with therapy resistance
3	30816441	let-7d-5p	let-7d-5p inhibitors[a]	let-7d-5p mimics	Cisplatin	Downregulation of the miRNA was associated with therapy resistance
4	24348845	miR-106a	miR-106a inhibitors[a]	miR-106a mimics	Cisplatin	Upregulation of the miRNA was associated with therapy resistance
5	34476500	miR-106a	miR-106a inhibitors	miR-106a mimics	Cisplatin	Upregulated miRNA improved therapy sensitivity
6	23807165	miR-106a; miR-591	miR-106a inhibitor[a]; miR-591 inhibitor[a]	miR-106a mimic; miR-591 mimics	Paclitaxel	Upregulation of miR-106a and downregulation of miR-591 was associated with therapy resistance
7	30487062	miR-1246	anti-miR-1246[a]	miR-1246 mimic	Paclitaxel	Downregulation of the miRNA improved therapy sensitivity
8	33836345	miR-125b	miR-125b inhibitors	miR-125b mimics	Cisplatin	miRNA was notably downregulated in patients with chemoresistant ovarian cancer
9	31411791	miR-1271	miR-1271 inhibitors	miR-1271 mimics[a]	Cisplatin	Upregulation of the miRNA improved therapy sensitivity
10	26396496	miR-133b	anti miR-133b	x	Cisplatin and paclitaxel	Downregulated miRNA was associated with therapy resistance
11	32349783	miR-138-5p	miR-138-5p inhibitors	miR-138-5p mimics[a]	Cisplatin	miRNA was associated with therapy resistance
12	30439707	miR-139-5p	anti miR-139-5p	miR-139-5p mimics[a]	Cisplatin	Upregulation of the miRNA improved therapy sensitivity
13	29719173	miR-139-5p	miR-139-5p inhibitor	miR-139-5p mimics	Cisplatin	Upregulated miRNA improved therapy sensitivity
14	34163033	miR-142-5p	miR-142-5p inhibitors	miR-142-5p mimics[a]	Paclitaxel	Downregulated miRNA was associated with a worse overall survival of patients with ovarian cancer
15	25937243	miR-145	miR-145 inhibitors	x	Quercetin	Upregulation of the miRNA improved therapy sensitivity
16	34798882	miR-149-3p	miR-149-3p antagomiR[a]	miR-149-3p mimics	Cisplatin	Upregulation of the miRNA improved therapy sensitivity
17	23296900	miR-182	x	miR-182 mimics	Cisplatin and paclitaxel	Upregulation of the miRNA was associated with therapy resistance
18	33818283	miR-185	miR-185 antisense	miR-185 mimics[a]	Dexmedetomidine	Upregulation of the miRNA improved therapy sensitivity
19	36617466	miR-194-5p	miR-194-5p inhibitors	miR-194-5p mimics[a]	Cisplatin	miRNA was downregulated in patients with therapy resistant ovarian cancer
20	24137412	miR-199a	miR-199a inhibitor	miR-199a mimics[a]	Cisplatin	Downregulation of the miRNA was associated with therapy resistance
21	31898520	miR-200c	x	miR-200c mimics[a]	Olaparib	Upregulation of the miRNA was associated with therapy resistance
22	26025631	miR-200c; miR-141	miR-200c inhibitors; miR-141 inhibitors	miR-200c mimics[a]; miR-141 mimics[a]	Carboplatin and paclitaxel	miRNA may serve a role as a tumor suppressor
23	25845681	miR-21	miR-21 inhibitors[a]	miR-21 mimics	Icariin	Upregulation of the miRNA was associated with therapy resistance
24	32327705		anti-miR-21[a]	pre-miR-21	Cisplatin	
25	24472409		anti miR-21	x	Cisplatin	Downregulated miRNA improved therapy sensitivity
26	28559385	miR-214	miR-214 agomiR; anti-miR-214	x	Radioresistance	Upregulation of the miRNA was associated with therapy resistance
27	18199536		antisense miR-214	sense miR-214	Cisplatin	miR-214 may be an antiapoptotic factor
28	20624637	miR-27a	miR-27a inhibitors[a]	miR-27a mimic	Paclitaxel	Upregulation of the miRNA was associated with therapy resistance
29	32190895		mir-27a inhibitors[a]	mir-27a mimics	Paclitaxel	Upregulation of the miRNA was associated with therapy resistance
30	28726915	miR-299-3p	x	miR-299-3p mimics	Oleuropein	Upregulation of the miRNA improved therapy sensitivity
31	32835657	miR-302a; miR-302b; miR-302c; miR-302d	miR-302a inhibitors; miR-302b inhibitors; miR-302c inhibitors; miR-302d inhibitors	miR-302a mimics[a]; miR-302b mimics[a]; miR-302c mimics; miR-302d mimics[a]	Cisplatin	Upregulation of the miRNA improved therapy sensitivity
32	22024689	miR-30c-2*	antagomiR-30c-2*	x	Cisplatin and paclitaxel	Downregulation of the miRNA was associated with therapy resistance
33	26386726	miR-31	x	mimic miR-31[a]	Cisplatin	Upregulation of the miRNA was associated with therapy resistance
34	29561664	miR-34a	miR-34a inhibitors	miR-34a mimics[a]	Cisplatin	Upregulation of the miRNA improves therapy sensitivity
35	26043084	miR-374a; miR-130a	miR-374a inhibitors; miR-130a inhibitors	miR-374a mimics[a]; miR-130a mimics[a]	Cisplatin	Downregulated miRNAs were associated with therapy resistance

36	27129171	miR-375	exogenous miR-375 inhibitor	x	*Emblica officinalis*/Amla extract	miRNA may be an oncogenic miRNA
37	30622051	miR-503-5p	miR-503-5p inhibitors	miR-503-5p mimics[a]	Paclitaxel	Upregulation of the miRNA improved therapy sensitivity
38	28345465	miR-551a	miR-551a agomiR; anti-miR-551a	x	Demethoxycurcumin	Upregulation of the miRNA improved therapy sensitivity
39	26774475	miR-622	antagomiR 622	mimic miR-622[a]	Carboplatin and cisplatin	Upregulated miRNAs were associated with therapy resistance
40	32016960	miR-654-5p	anti-miR-654-5p	miR-654-5p mimics	Paclitaxel	miRNA may be an oncomiR
41	29158814	miR-7	antagomiR-7[a]	miR-7 mimics	Cisplatin	Upregulated miRNAs were associated with therapy resistance
42	34425872	miR-766-5p	x	miR-766-5p mimics	Carboplatin	Upregulation of the miRNA improved therapy sensitivity
43	24168967	miR-9	miR-9 agomiR	miR-9 mimics[a]	Cisplatin	Upregulation of the miRNA improved therapy sensitivity
44	25846738		anti-miR-9	x	Cisplatin	Upregulation of the miRNA improved therapy sensitivity
45	26087719	miR-93	miR-93 inhibitors[a]	miR-93 mimics	Berberine	Upregulated miRNAs were associated with therapy resistance
46	31128026		miR-93 inhibitors[a]	miR-93 mimics	Cisplatin	Study aimed to understand how L-Tetrahydropalmatine could improve therapy outcome via the miRNA
47	30957179	miR-210-3p	miR-210-3p inhibitors	miR-210-3p mimics[a]	Cisplatin	miRNA may be an anti-oncogenic miR
48	26099492	miR-29b	anti miR-29b	x	Oxymatrine	Upregulation of the miRNA improved therapy sensitivity
49	29452092	miR-630	miR-630 inhibitors	x	Paclitaxel	Downregulated miRNA improved therapy sensitivity
50	30399596	miR-383-5p	x	miR-383-5p mimics	Paclitaxel	Upregulated miRNA improved therapy sensitivity
51	31889899	miR-98-5p	miR-98-5p inhibitors	miR-98-5p mimics	Cisplatin	Upregulated miRNA reduced therapy sensitivity
52	21823019	miR-125b	anti miR-125b	miR-125b mimics	Cisplatin	Upregulated miRNA reduced therapy sensitivity
53	30166592	miR-137	miR-137 inhibitors	miR-137 mimics	Cisplatin	Upregulated miRNA improved therapy sensitivity
54	31235732	miR-211	miR-211 inhibitor	miR-211 mimics	Carboplatin	Upregulated miRNA improved therapy sensitivity
55	24686007	miR-489	miR-489 antisense	miR-489 mimics	Cisplatin	Upregulated miRNA improved therapy sensitivity
56	28388577	miR-204	x	miR-204 mimics	Cisplatin	Upregulated miRNA improved therapy sensitivity
57	25579119	miR-21-3p	x	miR-21-3p mimics	Cisplatin	miRNA may be an oncomiR
58	28685895	miR-708	anti miR-708	miR-708 mimics	Cisplatin	Upregulated miRNA improved therapy sensitivity

'x' denotes the corresponding study did not utilize the specified synthetic miRNA (either anti-miR or mimic-miR). [a]Synthetic miRs that could possibly improve therapy sensitivity, based on the corresponding study. However, it was not the main focus of the study to prove the causality of improvement on the therapy outcomes by using the mimic- or anti-miR. miRNA/miR, microRNA