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2 Figure S1. Survival analysis in GSE42127 and GSE72094 datasets.

3 (A-B) KM survival curves for the high- and low-risk groups in the GEO cohorts; (C-D)

4 Survival status of patients and expression of marker genes in GEO cohorts; (E-F) 1-, 3-, and

5 5-year ROC curves for the riskscore in GEO cohorts.

All patient 492 (100) Stage_Stage II 268 (54) Stage_Stage II 19 (24) Stage_Stage II 25 (5) Gender_Female 225 (54) Age_<70 307 (62) Age_>=70 185 (38) No. of Subgroup Patients (%) All patient 132 (100) Stage_Stage II 21 (16) Stage_Stage II 22 (17) Stage_Stage II 25 (64) Stage_Stage II 58 (15) Stage_Stage II 76 (44) Age_<70_184 (46) Age_<70_184	A Subgroup	No. of Patients (%)		Hazard Ratio (95% CI) P-value
B         No. of Subgroup         Hazard Ratio Pervalue         Pervalue           All patient         132 (100) Stage_Stage II         132 (100) Stage_Stage II         132 (100) Stage_Stage II         194 (1.24 to 2.64) 0.002 1.91 (1.02 to 2.79) 0.04           Stage_Stage II         22 (17) Stage_Stage III         116 (1.02 to 2.79) 0.04         1.94 (1.24 to 2.64) 0.002 1.91 (1.02 to 2.79) 0.04           Stage_Stage II         22 (17) Stage_Stage III         116 (1.02 to 2.79) 0.04         1.94 (1.01 to 2.87) 0.045           Gender_Female         65 (49) Gender_Male         7.5 (0.82 to 14.18) 0.093 2.19 (0.95 to 3.44) 0.074         0.77 (0.82 to 14.18) 0.093 2.19 (1.06 to 3.31) 0.031           Age_<70         80 (61) Age_>=70         1.94 (1.01 to 2.87) 0.045         1.94 (1.01 to 2.87) 0.045           Age_<70         80 (61) Age_>=70         1.15 2 2.5 3 3.5 4         1.94 (1.01 to 2.87) 0.045           C         No. of Hazard Ratio         Pervalue         95% CI)           All patient         398 (100) Stage_Stage II         1.64 (1.3 to 1.98) <0.001         1.64 (1.3 to 1.98) <0.001           Stage_Stage II         58 (15) Stage_Stage II         1.66 (0.79 to 1.93) 0.355         1.36 (0.79 to 1.93) 0.355           Stage_Stage II         58 (15) Stage_Stage II         1.67 (1.47 to 4.05) <0.001         1.66 (1.27 to 2.45) <0.001           Gender_Female         222 (56) Gender_Female	All patient Stage_Stage Stage_Stage Stage_Stage Gender_Fema Gender_Male Age_<70 Age_>=70	492 (100) I 268 (54) II 119 (24) III 80 (16) IV 25 (5) ale 267 (54) 225 (46) 307 (62) 185 (38)		2.91 (1.87 to 3.96) <0.001 2.78 (1.18 to 4.38) 0.014 1.9 (0.72 to 3.08) 0.281 3.27 (1.22 to 5.32) 0.013 4.03 (0.49 to 7.56) 0.35 2.66 (1.33 to 3.98) 0.003 3.68 (1.89 to 5.48) <0.001 2.47 (1.38 to 3.55) 0.001 →6.86 (2.82 to 10.9) <0.001
B Subgroup Patients (%) All patient 132 (100) Stage_Stage II 22 (17) Stage_Stage III 22 (17) Stage_Stage III 21 (16) Gender_Male 67 (51) Age_<70 80 (61) Age_>=70 52 (39) All patient 398 (100) Stage_Stage III 255 (64) Stage_Stage III 58 (15) Stage_Stage II		I 0	1 2 3 4 5 6 7 8 9 10	11
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	D	0	Hazard Ratio	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	D Subgroup	No. of Patients (%)		Hazard Ratio (95% CI) P-value
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	All patient Stage_Stage I Stage_Stage I Stage_Stage I Gender_Fema Gender_Male Age_<70 Age_>=70	132 (100) 89 (67) 1 22 (17) 11 21 (16) 16 65 (49) 67 (51) 80 (61) 52 (39)		1.94 (1.24 to 2.64) 0.002 1.91 (1.02 to 2.79) 0.04 1.73 (0.69 to 2.77) 0.361 →7.5 (0.82 to 14.18) 0.093 2.19 (0.95 to 3.44) 0.074 1.88 (1.05 to 2.71) 0.031 1.94 (1.01 to 2.87) 0.045 2.19 (1.06 to 3.31) 0.031
No. of       Hazard Ratio (95% Cl)       P-value         Subgroup       Patients (%)       (95% Cl)         All patient       398 (100)       1.64 (1.3 to 1.98) <0.001	C	0.5	1 1.5 2 2.5 3 3.5 Hazard Ratio	4
All patient       398 (100)         Stage_Stage I       255 (64)         Stage_Stage II       69 (17)         Stage_Stage III       58 (15)         Stage_Stage IV       16 (4)         Gender_Female       222 (56)         Gender_Male       176 (44)         Age_<70	Subgroup	No. of Patients (%)		Hazard Ratio (95% Cl) P-value
	All patient Stage_Stage I Stage_Stage I Stage_Stage I Stage_Stage I Gender_Fema Gender_Male Age_<70 Age_>=70	398 (100) 255 (64) I 69 (17) II 58 (15) V 16 (4) Ile 222 (56) 176 (44) 184 (46) 214 (54)		1.64 (1.3 to 1.98) <0.001 1.54 (1.09 to 1.98) 0.011 →2.76 (1.47 to 4.05) <0.001 1.36 (0.79 to 1.93) 0.355 1.16 (0.22 to 2.11) 0.5 1.86 (1.27 to 2.45) <0.001 1.56 (1.14 to 1.99) 0.004 1.62 (1.11 to 2.12) 0.01 1.78 (1.28 to 2.28) <0.001
		0	0.5 1 1.5 2 2.5 3 3.5	4

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7 Figure S2. Forest map for the prognostic performance of the riskscore in TCGA (A),

8 GSE42127 (B), and GSE72094 (C) cohorts.



Figure S3. Analysis of potential small-molecular drugs and sensitivity of targeted drugs. 10 (A) 73 small-molecular drugs-pathway network using MoA analysis; (B) Drug sensitivity 11 analysis of gene sets based on Genomics of Drug Sensitivity in Cancer (GDSC) IC50 drug 12 13 data; (C) Drug sensitivity study of a gene set based on Cancer Therapeutics Response Portal 14 (CTRP) IC50 drug data. Pearson's correlation shows the relationship between gene expression and drug sensitivity. Negative correlations were represented by blue bubbles, whereas positive 15 correlations were represented by red bubbles; the darker the hue, the stronger the link. The 16 17 size of the bubble was connected to the FDR importance. The dark outline denotes a 0.05 18 FDR. Only the top 30 medicines were considered.



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20 Figure S4. Validation of the treatment decisions in GSE42127 and GSE70294 cohorts.

(A-B) Sensitivity of five common chemotherapeutics in high- and low-risk groups; (C-D)
Immune response in high- and low-risk groups using subclass mapping; (E-F) Immune
response in high- and low-risk groups based on TIDE scores; \*p < 0.05; \*\*p < 0.01; \*\*\*p <</li>
0.001.

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