

Supplementary

Xu, S. ., Zhang, P. ., Qiao, L. ., Shen, G. ., Li, Y. ., & Zhu, D. . (2025). Transcriptome Analysis of the Protective Mechanism of Ectoine on Human Skin Keratinocytes. *Biomedical Research and Therapy*, 12(8), 7621-7632. <https://doi.org/10.15419/bhcnq037>

Table S1 Proliferation rate (%) of HaCaT cells ($\bar{X}\pm S$)

Ectoine concentration(mg/ml)	<i>n</i>	Cell viability (%)
0.00	3	100.00±3.70
0.05	3	103.94±1.95
0.10	3	120.12±0.41*
0.20	3	134.00±3.22*
0.30	3	122.01±1.99*
0.40	3	115.89±0.88*
0.50	3	107.10±2.47*
F	-	76.21
<i>P</i> _{value}	-	<0.05

Table S2 Apoptosis rate (%) of HaCaT cell ($\bar{X}\pm S$)

Ectoine concentration(mg/ml)	<i>n</i>	Apoptosis rate (%)
0.00	3	4.65±0.57
0.20	3	1.91±0.19*
F	-	9.564
<i>P</i> _{value}	-	<0.01

Table S3 Intracellular ROS levels in HaCaT ($\bar{X}\pm S$)

Ectoine concentration(mg/ml)	<i>n</i>	Mean
0.00	3	6888.5±143.69
0.02	3	5767.23±127.3*
F	-	1.273
<i>P</i> _{value}	-	<0.001

Table S4 DEGs related to oxidation, apoptosis, and aging

Gene name	Gene description	Log2FC(E/H)	Significant	Regulate
<i>MMP25</i>	Matrix metalloproteinase 25	-1.030862449	Yes	Down
<i>ANGPTL4</i>	Angiopoietin-like 4	-2.87032937	Yes	Down
<i>NOXO1</i>	NADPH oxidase organizer 1	-1.354485907	Yes	Down
<i>FoxO6</i>	Forkhead box O6	-1.01157574	Yes	Down
<i>CNFN</i>	Cornifelin	1.076813265	Yes	Up

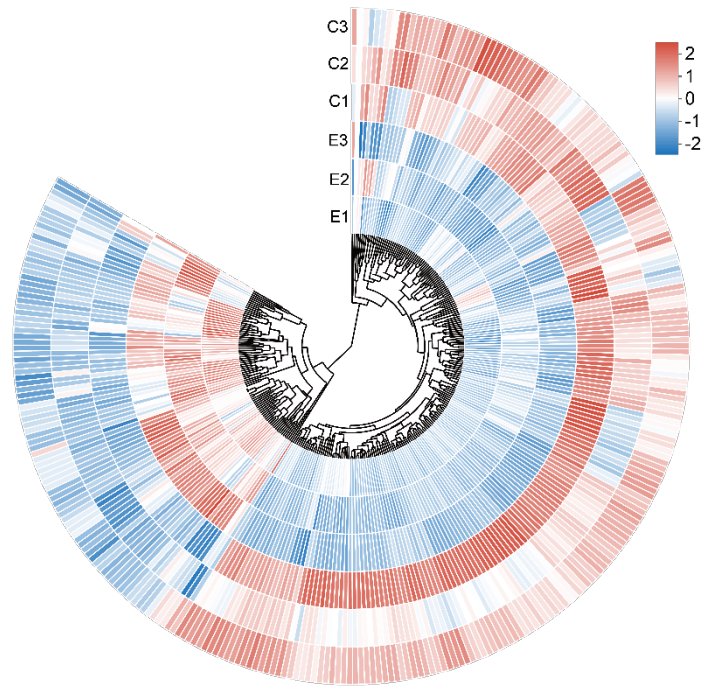


Figure S1 Circle Heatmap of DEGs

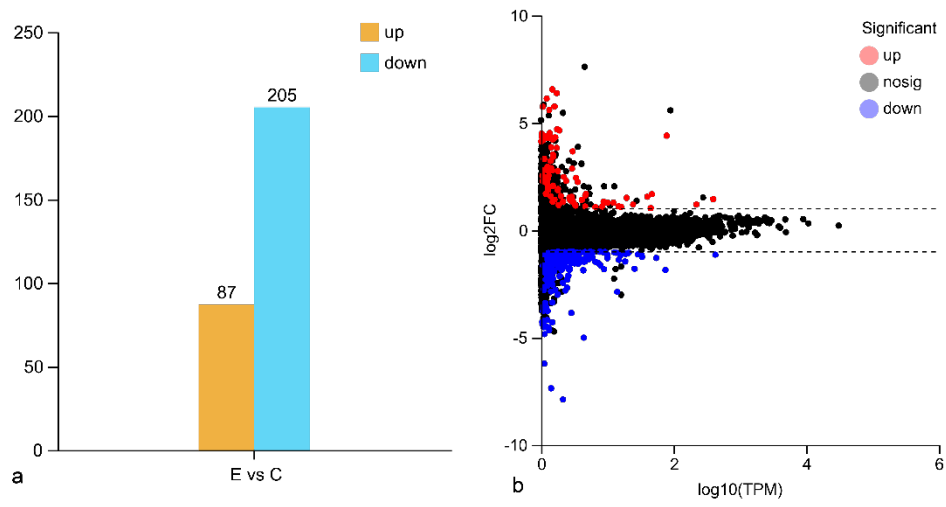


Figure S2 Statistical analysis of expression differences. **a:** Statistical histogram of expression difference. **b:** MA map of expression difference