# Self-supervised contrastive learning on attribute and topology graphs for predicting relationships among lncRNAs, miRNAs and diseases

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**Supplementary Table 1 (ST1). Hyper-parameters on LDA, MDA and LMI prediction tasks under dataset 1 and dataset 2.**

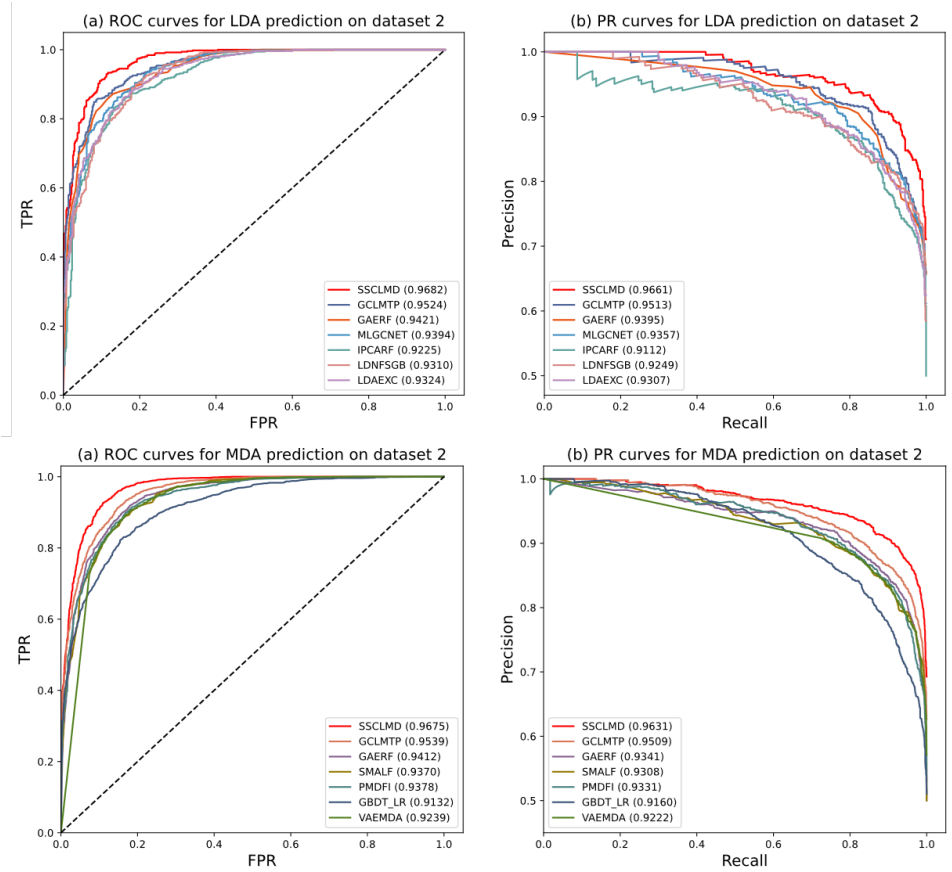
| | Tasks | $k$ | $\alpha$ | $\theta$ | Nhid1 | Nhid2 | $\lambda$ | Epoch | $lr$ | Dropout |
|---|---|---|---|---|---|---|---|---|---|---|
| Dataset 1 | LDA | 22 | 0.9 | 0.6 | 256 | 128 | 1 | 80 | 0.0005 | 0.5 |
| | MDA | 26 | 0.9 | 0.5 | 512 | 256 | 0.1 | 80 | 0.0005 | 0.5 |
| | LMI | 30 | 0.5 | 0.5 | 512 | 256 | 0.1 | 80 | 0.0005 | 0.5 |
| Dataset 1 | LDA | 18 | 0.9 | 0.5 | 256 | 128 | 1 | 80 | 0.0005 | 0.5 |
| | MDA | 26 | 0.9 | 0.7 | 512 | 256 | 0.1 | 80 | 0.0005 | 0.5 |
| | LMI | 34 | 0.5 | 0.5 | 512 | 256 | 1 | 80 | 0.0005 | 0.5 |

**Supplementary Table 2 (ST2).** The top 10 predicted BC-related lncRNA and miRNA candidates on dataset 2.

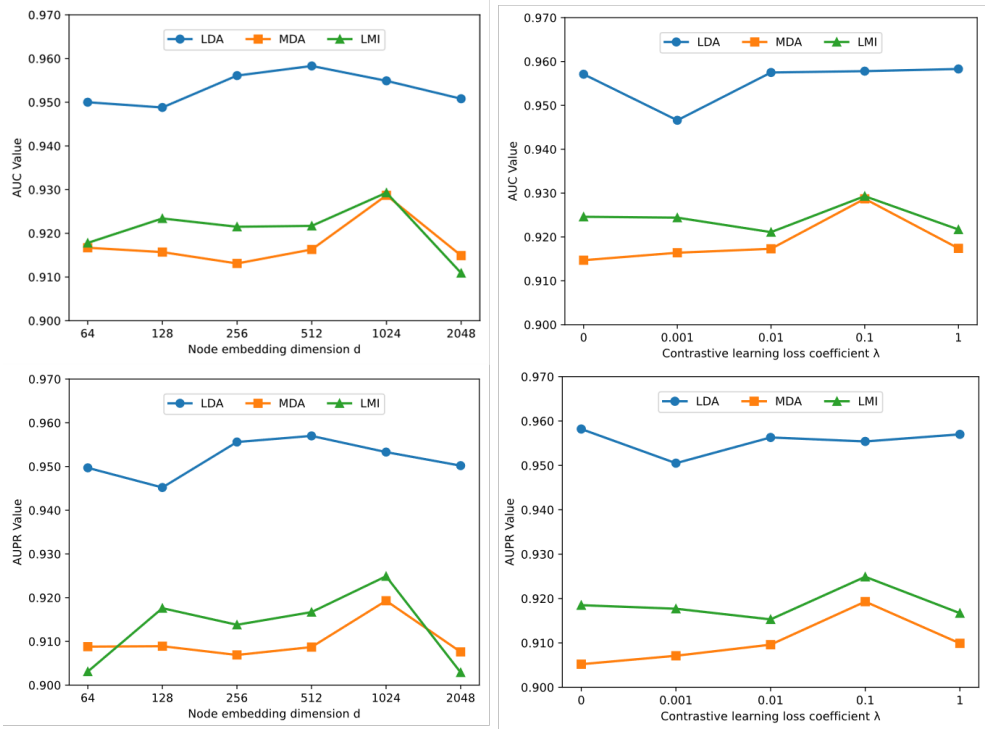
| Rank | LncRNA | Evidence | Rank | MiRNA | Evidence |
|---|---|---|---|---|---|
| 1 | MIR17HG | PMID: 36943627 | 1 | hsa-mir-150 | HMDD v4.0, dbDEMC v3.0 |
| 2 | BANCR | LncRNADisease v3.0, Lnc2Cancer v3.0 | 2 | hsa-mir-15b | HMDD v4.0, dbDEMC v3.0 |
| 3 | HULC | LncRNADisease v3.0, Lnc2Cancer v3.0 | 3 | hsa-mir-142 | HMDD v4.0, dbDEMC v3.0 |
| 4 | TUG1 | LncRNADisease v3.0, Lnc2Cancer v3.0 | 4 | hsa-mir-192 | HMDD v4.0, dbDEMC v3.0 |
| 5 | WT1-AS | LncRNADisease v3.0 | 5 | hsa-mir-181c | HMDD v4.0, dbDEMC v3.0 |
| 6 | MIR155HG | Unconfirmed | 6 | hsa-mir-144 | HMDD v4.0, dbDEMC v3.0 |
| 7 | TUSC7 | LncRNADisease v3.0 | 7 | hsa-mir-181d | HMDD v4.0, dbDEMC v3.0 |
| 8 | DLEU2 | Unconfirmed | 8 | hsa-mir-106a | HMDD v4.0, dbDEMC v3.0 |
| 9 | GHET1 | LncRNADisease v3.0, Lnc2Cancer v3.0 | 9 | hsa-mir-378a | HMDD v4.0, dbDEMC v3.0 |
| 10 | LINC01133 | LncRNADisease v3.0, Lnc2Cancer v3.0 | 10 | hsa-mir-424 | HMDD v4.0, dbDEMC v3.0 |

**Supplementary Table 3 (ST3).** The top 10 predicted BC-related lncRNAs and miRNA candidates on dataset 1.

| Rank | LncRNA | Evidence | Rank | MiRNA | Evidence |
|---|---|---|---|---|---|
| 1 | FER1L4 | PMID: 31332783 | 1 | hsa-mir-211 | HMDD v4.0 dbDEMC v3.0 |
| 2 | MIR4435-2HG | PMID: 36105009 | 2 | hsa-mir-186 | HMDD v4.0 dbDEMC v3.0 |
| 3 | FTX | Unconfirmed | 3 | hsa-mir-28 | HMDD v4.0 dbDEMC v3.0 |
| 4 | MIR100HG | PMID: 33088216 | 4 | hsa-mir-19b-2 | Unconfirmed |
| 5 | LINC-PINT | PMID: 32632453 | 5 | hsa-mir-181d | HMDD v4.0 dbDEMC v3.0 |
| 6 | TUSC7 | PMID: 35296964 | 6 | hsa-mir-454 | HMDD v4.0 dbDEMC v3.0 |
| 7 | LINC00261 | PMID: 33274565 | 7 | hsa-mir-216a | HMDD v4.0 dbDEMC v3.0 |
| 8 | HNF1A-AS1 | PMID: 32319789 | 8 | hsa-mir-136 | HMDD v4.0 dbDEMC v3.0 |
| 9 | MIR17HG | PMID: 36943627 | 9 | hsa-mir-181a-1 | Unconfirmed |
| 10 | DGCR5 | PMID: 32521856 | 10 | hsa-mir-138-2 | Unconfirmed |




**Supplementary Figure 1 (SF1).** ROC and PR curves of SSCLMD and other baseline methods for LDA and MDA prediction on dataset 2.




**Supplementary Figure 2 (SF2).** Parameter sensitivity analysis of node embedding dimensions $d$, and contrastive learning loss coefficient $\lambda$ on dataset 1.