### Table S1 Primer sequences for RT-qPCR

| Gene     | Sequence                                                                 |
|----------|--------------------------------------------------------------------------|
| p38      | F: 5’-GCTGAAGATTCTGGATTTTG-3’                                            |
|          | R: 5’-GTTCTTCCAGTCAACAGCTC-3’                                            |
| ERK      | F: 5’-TACACCAACCTCTCGTACATCG-3’                                          |
|          | R: 5’-CATGTCTGAAGCGCAGTAAGATT-3’                                         |
| JNK      | F: 5’-GGGACTTAAGCCAGTAAT-3’                                              |
|          | R: 5’-CAGACCATAAAATCCACGTTT-3’                                           |
| P53      | F: 5’-CCTCCTCAGCATTTATCC-3’                                              |
|          | R: 5’-ACAAACACGCACCTCAA-3’                                               |
| Caspase 3| F: 5’-ATGGACAAACAACGAAACCTC-3’                                           |
|          | R: 5’-TTAGTGATAAAAGTACAGTTCTT-3’                                         |
| β-actin  | F: 5’-ACACCCCAGCCATGTAGCC-3’                                             |
|          | R: 5’-AAGAGCCTCAGGGCAACGGAACC-3’                                         |

Notes: RT-qPCR, reverse transcription quantitative polymerase chain reaction; ERK, extracellular signal-regulated kinase; JNK, c-Jun N-terminal kinase; F, forward; R, reverse.
| Antibodies                  | Company | Catalog number | Dilution | Species produced |
|----------------------------|---------|----------------|----------|------------------|
| Anti-p53                   | Abcam   | ab1101         | 0.7361111111 | Mouse            |
| Anti-cleaved-caspase 3     | Abcam   | ab2302         | 0.3888888889 | Rabbit           |
| Anti-pro-caspase 3         | Abcam   | ab32499        | 0.7361111111 | Rabbit           |
| Anti-p-p38                 | Abcam   | ab178867       | 0.7361111111 | Rabbit           |
| Anti-p38                   | Abcam   | ab31828        | 0.7361111111 | Rabbit           |
| Anti-p-ERK                 | Abcam   | ab201015       | 0.7361111111 | Rabbit           |
| Anti-ERK                   | Abcam   | ab54230        | 0.7361111111 | Mouse            |
| Anti-p-JNK                 | Abcam   | ab124956       | 0.7361111111 | Rabbit           |
| Anti-JNK                   | Abcam   | ab179461       | 0.7361111111 | Rabbit           |
| Anti-cleaved-PARP          | Abcam   | ab32064        | 0.7361111111 | Rabbit           |
Table S3 Quantitative analysis for biochemical indexes of rats in the control and HZC groups

| Index  | Control group | HZC group | p    |
|--------|---------------|-----------|------|
| ALT (U/L) | 51.63 ± 3.26 | 52.78 ± 6.45 | 0.731 |
| AST (U/L) | 98.36 ± 4.15 | 99.36 ± 3.15 | 0.679 |
| CRE (umol/L) | 49.35 ± 2.85 | 50.11 ± 3.14 | 0.699 |
| ALB (g/L) | 32.59 ± 1.62 | 33.15 ± 1.56 | 0.593 |
| BUN (mmol/L) | 7.52 ± 1.93 | 7.34 ± 2.13 | 0.892 |
| TBL (mg/dL) | 0.71 ± 0.07 | 0.75 ± 0.08 | 0.939 |

Notes: HZC, hydrazinocurcumin; ALT, alanine aminotransferase; AST, aspartate aminotransferase; CRE, creatinine; ALB, albumin; BUN, blood urea nitrogen; TBL, total bilirubin. The data were expressed as mean ± standard deviation and the data between two groups were analyzed by t-test, n = 5. The experiment was repeated three times.