

Table S1. PheWAS data of studied SNPs in microRNA biogenesis pathway genes

Feature	Chr	RSID	Gene	Allele	Position	Phenotype	β	SE(β)	p-value
Urological cancers	1	rs595055	AGO1	T	36380133	Malignant neoplasm of bladder	-0.13	0.05	6.35x10 ⁻³
						Cancer of bladder	-0.11	0.04	9.50x10 ⁻³
	17	rs2740348	GEMIN4	G	649935	Cancer of bladder	0.07	0.04	0.06
	17	rs2740351	FAM57A (GEMIN4)	G	643426	Malignant neoplasm of other urinary organs	0.25	0.12	0.04
	17	rs7813	GEMIN4	G	648186	Malignant neoplasm of other urinary organs	0.26	0.13	0.04
Other malignant neoplasms with the most significant p-value	1	rs197412	DDX20	C	112308953	Cancer of brain and nervous system	0.18	0.06	3.96x10 ⁻³
						Benign neoplasm of other female genital organs Secondary malignant neoplasm	0.27	0.10	6.60x10 ⁻³
						Secondary malignant neoplasm	-0.04	0.01	9.37x10 ⁻³
	1	rs11584657	FAM212B	T	112296374	Secondary malignant neoplasm	-0.06	0.02	6.30x10 ⁻³
	5	rs4867329	DROSHA	C	31435627	Bone cancer	0.39	0.13	2.34x10 ⁻³
						Multiple myeloma	0.18	0.06	3.43x10 ⁻³
						Benign neoplasm of other endocrine glands and related structures	-0.13	0.05	6.56x10 ⁻³
	6	rs2257082	XPO5	A	43492578	Malignant neoplasms of ovary	0.12	0.04	3.82x10 ⁻⁴
						Malignant neoplasm of ovary and other uterine adnexa	0.12	0.04	4.66x10 ⁻⁴
						Cervical cancer	0.12	0.04	2.54x10 ⁻³
						Cervical cancer and dysplasia	0.08	0.03	4.14x10 ⁻³
						Cancer of other female genital organs	0.09	0.03	7.32x10 ⁻³
	8	rs3864659	AGO2	C	141555862	Cancer of other endocrine glands	-0.61	0.23	8.82x10 ⁻³
	22	rs417309	DGCR8	A	20098544	Malignant neoplasm of rectum, rectosigmoid junction, and anus	0.18	0.05	1.01x10 ⁻³
						Second malignancy of brain/spine	0.23	0.09	7.57x10 ⁻³