Exploration and validation of the prognostic value of mitophagy and mitochondrial dynamics-related genes in cervical cancer

Jiankui Li[1], Xi Chen[2*] and Juan Li[1*]

[1] Department of Gynecology, the 960th Hospital of the Joint Logistics Support Force, 1181886898@qq.com.

[2] Shaanxi Eye Hospital, Xi’an People’s Hospital (Xi’an Fourth Hospital), Affiliated People’s Hospital of Northwest University, 1124041800@qq.com.

*Corresponding author: Juan Li, Jinan city, Shandong Province, 250031, China. Email: 15806617381@163.com. Tel:13583190983. Xi Chen, Xi 'an city, Shaanxi Province, 710004, China. E-mail: 1124041800@qq.com. Tel:13399159349 .

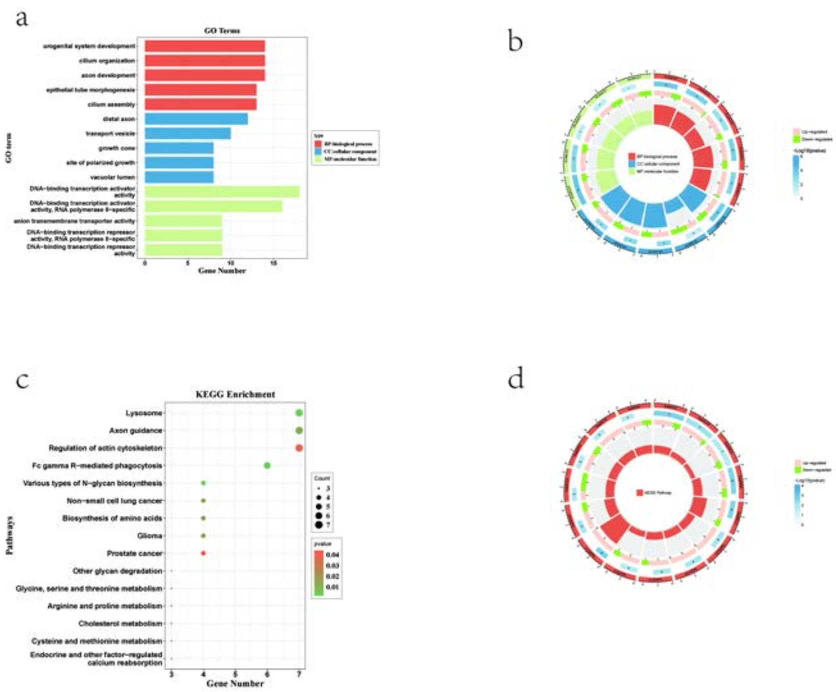

Figure S1 Functional enrichment analysis. **(a-b)** GO enrichment analysis of candidate genes. **(c-d)** KEGG enrichment results. All *P*-value$<$0.05.

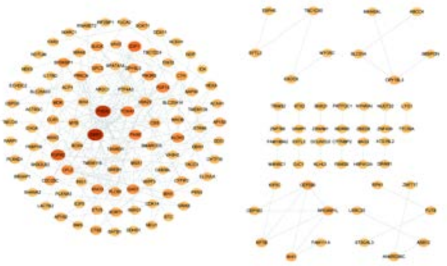

Figure S2 PPI network. *P*-value = 1.12 × 10^{-8}.

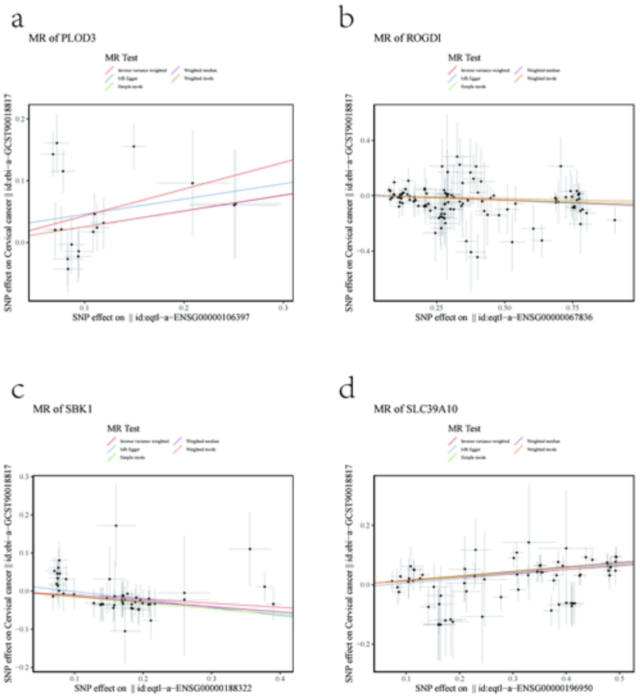

Figure S3 Correlation analysis between exposure factors and outcome. (a) Gene PLOD3 was a risk factor. **(b)** Gene ROGDI was a safety factor. **(c)** Gene SBK1was a safety factor. **(d)** Gene SLC39A10 was a risk factor.

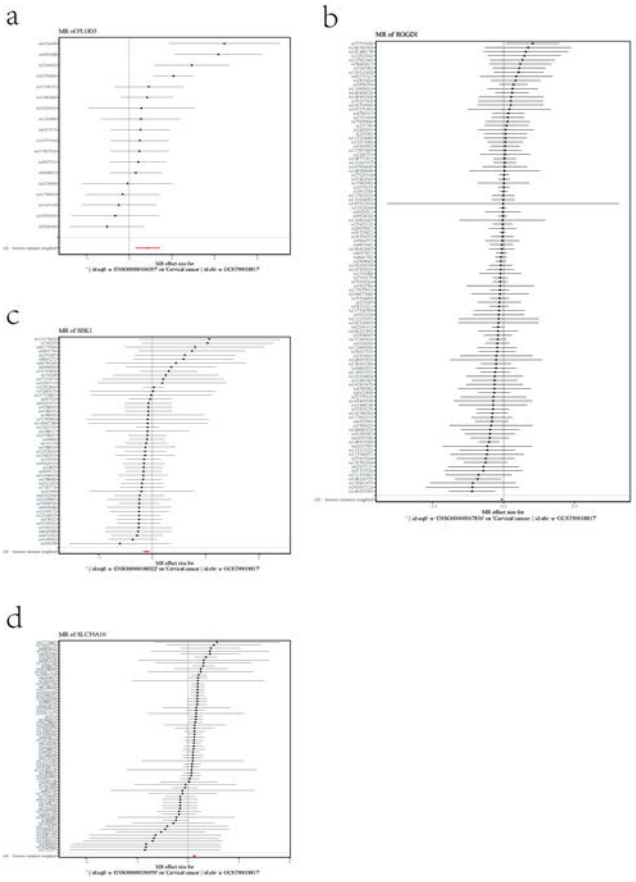

Figure S4 Prediction of outcome effects of instrumental variables. (a) PLOD3 was a risk factor. **(b)** ROGDI was a safety factor. **(c)** SBK1was a safety factor. **(d)** SLC39A10 was a risk factor.

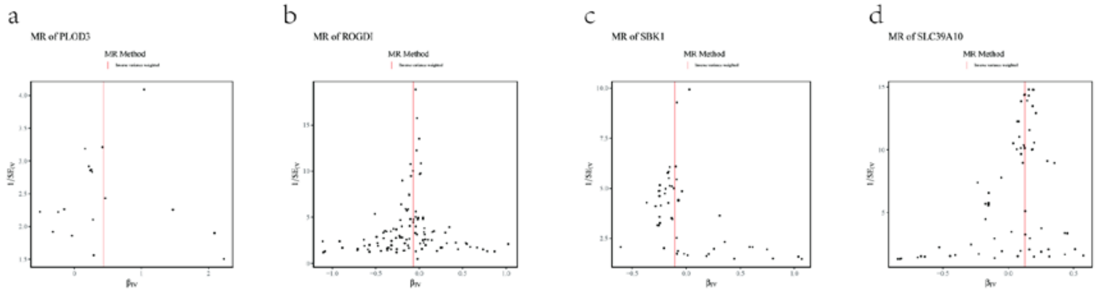

Figure S5 MR randomness judgment is symmetrical distribution ((**a)** PLOD3, (**b**) ROGDI, (**c**) SBK1, (**d**) SLC39A10).

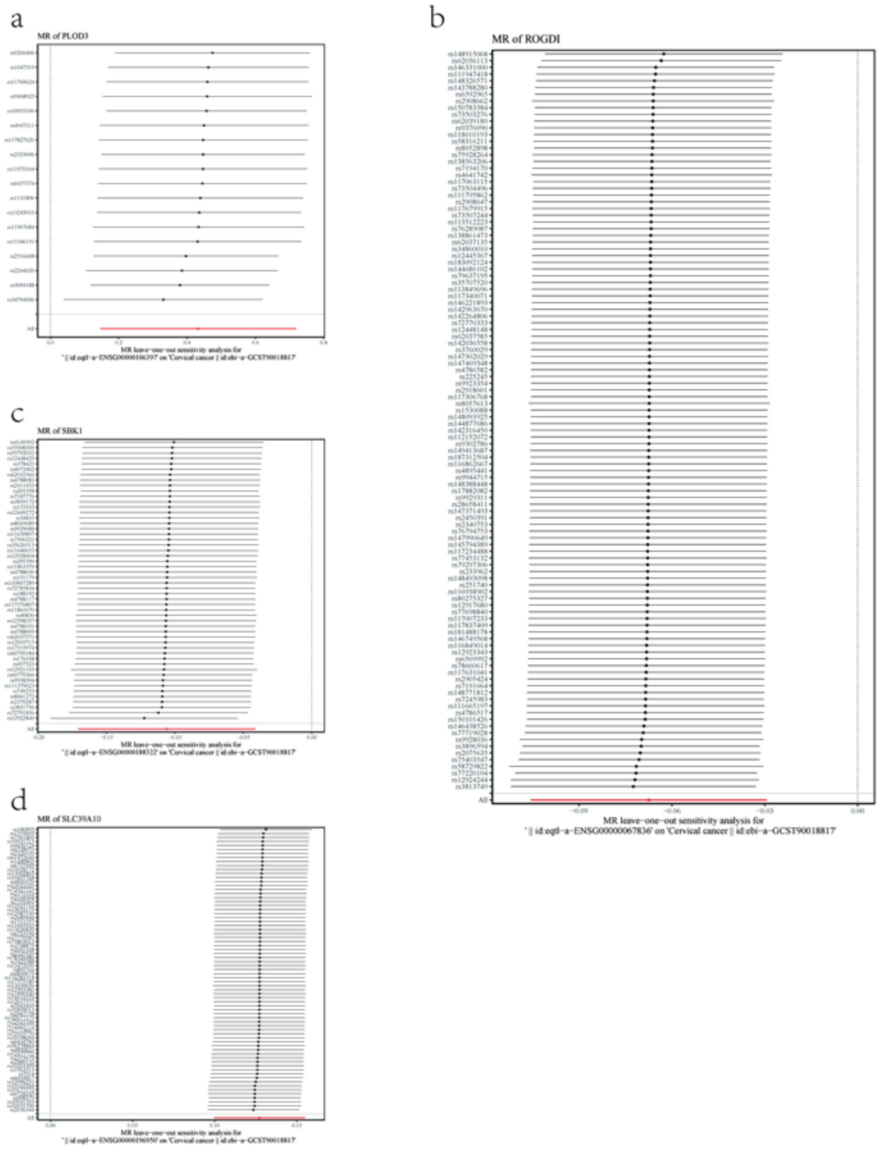

Figure S6 MR leave-one-out sensitivity analysis (PLOD3 **(a)**, ROGDI **(b)**, SBK1 **(c)**, SLC39A10 **(d)**).

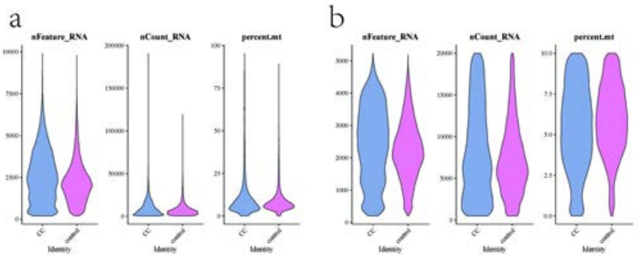

Figure S7 Single cell quality control. (a) Before quality control, nFeature_RNA, nCount_RNA, percent.mt distribution. **(b)** after quality control, nFeature_RNA, nCount_RNA, percent.mt distribution.

Figure S8 Go enrichment results (endothelial cells (**a**),epithelial cells (**b**), T cells (**c**)).

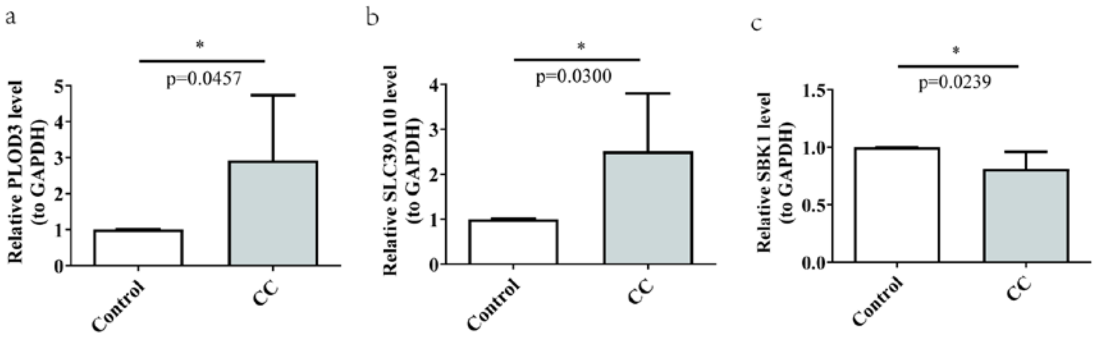

Figure S9 Reverse transcription quantitative polymerase chain reaction. (**a**) PLOD3 was highly expressed in CC. (**b**) SLC39A10 was highly expressed in CC. (**c**) SBK1 was low expression in CC. All *P*-value＜0.05.

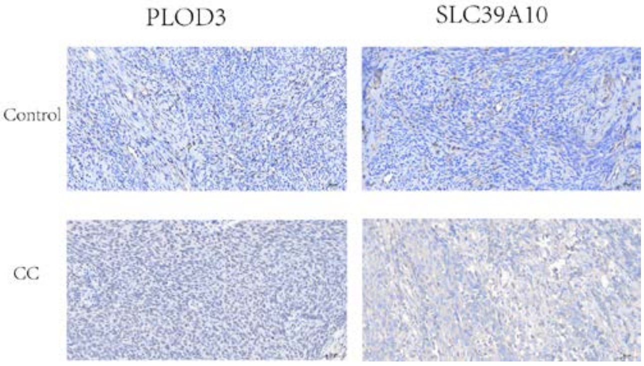

Figure S10 Immunohistochemistry (IHC). Upregulation of PLOD3 and SLC39A10 in CC patients. Representative images of IHC staining of CC tumor tissues and paracancerous tissues with the anti-PLOD3 and SLC39A10 antibodies. scale bar: 50 μm.

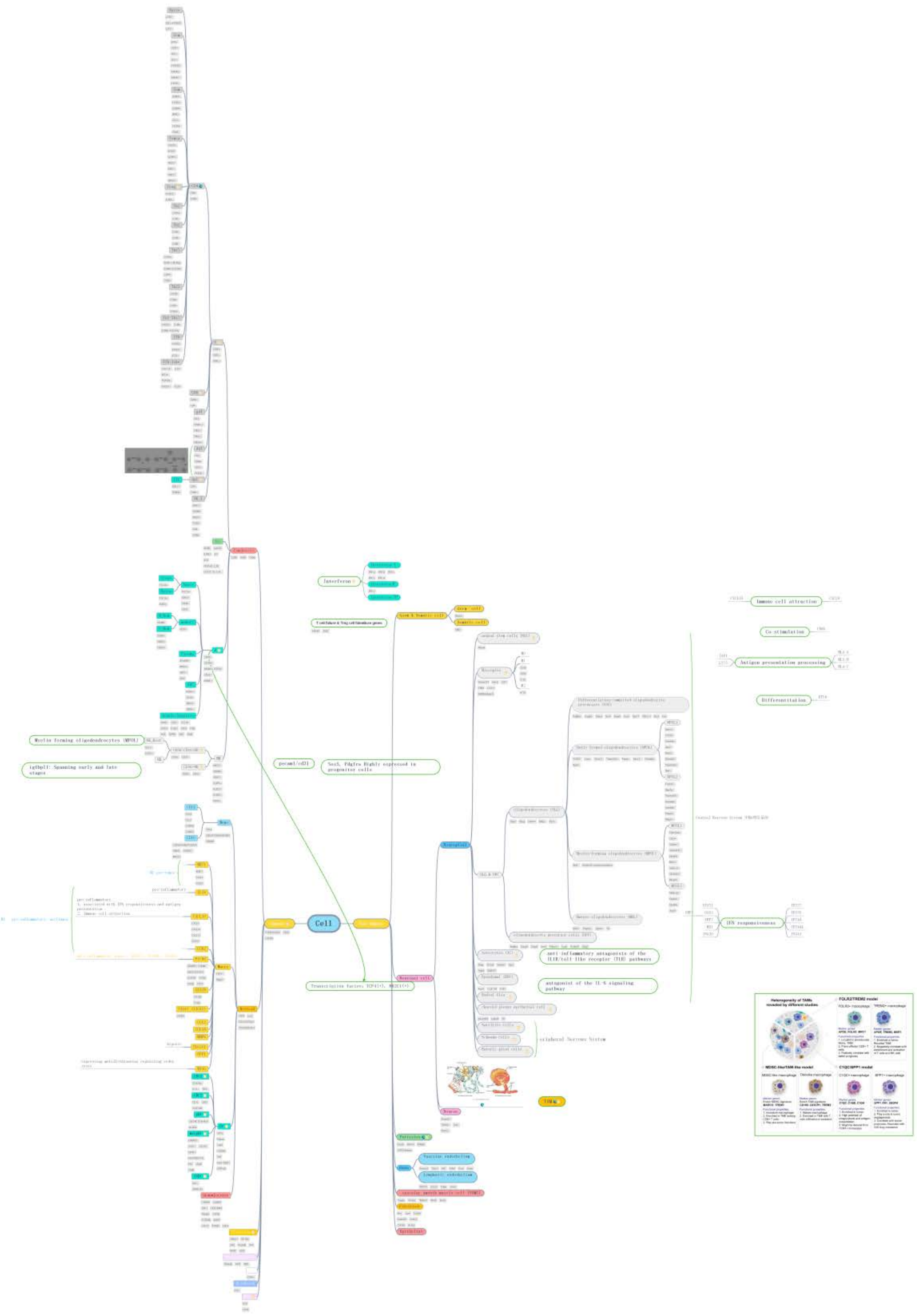

Figure S11 Marker genes for cellular annotation.