

Supplementary Materials

Prediction of Synthetic Lethality in *Escherichia coli* Based on Feature Engineering Through Graph Embedding

Qian Xu ^{1,2,†}, Yi-Miao Feng ^{3,†}, Hai-Xia Guo ¹, Ya-Wei Su ¹, Xiao-Ru Chen ⁴, Hao-Ran Sun ⁵, Jing Feng ⁴ and Feng-Biao Guo ^{1,2,*}

¹ School of Pharmaceutical Sciences, Wuhan University, Wuhan 430072, China

² Key Laboratory of Combinatorial Biosynthesis and Drug Discovery, Ministry of Education, Wuhan University, Wuhan 430072, China

³ School of Information Science and Technology, ShanghaiTech University, Shanghai 201210, China

⁴ Institute of Artificial Intelligence, School of Computer Science, Wuhan University, Wuhan 430072, China

⁵ School of Cyber Science and Engineering, Wuhan University, Wuhan 430072, China

* Correspondence: fbguoy@whu.edu.cn

† These authors contributed equally to this work.

How To Cite: Xu, Q.; Feng, Y.-M.; Guo, H.-X.; et al. Prediction of Synthetic Lethality in *Escherichia coli* Based on Feature Engineering Through Graph Embedding. *eMicrobe* **2026**, 2(1), 6. <https://doi.org/10.53941/emicrobe.2026.100006>

Table S1. The fitness features in conjunction with different *n*-value and model performance.

Union	<i>n</i> -Value	ACC.	AUC	Prec.	Sen.	F1	
1	cos euc	95 80	0.9213 ± 0.0016	0.9272 ± 0.0026	0.7972 ± 0.0126	0.5778 ± 0.0093	0.6699 ± 0.0066
3	cos euc	75,85,95	0.9203 ± 0.0027	0.9188 ± 0.0051	0.8005 ± 0.0146	0.5638 ± 0.0151	0.6615 ± 0.013
4	cos euc	65,75,85,95	0.9143 ± 0.0027	0.9128 ± 0.0054	0.7714 ± 0.0152	0.5401 ± 0.0206	0.6351 ± 0.0151
5	cos euc	55,65,75,85,95	0.8991 ± 0.0031	0.904 ± 0.0054	0.7219 ± 0.0178	0.4397 ± 0.0243	0.5461 ± 0.0203
10	cos euc	50,55,60,65,70, 75,80,85,90,95	0.869 ± 0.0033	0.8521 ± 0.0045	0.5758 ± 0.0341	0.1983 ± 0.0181	0.2948 ± 0.0238

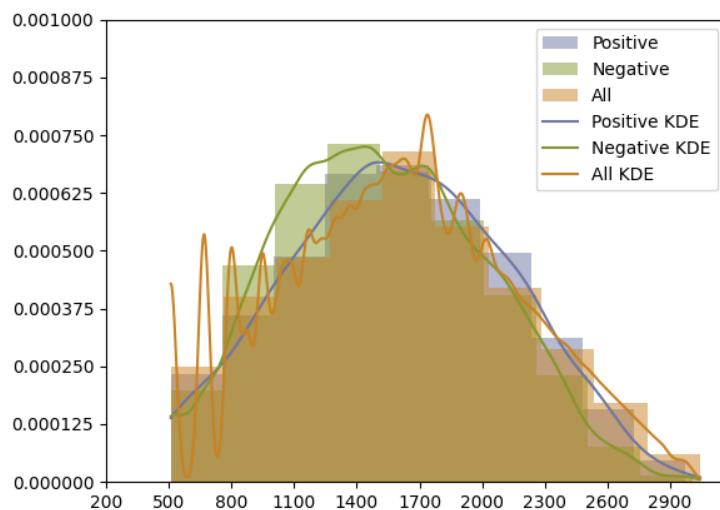


Figure S1. Example graph of distribution histograms and nuclear density (KDE) curves of degree centrality characteristics for different sample sets.



Copyright: © 2026 by the authors. This is an open access article under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

Publisher's Note: Scilight stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.