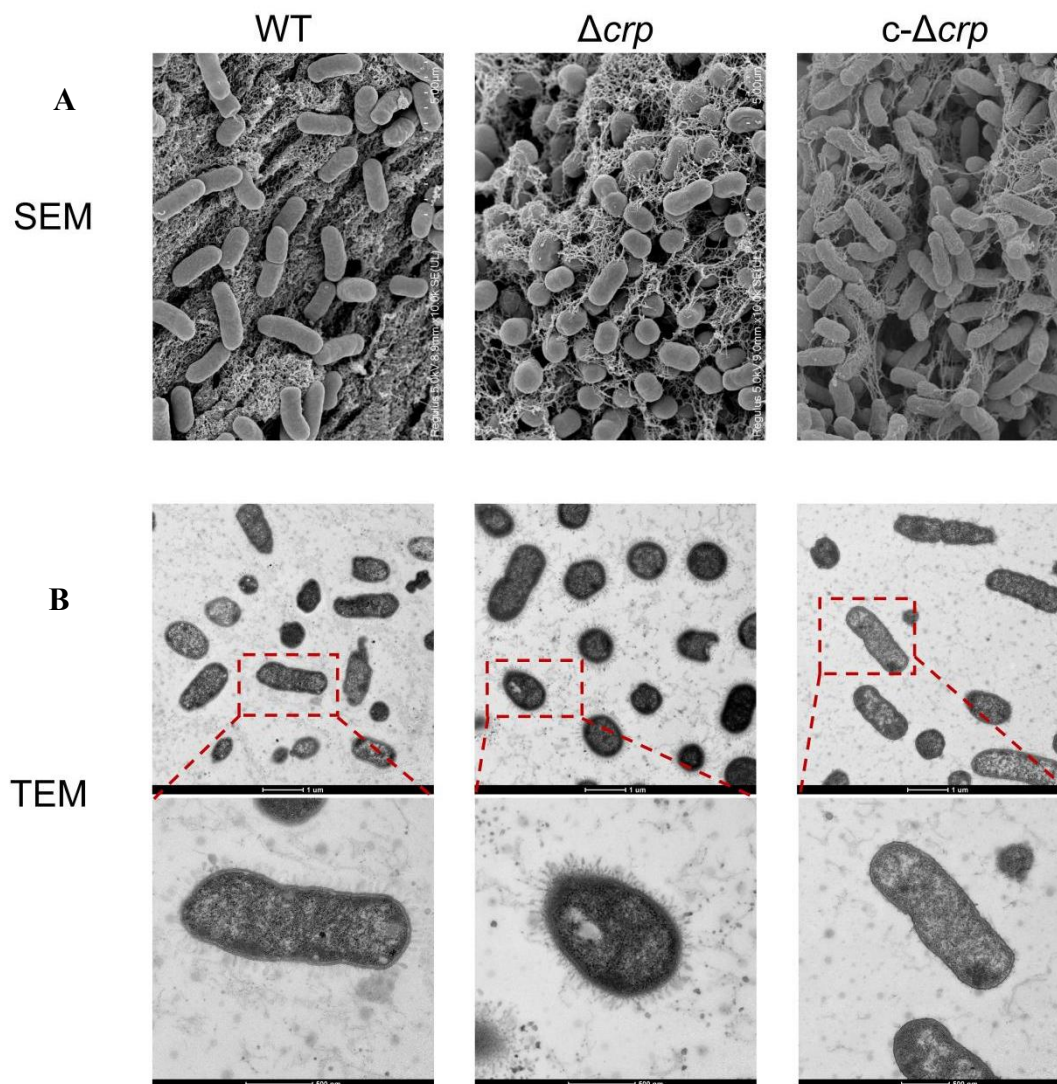
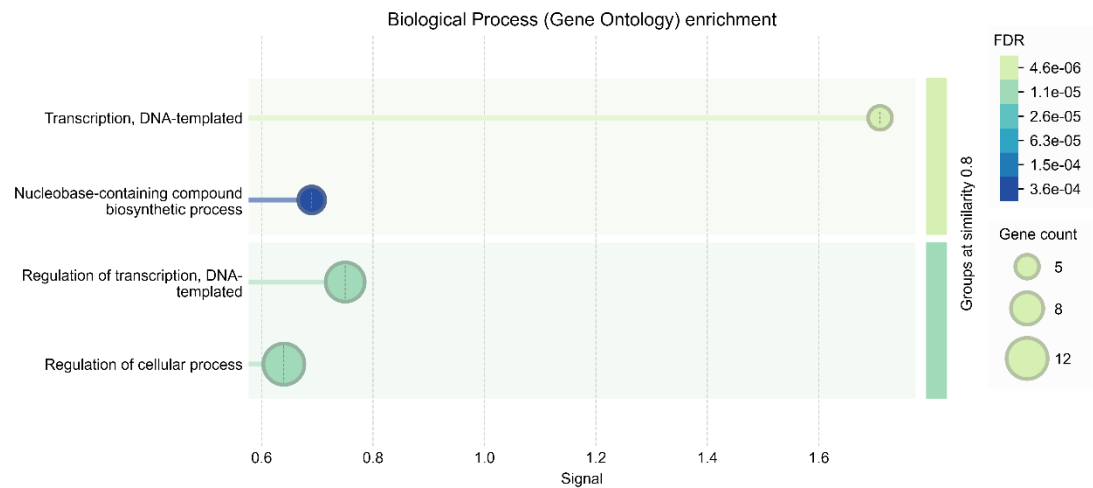


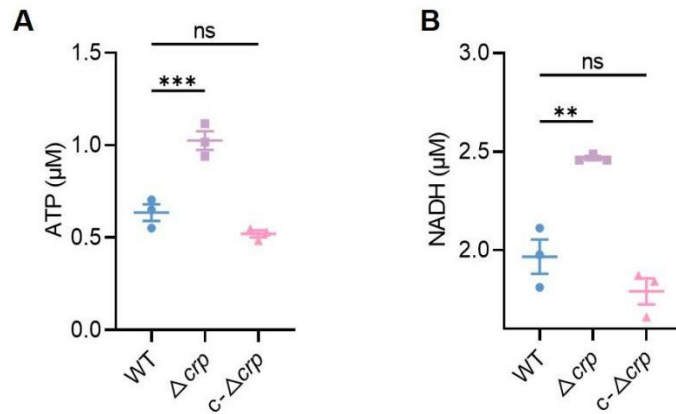
Supplemental Figure



Supplementary Figure S1. Morphological analysis of CRP-deficient *K. pneumoniae*. (A) Scanning electron microscopy (SEM) images of WT, Δcrp , and complemented strains ($c-\Delta crp$). (B) Transmission electron microscopy (TEM) images revealing alterations in cell surface architecture in the Δcrp strain.



Supplementary Figure S2. Genes associated with CRP in the protein-protein interaction (PPI) network are enriched in transcription and cellular regulation pathways.



Supplementary Figure S3. CRP deletion disrupts intracellular energy and redox homeostasis. Intracellular ATP and NADH levels in WT, Δcrp and c- Δcrp strains were measured at mid-logarithmic phase and normalized to total protein content. The Δcrp strain exhibited significantly elevated ATP (A) and NADH (B) levels compared with the WT strain, indicating a disruption of metabolic homeostasis and altered utilization of carbon-derived metabolic intermediates. Data represent mean $\pm$ SD of three independent experiments. ** $p < 0.01$, and *** $p < 0.001$ by unpaired t-test. Statistical significance is indicated as ns (not significant).

Supplemental Table

Table S1 Primers used in this study.

Primer name	Primer sequence (5'-3')
<i>crp</i> -Up-F	AGGTCAGCTTCACTTCGCAA
<i>crp</i> -Up-R	caatacgccgcttagcaaGCGCGGTTATCCTCTGTTATA
<i>crp</i> -Down-F	aacagaggataaccgcgcGTTGCTAAGCGGCGTATTGCTCCC
<i>crp</i> -Down-R	TTAAACACGCCGTACCACAG
<i>crp</i> -sgRNA	AAGAGCACGCTGATCCACCA
<i>crp</i> -ter-F	ATGGTGCTTGGCAAACCGCAAAC
<i>crp</i> -ter-R	TTAACGGGTGCCGTAGACGACGA
<i>crp</i> -ptac-F	TACCATGGAAGCTTACATGGTGCTTGGCAAACCGCAAAC A
<i>crp</i> -ptac-R	tggtcggtgaggaattcTTAACGGGTGCCGTAGACGACGAT
ptac- <i>crp</i> -F	GTCTACGGCACCCGTTAAgaattcctcaacgaacaaggc
ptac- <i>crp</i> -R	GTTTGCCAAGCACCATGTAAGCTTCCATGGTATATCTCCT
pCMtac-F	GAAGCCGGCGGCACCTCGCTAAC
M13R	AGCGGATAACAATTTACACACAGG
<i>entC</i> -RT-F	CCCGGAGCAGGACGCGTTTTTAGC
<i>entC</i> -RT-R	TCGGAGAGCGGCACGTGGAAGTTA
<i>rho</i> -RT-F	AACTACGACAAGCCGGAAAA
<i>rho</i> -RT-R	ACCGTTACCACGCTCCATAC
<i>entC-lacZ</i> -F	ttcacaccggaattcCGGCCAGTCCGCCTGGGCT
<i>entC-lacZ</i> -R	tccgtaatcatggtcatATCATCCTCCAAAAACGATAAG
M13(FAM)-EMSA-F	TGTAAAACGACGGCCAGT
M13-EMSA-R	CCAGTATCGACAAAGGAC
malX-F	GATATTGCCGTCGGTGTTC
malX-R	TTCTGTTCCTGTTTCGTGGC
mtlA-F	ACCTGAGCCATGTGCGTAAA

mtlA-R	GCAGGTTATTGATGGCGCTG
srlA-F	CTCGGTCGGTTTATGCCAGA
srlA-R	GCGATGCCGAGATAGACGAA
srlB-F	GTGCCTGAAGATGACCGTGA
srlB-R	GCTCGCCGTGGTTGTGAATA
srlE-F	CTACCCCAAGCGTCGTATCC
srlE-R	TGACGCCGGAGACGTAGATA
