

Deep Learning-Driven Drug Response Prediction and Mechanistic Insights in Cancer Genomics

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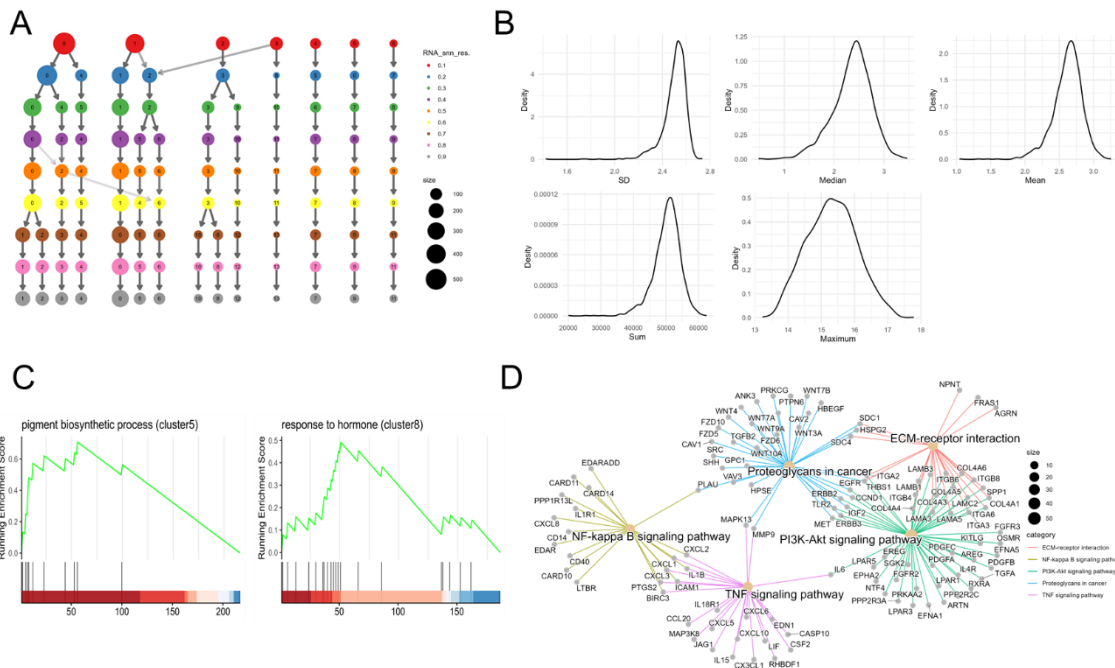
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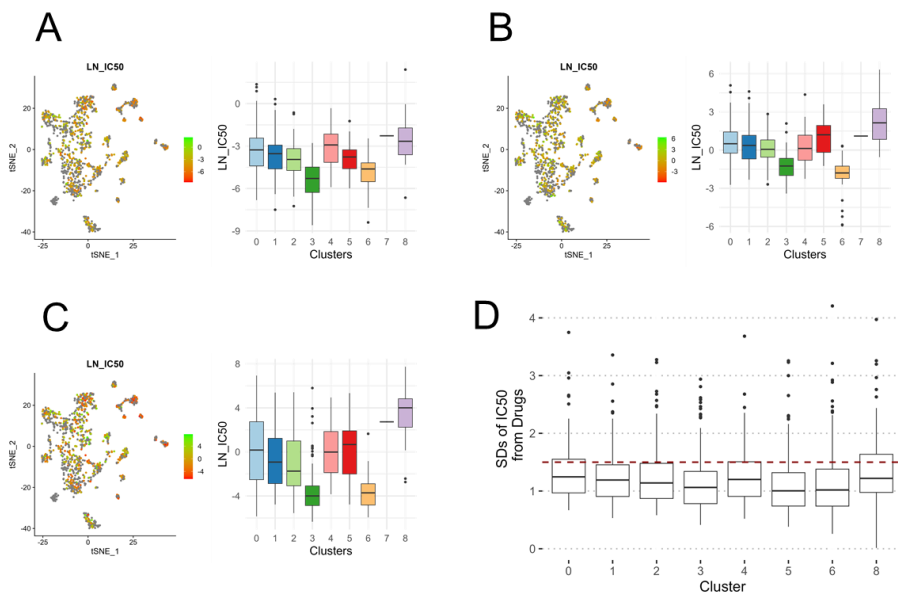
These authors contributed equally

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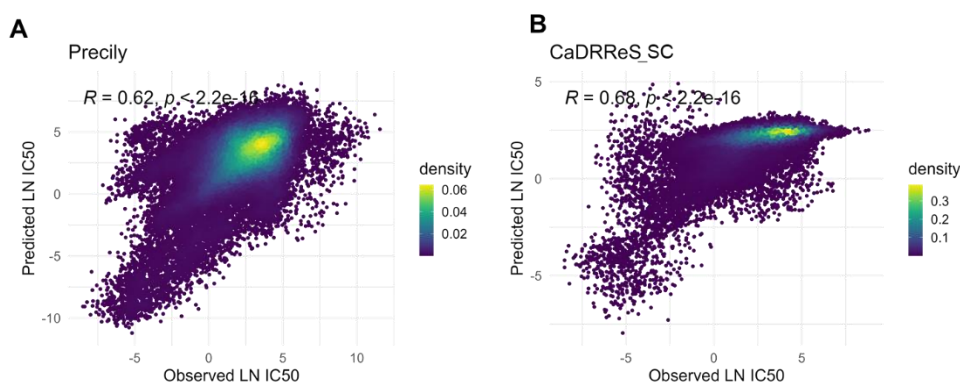
Supplementary Information



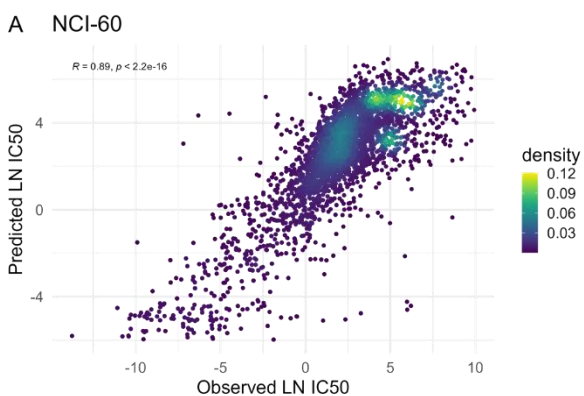
Supplementary Fig. 1 A Cellular subgroups corresponding to different resolutions during cluster analysis; B Distribution of LN IC50 values (SD, Mean, Median, Sum, Maximum); C Results of GSEA analysis for genes specifically overexpressed in cluster 5/8; D Genes from cluster 0 involved in various cancer related signaling pathways



Supplementary Fig. 2 A LN IC50 of Dactinomycin in cancer cell line; B LN IC50 of AZD7762 in cancer cell line; C LN IC50 of Gemcitabine in cancer cell line; D Distributions of LN IC50 SDs from drugs within each cluster



Supplementary Fig. 3 A Predictive analysis conducted by the Precily model on the GDSC1; B Predictive analysis conducted by the CaDRReS_SC model on the GDSC1

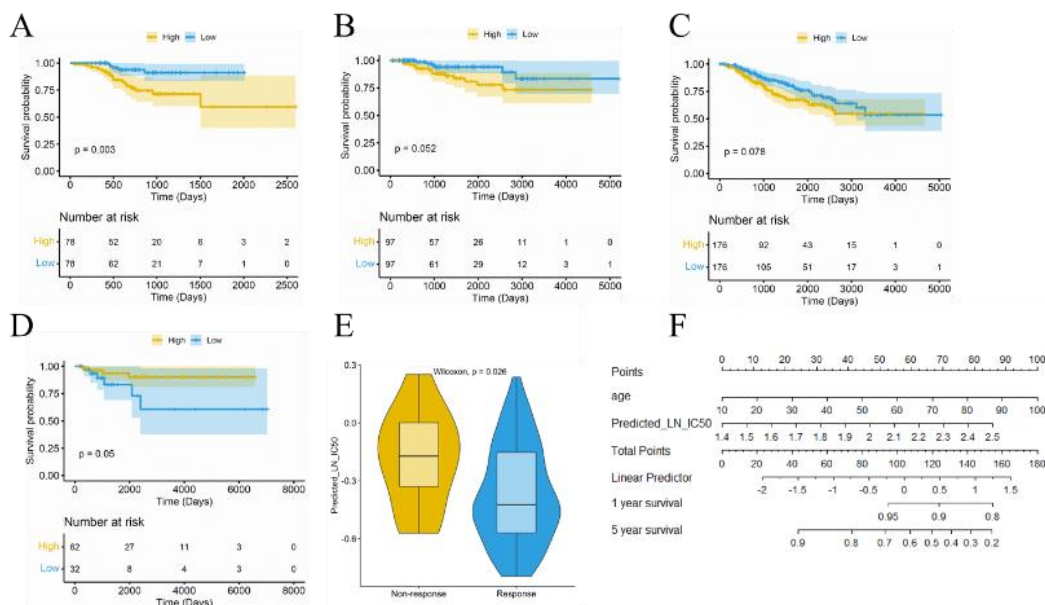


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Supplementary Fig. 4 A correlation between predicted and observed LN IC50 values in NCI-60 for the overlapping compounds using the DrugS model



Supplementary Fig. 5

A Stratification of Oxaliplatin-treated patients based on median predicted LN IC50 values and survival analysis, revealing a correlation between lower LN IC50 values and better prognosis.

B Stratification of Doxorubicin-treated patients based on median predicted LN IC50 values and survival analysis, revealing a correlation between lower LN IC50 values and better prognosis.

C Stratification of Paclitaxel-treated patients based on median predicted LN IC50 values and survival analysis, revealing a correlation between lower LN IC50 values and better prognosis.

D Stratification of Etoposide-treated patients based on median predicted LN IC50 values and survival analysis, revealing a correlation between lower LN IC50 values and better prognosis.

E predictions of LN IC50 values for Etoposide, showing significant differences between responsive and non-responsive patients

F nomogram plot of the COX regression results of Cisplatin