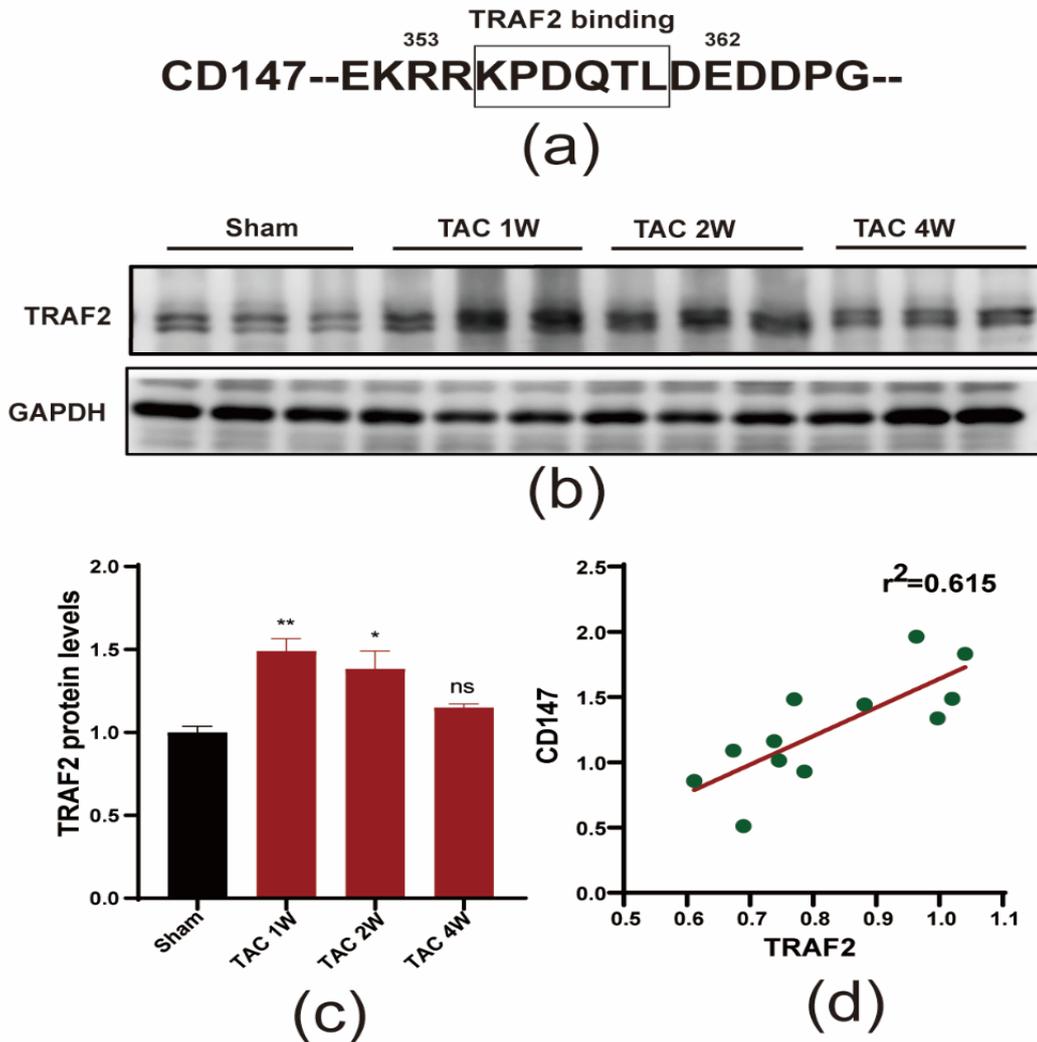
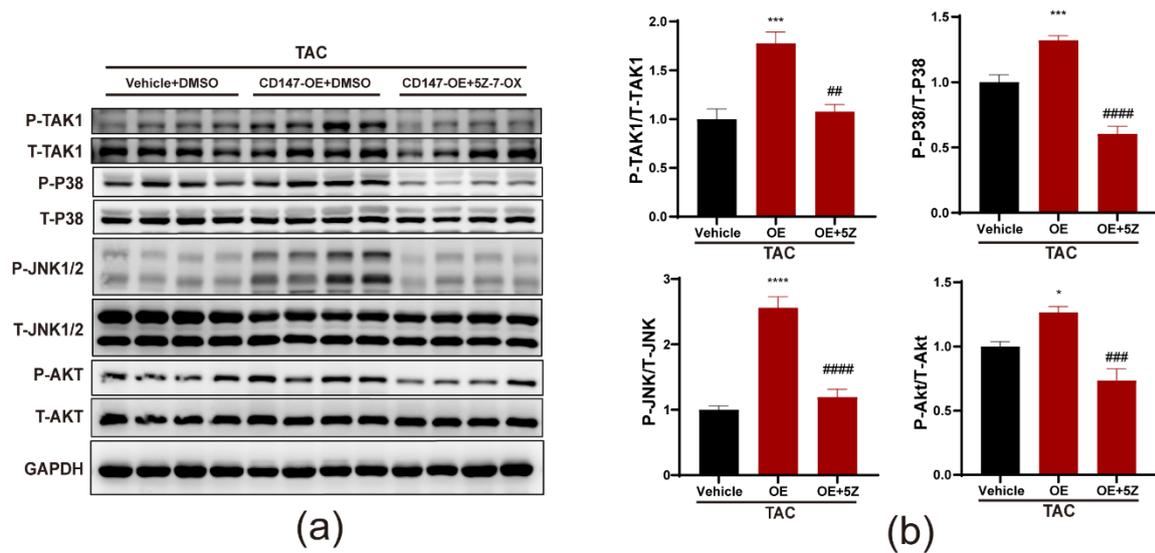


**Supplementary Figure S1: Schema for intramyocardial injection of adeno-associated virus in mouse hearts.** (a) The hair was removed by commercially available depilatory cream. (b) Sterilization of the operative site using several scrubs of povidone-iodine. (c) A sterile drape was employed to cover the operative site. (d) 0.5-cm skin incision along the line connecting axilla and xiphoid. (e) Hearts were exposed through left thoracotomy at the 5th intercostal space with the help of forceps and a micro-mosquito hemostat. (f) AAV was delivered via direct injection into the left ventricular wall via Hamilton syringe (5 sites, 10  $\mu$ l/site). (g-h) Closure of the skin and analgesic treatment.



**Supplementary Figure S2: TRAF2 was upregulated in mouse hearts after sustained pressure overload.** (a) CD147 possesses TRAF2-binding motif in its cytoplasmic domain. (b-c) Representative immunoblotting and statistical analysis of TRAF2 expression levels in cardiac tissue after TAC in indicated time points (n=3). \*P < 0.05 vs the Sham group; \*\*P < 0.01 vs the Sham group. (d) Correlation analysis between CD147 and TRAF2 protein expression levels in response to pressure overload in indicated time points (n=3).



**Supplementary Figure S3: Blocking TAK1 activity reduced the downstream activation of CD147-mediated TRAF2-TAK1 signalling.** (a-b) Representative western blots and quantitative results of the phosphorylated and total protein levels of TAK1, P38, P-JNK1/2 and Akt in hearts from vehicle and CD147-OE mice after TAC treated DMSO or 5Z-7-ox (n=4). \*P < 0.05 vs the Vehicle group; \*\*\*P < 0.001 vs the Vehicle group; \*\*\*\*P < 0.0001 vs the Vehicle group; #P < 0.05 vs the CD147-OE group; ###P < 0.01 vs the CD147-OE group; ####P < 0.001 vs the CD147-OE group; #####P < 0.0001 vs the CD147-OE group.

**Supplementary Table S1. Mouse primers sequences for qRT-PCR**

Primer	Sequences
ANP	Forward:5'- CGTGCCCCGACCCACGCCAGCATGG -3' Reverse:5'- GCCTCCGAGGGCCAGCGAGCAGAGC -3'
BNP	Forward:5'- GAGGTCACCTCCTATCCTCTGG -3' Reverse:5'- GCCATTTCTCCGACTTTTCTC -3'
$\alpha$ -MHC	Forward:5'- TGCCTACGGAAACATGAAGTT -3' Reverse:5'- CGATGGAATAGTACACTTGCTGT - 3'
$\beta$ -MHC	Forward:5'- ACTGTCAACACTAAGAGGGTCA -3' Reverse:5'- TTGGATGATTTGATCTTCCAGGG -3'
Collagen I	Forward:5'- GAGCGGAGAGTACTGGATCG -3' Reverse:5'- TACTCGAACGGGAATCCATC -3'
Collagen III	Forward:5'- CCATAGCTGAACTGAAAACCACC - 3' Reverse:5'- CTGTAACATGGAAACTGGGGAAA - 3'
MMP2	Forward:5'- CAAGTTCCCCGGCGATGTC -3' Reverse:5'- TTCTGGTCAAGGTCACCTGTC -3'
CTGF	Forward:5'- GGGCCTCTTCTGCGATTTC -3' Reverse:5'- ATCCAGGCAAGTGCATTGGTA -3'
GPX4	Forward:5'- GCCTGGATAAGTACAGGGGTT -3' Reverse:5'- CATGCAGATCGACTAGCTGAG -3'
NOX4	Forward:5'- GAAGGGGTAAACACCTCTGC -3' Reverse:5'- ATGCTCTGCTTAAACACAATCCT -3'
FTH1	Forward:5'- CAAGTGCGCCAGAACTACCA -3' Reverse:5'- GCCACATCATCTCGGTCAAAA -3'
GAPDH	Forward:5'- GAGGTCACCTCCTATCCTCTGG -3' Reverse:5'- GCCATTTCTCCGACTTTTCTC -3'