

Table 1. Application of OmiHier on diverse multi-omics datasets.

Dataset	Data type	Base classifier	Hierarchy	AUC	Accuracy	F1	Precision	Recall
BRCA	Breast cancer genomic and epigenomic data	Lasso-Logistic	OmiHier	0.980	0.883	0.893	0.883	0.917
			direct*	0.935	0.714	0.725	0.714	0.752
GC	Gastric cancer genomic and epigenomic data	Lasso-Logistic	OmiHier	0.998	0.955	0.957	0.955	0.963
			direct	0.997	0.950	0.952	0.950	0.961
Faecal	Faecal microbiomes (in K-tuple/30-mer feature representation)	LightGBM	OmiHier (direct)	0.857	0.677	0.667	0.677	0.670
HCC	Liver cancer (HCC) spatial transcriptome data	LightGBM	OmiHier	0.978	0.960	0.958	0.960	0.960
			direct	0.952	0.964	0.963	0.964	0.964
NCI-RNA	Single-cell RNA-seq in gastric cancer line NCI-N87	SVM	OmiHier	0.999	0.979	0.98	0.980	0.980
			direct	0.998	0.982	0.971	0.972	0.973
Lymphoid	Single-cell RNA-seq of lymphoid cells	SVM	OmiHier	0.982	0.887	0.886	0.887	0.886
			direct	0.978	0.882	0.882	0.882	0.882

* *direct* denotes one-step multi-class classification.