Supplementary Figure S1: Dose dependent effect of NCCL. TTC stained heart section A, Vehicle Sham and Vehicle MI/RP; B, NCCL Sham and NCCL-50mg/kg MI/RP; C, NCCL-100mg/kg and NCCL-125mg/kg. D, Marker compound-(I) 7,7-dimethyl-5-(2-p-tolylpropyl)-6,7-dihydro-1,3,4-oxadiazepin-2-amine. E, percent infarct size of TTC stained hearts.
**Supplementary Figure S2**

**A**

- Vehicle sham
- Vehicle MI/RP
- NCCL sham
- NCCL MI/RP

**B**

- Control
- TNF-α (10ng/mL)
- NCCL-10μg/mL

**CD146^+**

**Caption**

**Supplementary Figure S2**: Reduced EMP production *in vivo* and *in vitro* after NCCL treatment. **A**, Histogram of plasma EMPs of Vehicle sham, Vehicle MI/RP, NCCL sham and NCCL MI/RP. **B**, Dot plot of EMPs after TNF-α and NCCL treatment.
Supplementary Figure S3: Cellular interaction under static and flow based conditions. A, B, E - H, represent adhesion of THP-1 monocytes onto EA.hy926 cells under static condition. C, D, I - L represents adhesion of THP-1 monocytes onto EA.hy926 cells under flow based
Supplementary Figure S4

A  $^1$H NMR (400 MHz, DMSO-d$_6$)  B  $^{13}$C NMR (400 MHz, DMSO-d$_6$)

C  HPLC Chromatogram

Caption

Supplementary Figure S4: NMR and HPLC chromatogram of NCCL. A, represents $^1$H NMR (400 MHz, DMSO-d$_6$): $\delta$ 7.13 (d, 2H, J= 7.68), $\delta$ 7.08 (d, 2H, J= 7.56), $\delta$ 5.93 (S, 2H), $\delta$ 3.01 (dd, 1H, J=6.90), $\delta$ 2.5 (m, 4H), $\delta$ 2.24 (s, 3H), $\delta$ 1.31 (s, 3H), $\delta$ 1.23 (s, 3H), $\delta$ 1.18 (d, 3H, J=6.72). B, represents $^{13}$C NMR (400 MHz, DMSO-d$_6$): 155.41, 153.28, 142.96, 135.04, 128.86, 126.69, 61.66, 50.85, 37.98, 36.55, 26.00, 25.78, 22.29, 20.59. C, represents HPLC fingerprint of NCCL achieved on a Lichrocart RP 18e (250 x 4.6mm, 5µ) column using mobile phase comprising acetonitrile: water (70:30); where C1 represents major marker compound (I); 1: Blank plasma, 2: Plasma spiked with 200 µg/mL NCCL, 3: Plasma at 6 hours after administration of NCCL, 4: Blank methanol, 5: NCCL (200 µg/mL).