| | ARI ATAC | ARI level 1 ATAC | AMI ATAC | AMI level 1 ATAC | graph cLISI ATAC | graph cLISI level 1 ATAC | isolated labels ASW ATAC | isolated labels ASW level 1 ATAC | ARI RNA | ARI level 1 RNA | AMI RNA | AMI level 1 RNA | graph cLISI RNA | graph cLISI level 1 RNA | isolated labels ASW RNA | isolated labels ASW level 1 RNA | ARI Both | ARI level 1 Both | AMI Both | AMI level 1 Both | graph cLISI Both | graph cLISI level 1 Both | isolated labels ASW Both | isolated labels ASW level 1 Both |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cobolt | 0.42 | 0.48 | 0.59 | 0.60 | 0.95 | 0.95 | 0.45 | 0.58 | 0.31 | 0.35 | 0.55 | 0.56 | 0.95 | 0.95 | 0.37 | 0.55 | 0.24 | 0.27 | 0.48 | 0.50 | 0.92 | 0.91 | 0.29 | 0.50 |
| DCCA | 0.46 | 0.42 | 0.67 | 0.63 | 0.97 | 0.98 | 0.54 | 0.58 | 0.32 | 0.38 | 0.52 | 0.55 | 0.94 | 0.93 | 0.58 | 0.60 | 0.46 | 0.49 | 0.60 | 0.61 | 0.95 | 0.93 | 0.58 | 0.53 |
| MOFA+ | 0.40 | 0.40 | 0.62 | 0.60 | 0.96 | 0.96 | 0.57 | 0.62 | 0.41 | 0.43 | 0.63 | 0.63 | 0.97 | 0.97 | 0.54 | 0.59 | 0.26 | 0.30 | 0.48 | 0.50 | 0.92 | 0.89 | 0.52 | 0.63 |
| Multigrate | 0.58 | 0.50 | 0.72 | 0.67 | 0.98 | 0.98 | 0.46 | 0.49 | 0.37 | 0.44 | 0.57 | 0.59 | 0.94 | 0.93 | 0.45 | 0.48 | 0.40 | 0.49 | 0.53 | 0.57 | 0.91 | 0.87 | 0.41 | 0.48 |
| MultiVI | 0.32 | 0.33 | 0.55 | 0.55 | 0.95 | 0.94 | 0.41 | 0.54 | 0.23 | 0.23 | 0.48 | 0.48 | 0.93 | 0.88 | 0.31 | 0.55 | 0.18 | 0.18 | 0.34 | 0.35 | 0.86 | 0.78 | 0.36 | 0.48 |
| scAI | 0.49 | 0.47 | 0.70 | 0.67 | 0.98 | 0.98 | 0.67 | 0.56 | 0.18 | 0.22 | 0.31 | 0.33 | 0.88 | 0.82 | 0.58 | 0.55 | 0.11 | 0.13 | 0.28 | 0.28 | 0.88 | 0.81 | 0.59 | 0.53 |
| scDEC | 0.36 | 0.42 | 0.60 | 0.61 | 0.96 | 0.96 | 0.64 | 0.45 | 0.36 | 0.41 | 0.51 | 0.53 | 0.94 | 0.91 | 0.44 | 0.48 | 0.25 | 0.31 | 0.41 | 0.44 | 0.90 | 0.84 | 0.45 | 0.49 |
| scMDC | 0.60 | 0.59 | 0.72 | 0.70 | 0.98 | 0.98 | 0.39 | 0.49 | 0.48 | 0.54 | 0.65 | 0.66 | 0.96 | 0.95 | 0.14 | 0.55 | 0.43 | 0.52 | 0.58 | 0.62 | 0.93 | 0.90 | 0.49 | 0.63 |
| scMVAE | 0.45 | 0.50 | 0.65 | 0.66 | 0.96 | 0.95 | 0.68 | 0.61 | 0.35 | 0.40 | 0.53 | 0.56 | 0.92 | 0.89 | 0.61 | 0.59 | 0.33 | 0.45 | 0.50 | 0.55 | 0.91 | 0.86 | 0.61 | 0.58 |
| scMVP | 0.52 | 0.53 | 0.72 | 0.70 | 0.98 | 0.99 | 0.62 | 0.50 | 0.51 | 0.62 | 0.69 | 0.72 | 0.95 | 0.95 | 0.48 | 0.50 | 0.47 | 0.61 | 0.63 | 0.69 | 0.93 | 0.89 | 0.48 | 0.47 |
| Seurat v4 WNN | 0.55 | 0.47 | 0.71 | 0.66 | 0.98 | 0.99 | NA | NA | 0.59 | 0.53 | 0.73 | 0.70 | 0.98 | 0.99 | NA | NA | 0.51 | 0.53 | 0.63 | 0.62 | 0.96 | 0.95 | NA | NA |
| uniPort | 0.39 | 0.43 | 0.57 | 0.59 | 0.95 | 0.93 | 0.49 | 0.48 | 0.00 | 0.00 | 0.00 | 0.00 | 0.68 | 0.44 | 0.40 | 0.44 | 0.00 | 0.01 | 0.00 | 0.01 | 0.69 | 0.44 | 0.42 | 0.43 |

metric_grp
- Both modalities downsample
- scATAC downsample
- scRNA downsample