

A novel method for identifying potential disease-related miRNAs via disease-miRNA-target heterogeneous network

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Supplementary Information

Supplementary Figure 1. The ROC and PR curves for our method on independent dataset.

Supplementary Figure 2. The average AUCs and recalls across all the disease at different top k cutoffs on independent dataset.

Supplementary Figure 3. The detailed ROC curves of our method, RLSMDA, HGIMDA, RWRMDA and Chen's method for 15 diseases.

Supplementary Figure 4. The minimum, lower quartile, median, upper quartile, maximum expression and outliers' data of three methods for predicting 15 common diseases.

Supplementary Table 1. The values of *Sn*, *Acc*, *Pre* and *MCC* of our method at two stringency levels (*Sp*=99.0% and *Sp*=95.0%) on independent dataset.

Supplementary Table 2. The top 30 breast neoplasms-related miRNA candidates.

Supplementary Table 3. The top 30 predictive candidates for lung cancer.

Supplementary Table 4. All potential disease-related miRNA candidates and the relevance rank scores by our method.

Figure

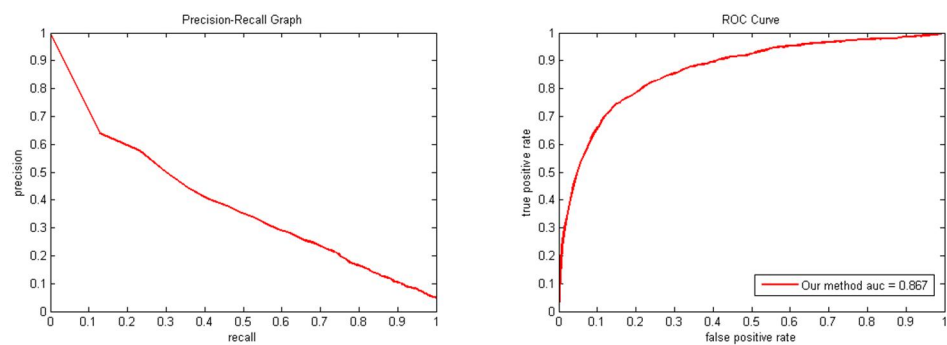


Fig. S1. The ROC and PR curves for our method on independent dataset.

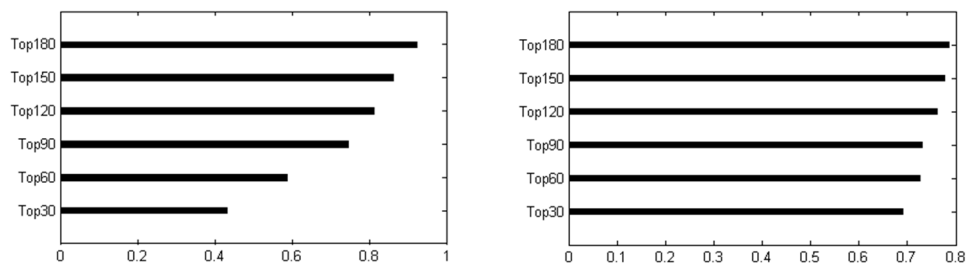


Fig. S2. The average AUCs and recalls across all the disease at different top k cutoffs on independent dataset.

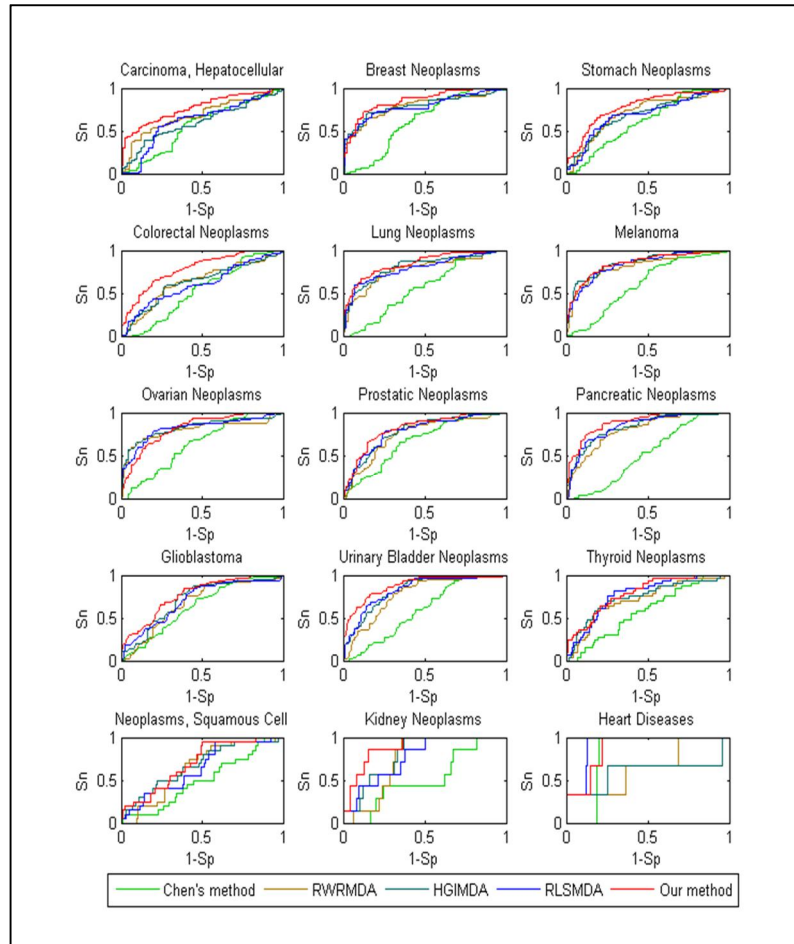


Fig. S3. The detailed ROC curves of our method, RLSMDA, HGIMDA, RWRMDA and Chen's method for 15 diseases.

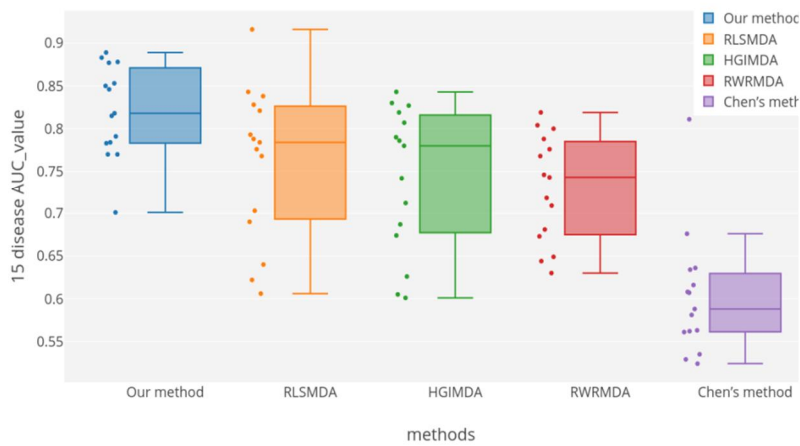


Fig. S4. The minimum, lower quartile, median, upper quartile, maximum expression and outliers' data of three methods for predicting 15 common diseases.

Table

Table S1 The values of *Sn*, *Acc*, *Pre* and *MCC* of our method at two stringency levels (*Sp*=99.0% and *Sp*=95.0%) on independent dataset.

		<i>Sn</i>	<i>Acc</i>	<i>Pre</i>	<i>MCC</i>
Our method	<i>Sp</i> =99.0%	24.0%	95.3%	55.8%	34.5%
	<i>Sp</i> =95.0%	50.7%	92.8%	34.8%	38.3%

Table S2 The top 30 of Breast neoplasms-related candidates.

Rank	MiRNA	Evidence	Rank	MiRNA	Evidence
1	hsa-mir-142	miRCancer,PhenomiR2.0, dbDEMC2.0	16	hsa-mir-449a	dbDEMC2.0
2	hsa-mir-150	miRCancer,PhenomiR2.0, dbDEMC2.0	17	hsa-mir-186	PhenomiR2.0,dbDEMC2.0
3	hsa-mir-106a	PhenomiR2.0,dbDEMC2.0	18	hsa-mir-99b	PhenomiR2.0
4	hsa-mir-15b	PhenomiR2.0,dbDEMC2.0	19	hsa-mir-424	PhenomiR2.0,dbDEMC2.0
5	hsa-mir-192	miRCancer,PhenomiR2.0, dbDEMC2.0	20	hsa-mir-542	PMID: 22051041
6	hsa-mir-130a	PhenomiR2.0,dbDEMC2.0	21	hsa-mir-28	PhenomiR2.0,dbDEMC2.0
7	hsa-mir-99a	PhenomiR2.0,dbDEMC2.0	22	hsa-mir-370	PhenomiR2.0
8	hsa-mir-372	miRCancer,PhenomiR2.0, dbDEMC2.0	23	hsa-mir-491	PhenomiR2.0,dbDEMC2.0
9	hsa-mir-30e	dbDEMC2.0	24	hsa-mir-449b	dbDEMC2.0
10	hsa-mir-98	miRCancer,miR2Disease, dbDEMC2.0	25	hsa-mir-211	miRCancer,dbDEMC2.0
11	hsa-mir-196b	PhenomiR2.0,dbDEMC2.0	26	hsa-mir-494	miRCancer,PhenomiR2.0, dbDEMC2.0
12	hsa-mir-130b	PhenomiR2.0,dbDEMC2.0	27	hsa-mir-520e	miRCancer,PhenomiR2.0, dbDEMC2.0
13	hsa-mir-144	miRCancer,PhenomiR2.0, dbDEMC2.0	28	hsa-mir-32	miRCancer, dbDEMC2.0
14	hsa-mir-92b	PhenomiR2.0,dbDEMC2.0	29	hsa-mir-185	miRCancer,PhenomiR2.0, dbDEMC2.0
15	hsa-mir-212	PhenomiR2.0,dbDEMC2.0	30	hsa-mir-181d	PhenomiR2.0,dbDEMC2.0

Table S3 The top 30 of lung cancer-related candidates.

Rank	MiRNA	Evidence	Rank	MiRNA	Evidence
1	hsa-mir-15a	miRCancer,PhenomiR2.0, dbDEMC2.0	16	hsa-mir-196b	dbDEMC2.0
2	hsa-mir-106b	PhenomiR2.0, dbDEMC2.0	17	hsa-mir-10a	PhenomiR2.0,dbDEMC2.0
3	hsa-mir-195	miRCancer,PhenomiR2.0,dbDEMC2.0	18	hsa-mir-296	PhenomiR2.0
4	hsa-mir-141	PhenomiR2.0,dbDEMC2.0	19	hsa-mir-152	PhenomiR2.0
5	hsa-mir-15b	miRCancer,PhenomiR2.0, dbDEMC2.0	20	hsa-mir-92b	PhenomiR2.0,dbDEMC2.0
6	hsa-mir-122	PhenomiR2.0,dbDEMC2.0	21	hsa-mir-181d	PhenomiR2.0,dbDEMC2.0
7	hsa-mir-429	miRCancer,PhenomiR2.0,dbDEMC2.0	22	hsa-mir-367	PhenomiR2.0,dbDEMC2.0
8	hsa-mir-23b	dbDEMC2.0	23	hsa-mir-302a	PhenomiR2.0,dbDEMC2.0
9	hsa-mir-99a	PhenomiR2.0,dbDEMC2.0	24	hsa-mir-215	PhenomiR2.0
10	hsa-mir-193b	miR2Disease, dbDEMC2.0	25	hsa-mir-144	miRCancer,dbDEMC2.0
11	hsa-mir-130a	PhenomiR2.0,dbDEMC2.0	26	hsa-mir-302b	miRCancer
12	hsa-mir-20b	dbDEMC2.0	27	hsa-mir-373	dbDEMC2.0
13	hsa-mir-204	miRCancer, dbDEMC2.0	28	hsa-mir-423	unconfirmed
14	hsa-mir-342	PhenomiR2.0,dbDEMC2.0	29	hsa-mir-139	dbDEMC2.0
15	hsa-mir-149	miRCancer,PhenomiR2.0,dbDEMC2.0	30	hsa-mir-130b	miRCancer, PhenomiR2.0,dbDEMC2.0

Notably, Supplementary Table S3 is illustrated in Supplementary Table S4.xls.