

Extended Data Table 1| Comparison of performance between the transfer learning models and other currently available prediction tools.

	Precision	Recall	Accuracy	F1-score	MCC
AmpSorter	0.96	0.95	0.95	0.95	0.91
ProteoGPT withoutFT	0.49	0.50	0.49	0.39	-0.01
Bert-Protein	0.46	0.50	0.49	0.35	-0.02
BioToxiPept	0.86	0.86	0.86	0.86	0.72
ProteoGPT withoutFT*	0.48	0.49	0.48	0.40	-0.02
ToxiBTL	0.95	0.95	0.95	0.95	0.90
ToxinPred2.0-RF	0.77	0.68	0.67	0.64	0.44

ProteoGPT withoutFT: ProteoGPT without fine tuning for AMP prediction;

ProteoGPT withoutFT: ProteoGPT without fine tuning for cytotoxicity prediction*