

Graphical Abstract

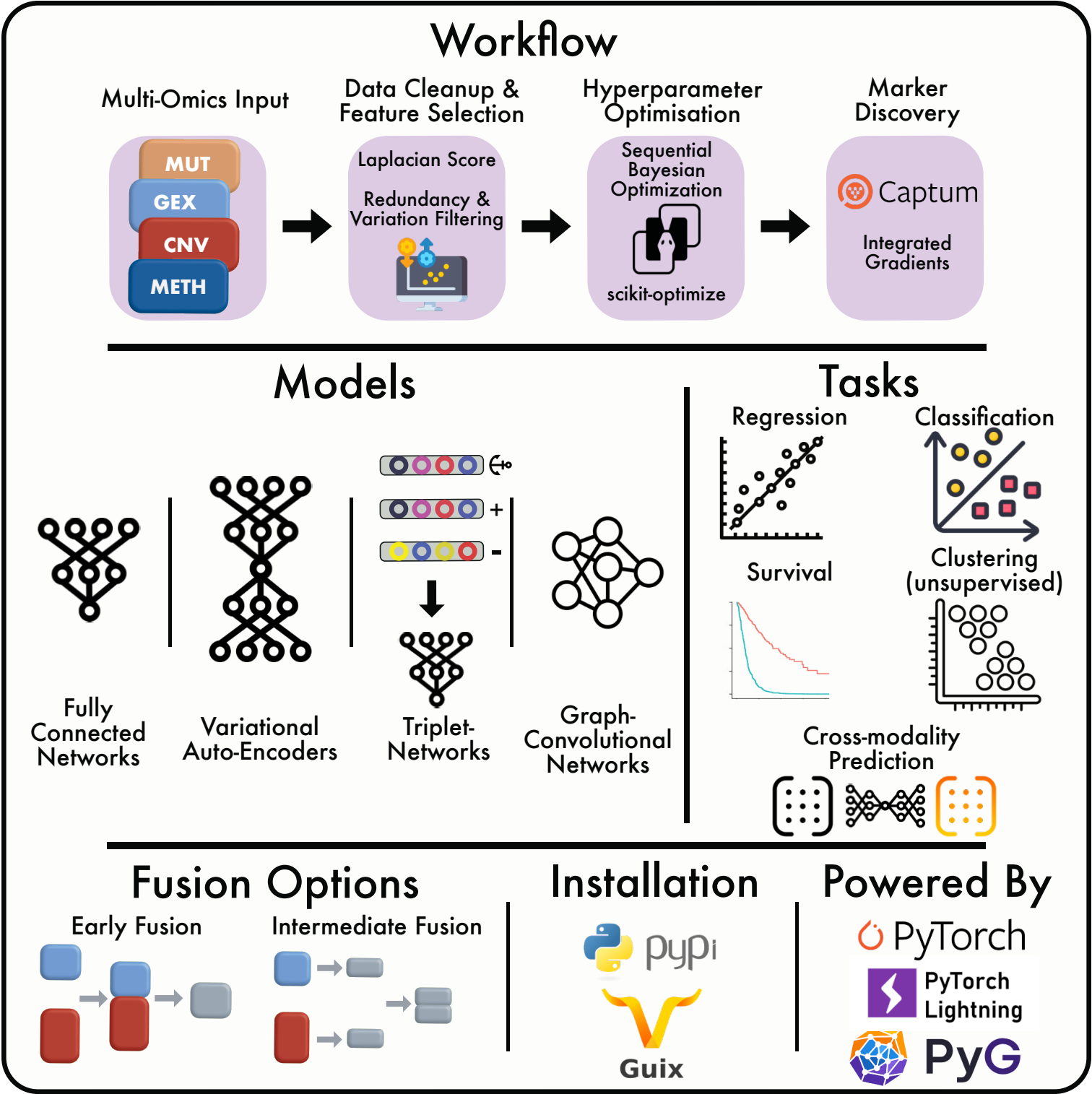
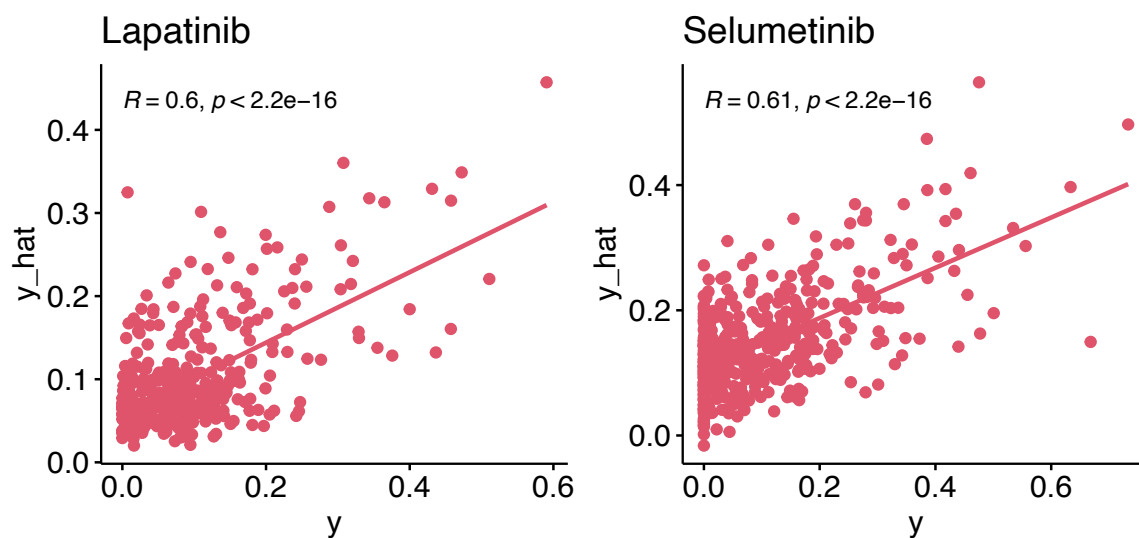
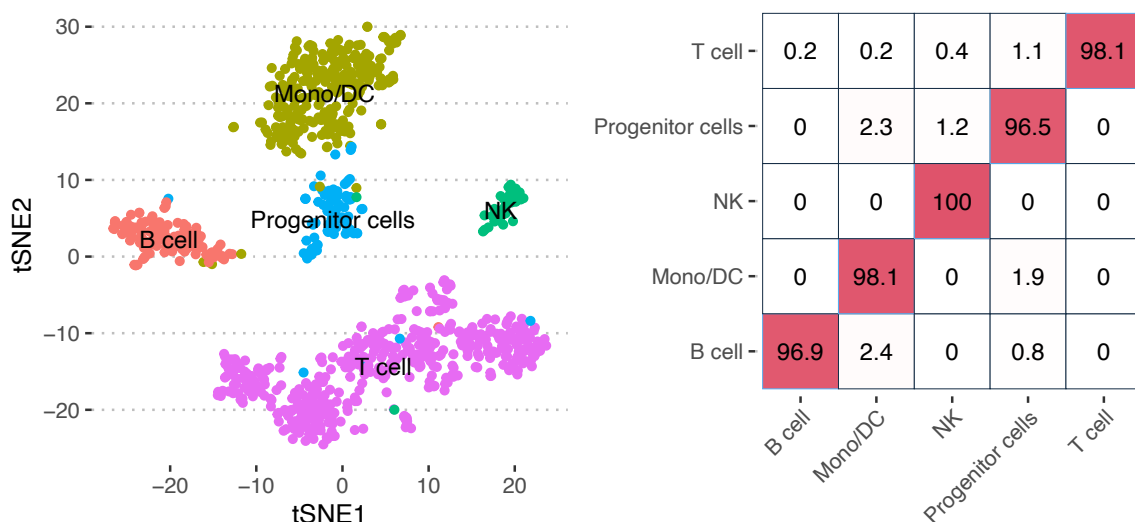


Figure 1

A



B



C

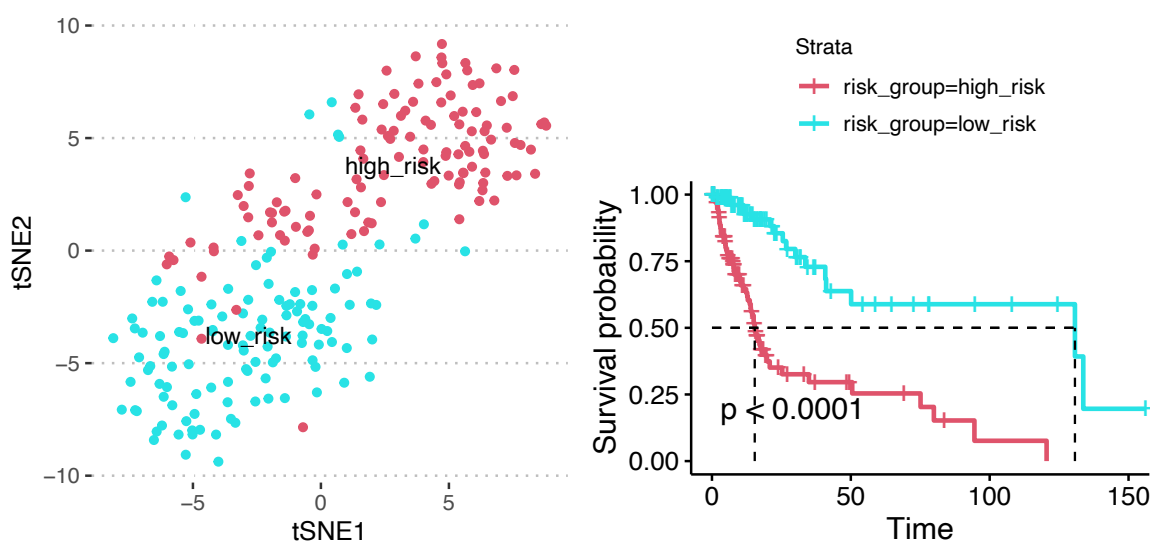
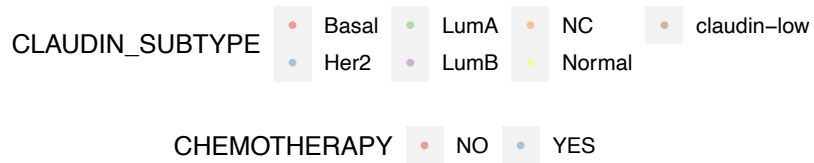
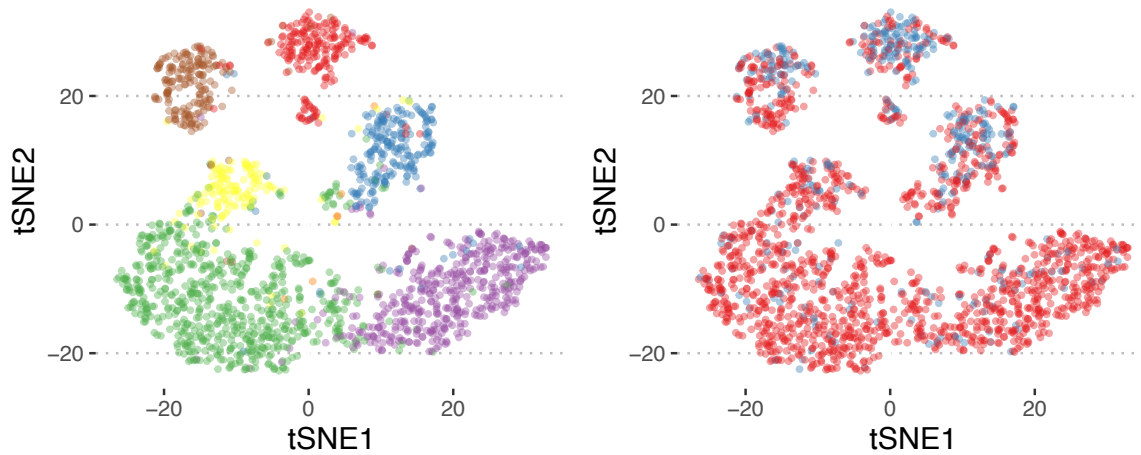


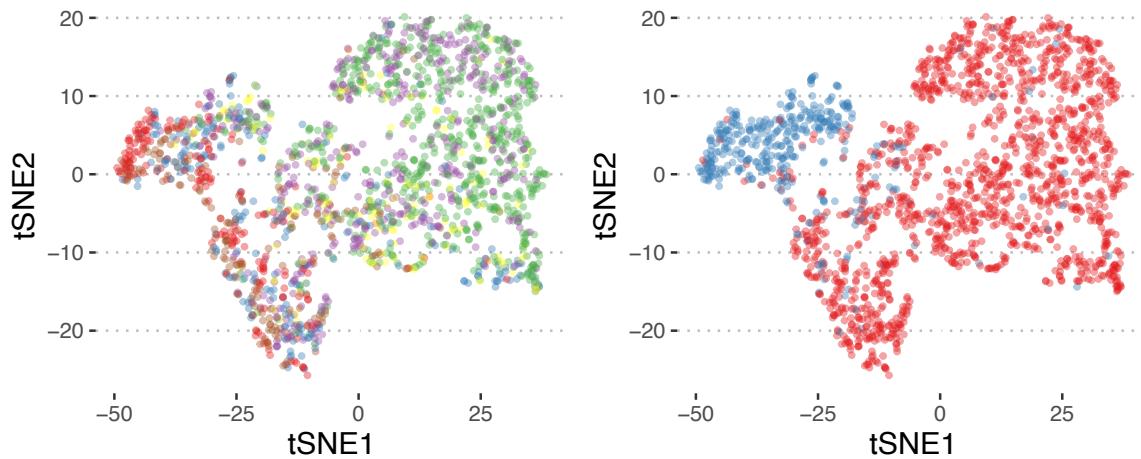
Figure 2



A) single-task learning: subtype



B) single-task learning: chemotherapy response



C) multi-task learning: both subtype and chemotherapy response

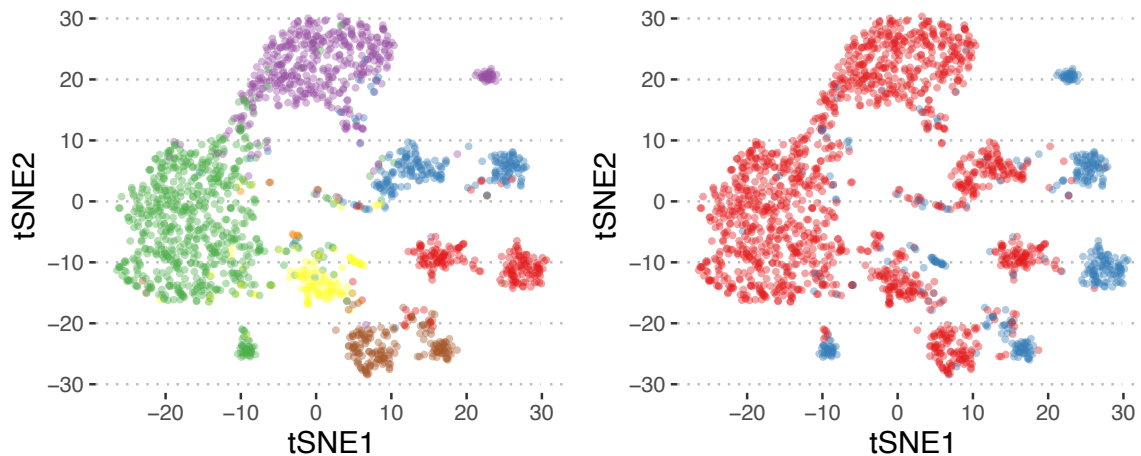


Figure 3

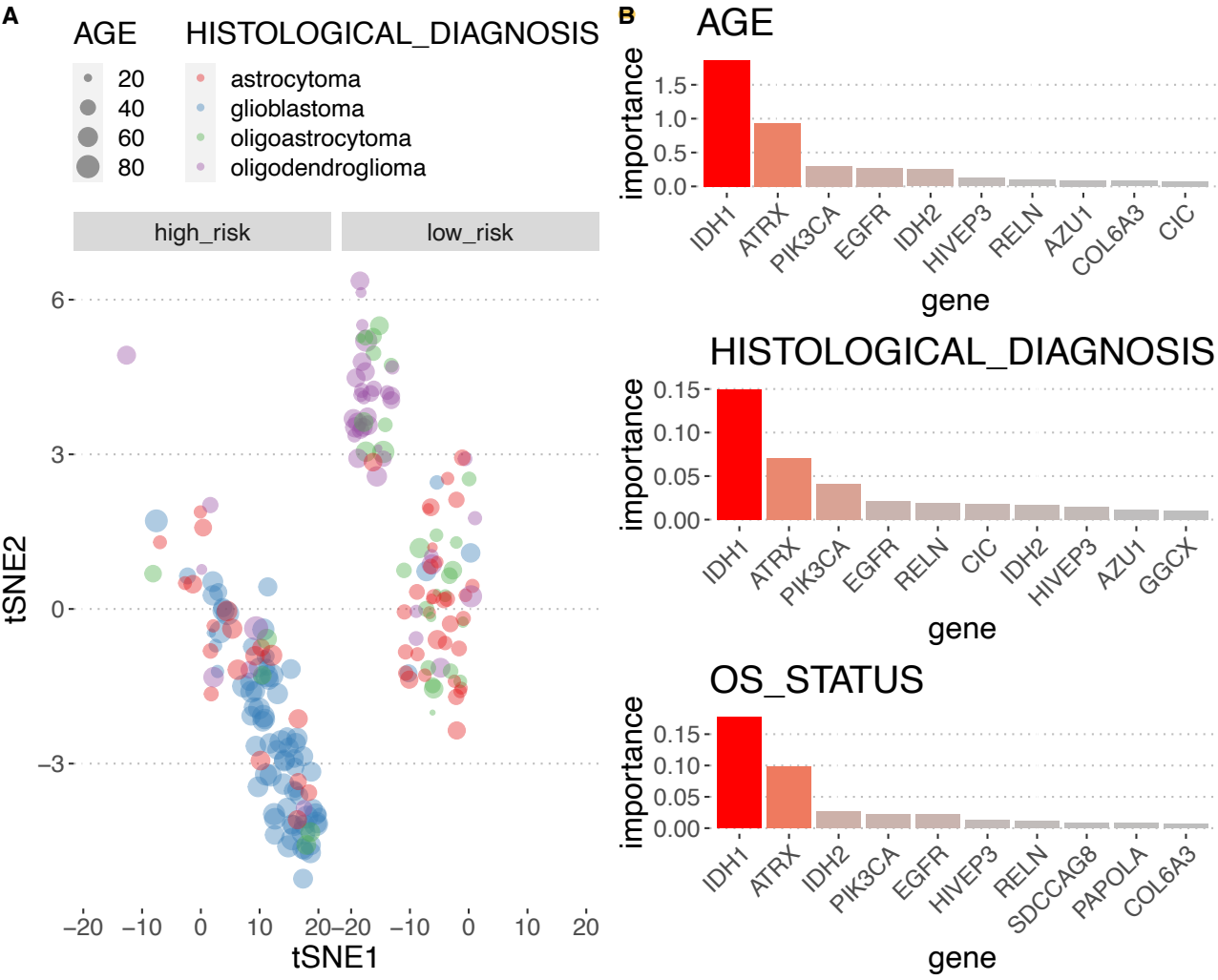


Figure 4

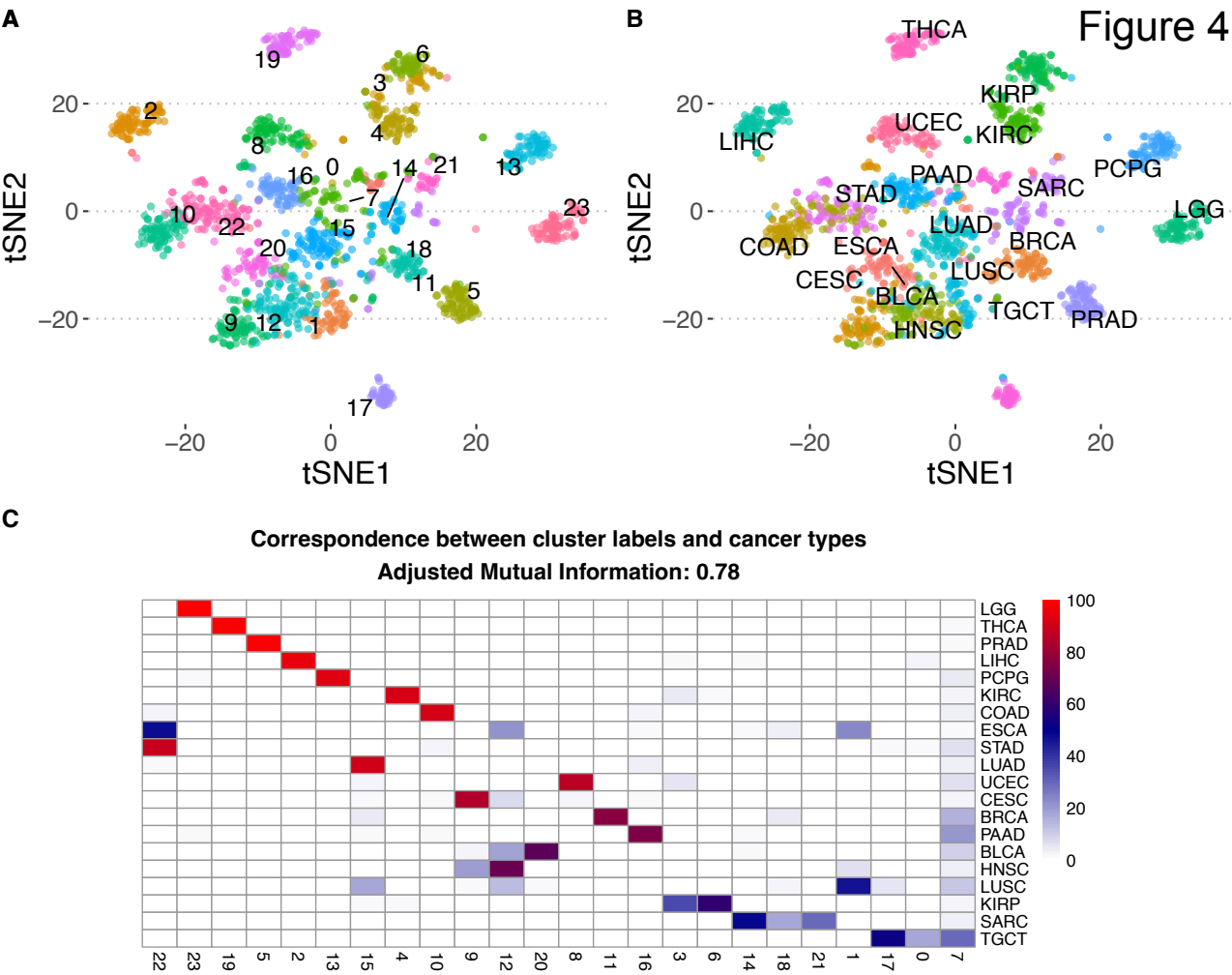


Figure 5

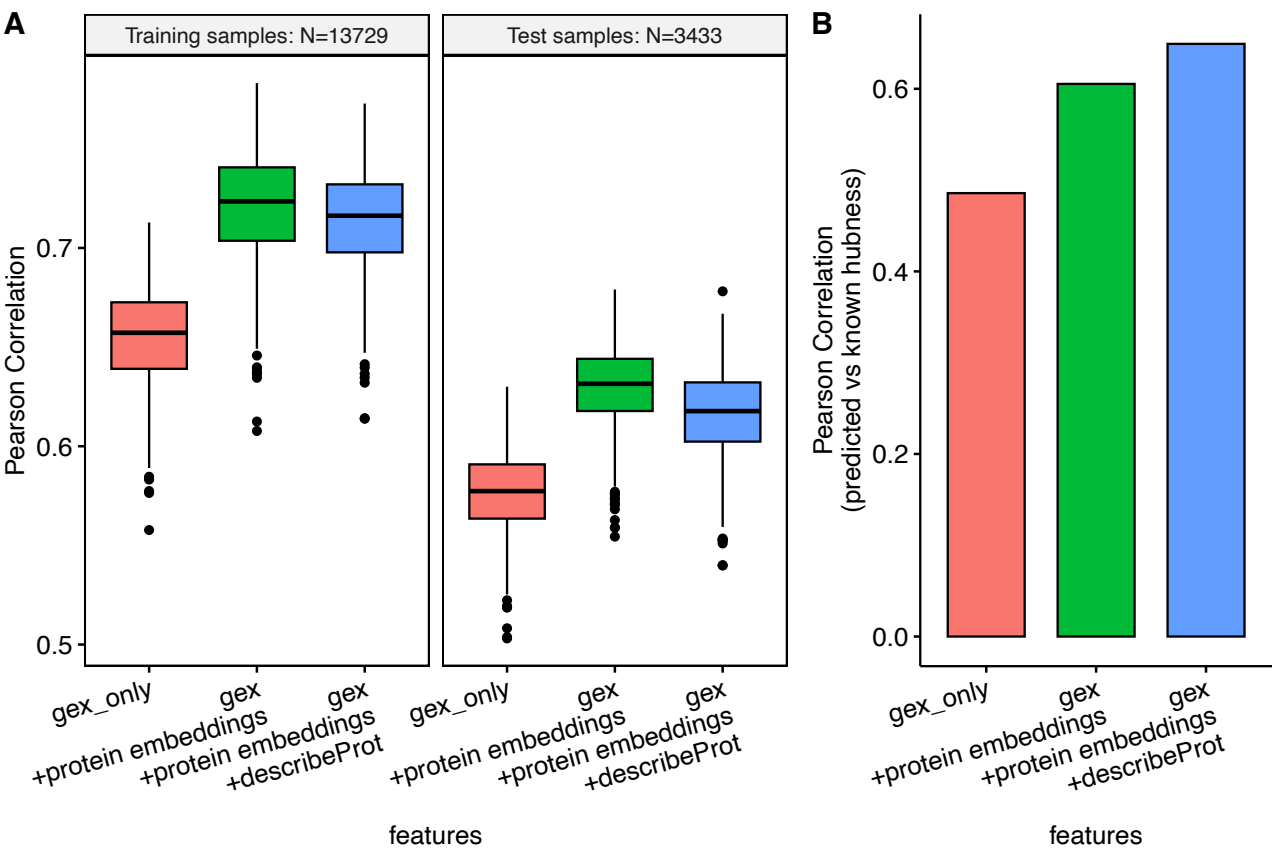


Figure 6

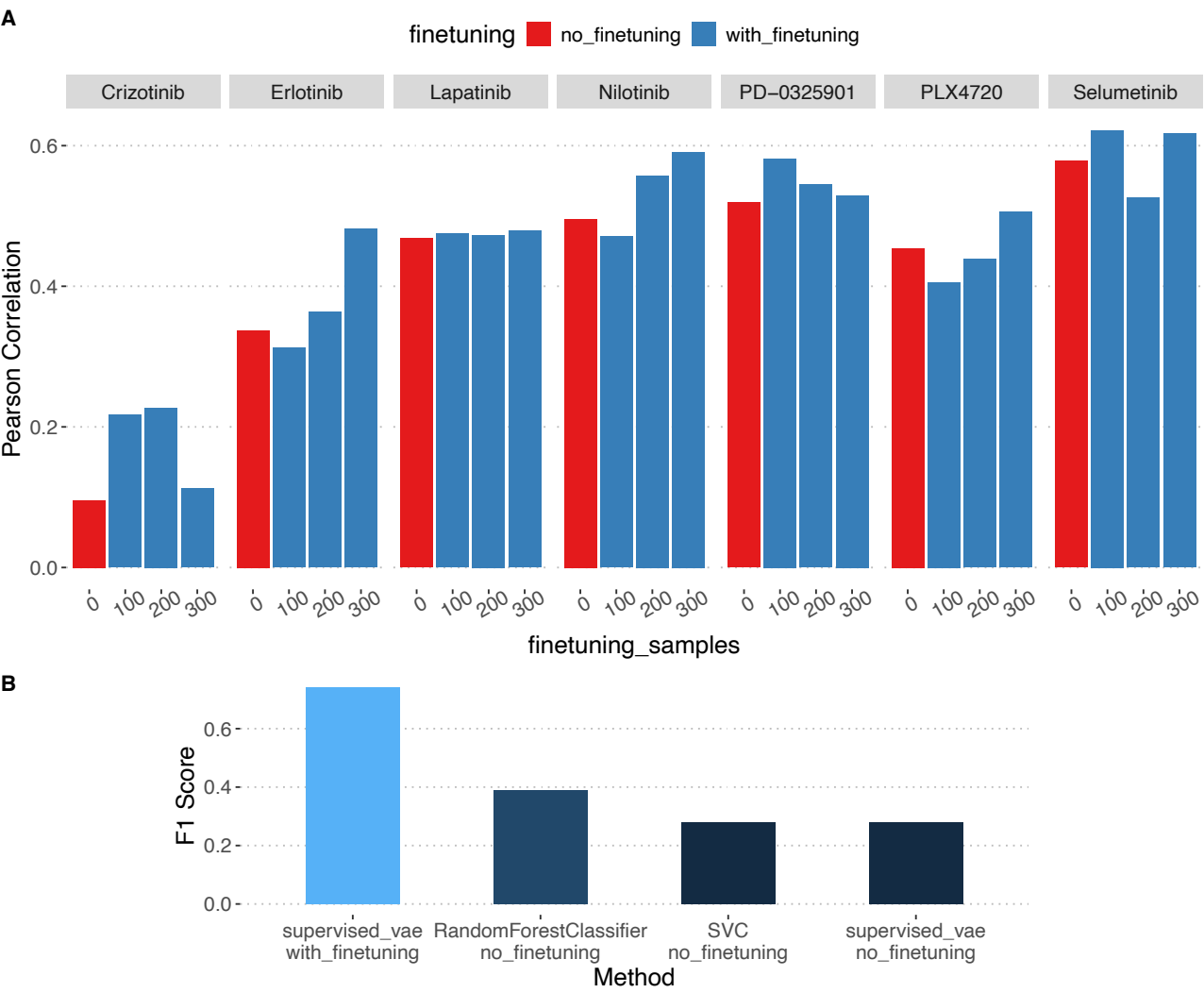


Figure 7

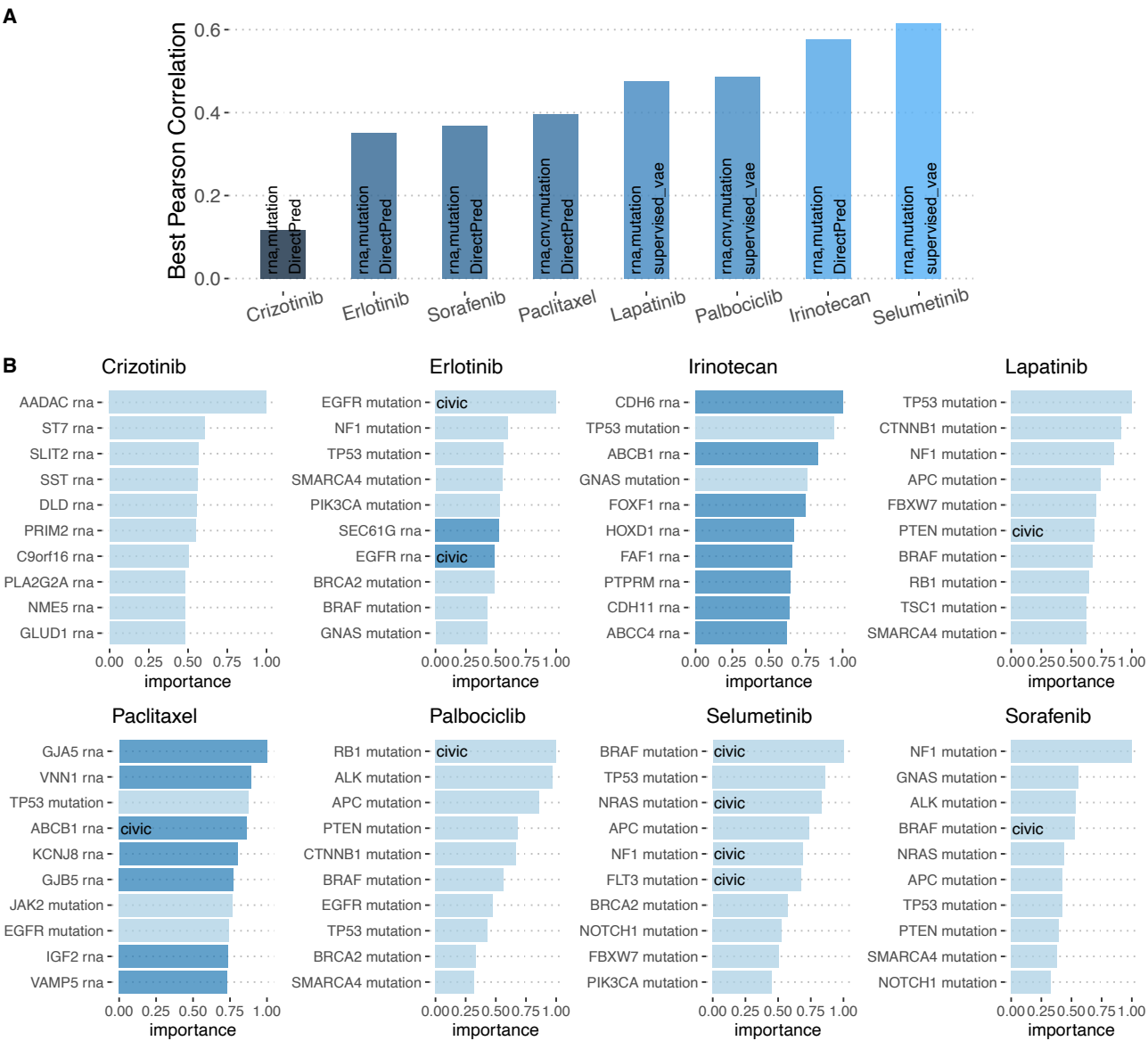


Figure 8

A

	task	var	tool	fusion	finetuning	data_types	metric	value
1	cclle_vs_gdsc	Crizotinib	DirectPred	intermediate	with_finnetuning	rna,cnv	pearson_corr	0.3233303
2	cclle_vs_gdsc	Erlotinib	DirectPred	intermediate	no_finnetuning	rna,cnv	pearson_corr	0.4224528
3	cclle_vs_gdsc	Irinotecan	SVM	early	no_finnetuning	rna	pearson_corr	0.5806452
4	cclle_vs_gdsc	Lapatinib	GNN	early	no_finnetuning	rna	pearson_corr	0.5948794
5	cclle_vs_gdsc	Paclitaxel	SVM	early	no_finnetuning	rna	pearson_corr	0.3830578
6	cclle_vs_gdsc	Palbociclib	DirectPred	early	with_finnetuning	rna,cnv	pearson_corr	0.4664261
7	cclle_vs_gdsc	Selumetinib	GNN	early	with_finnetuning	rna	pearson_corr	0.6446902
8	cclle_vs_gdsc	Sorafenib	SVM	early	no_finnetuning	rna	pearson_corr	0.5284420
9	lgg_gbm	OS_STATUS	GNN	early	with_finnetuning	cna	cindex	0.8226793
10	metabric	CHEMOTHERAPY	DirectPred	intermediate	no_finnetuning	gex,cna	f1_score	0.7390112
11	metabric	CLAUDIN_SUBTYPE	supervised_vae	early	with_finnetuning	gex	f1_score	0.6789094
12	singlecell_bonemarrow	celltype_l1	DirectPred	early	no_finnetuning	RNA	f1_score	0.9788197
13	singlecell_bonemarrow	celltype_l2	GNN	early	no_finnetuning	RNA	f1_score	0.6582659

