

## **Sialic acid-modified dexamethasone lipid calcium phosphate gel core nanoparticles for target treatment of kidney injury**

Hongbing Liu <sup>a</sup>, Hui Zhang <sup>a</sup>, Na Yin <sup>a</sup>, Ying Zhang <sup>a</sup>, Jingxin Gou <sup>a</sup>, Tian Yin <sup>b</sup>, Haibing He <sup>a</sup>, Hong Ding <sup>c, \*</sup>, Yu Zhang <sup>a, \*</sup>, Xing Tang <sup>a</sup>

<sup>a</sup> Department of Pharmaceutics, Shenyang Pharmaceutical University, Wen Hua Road No.103, Shenyang, China

<sup>b</sup> School of Functional Food and Wine, Shenyang Pharmaceutical University, Wen Hua Road No.103, Shenyang, China

<sup>c</sup> Department of Nephrology, The Forth Affiliated Hospital, China Medical University, Chongshan East Road No.4, Shenyang, China

**\*Corresponding author:**

**Professor Yu Zhang**

Tel: +86 24 23986343; Fax: +86 24 23911736. E-mail address: [pharmzy@163.com](mailto:pharmzy@163.com)

**Dr. Hong Ding**

Tel: +86-18900912198; E-mail: [dinghong9209@126.com](mailto:dinghong9209@126.com)

## 1. Cell viability assay

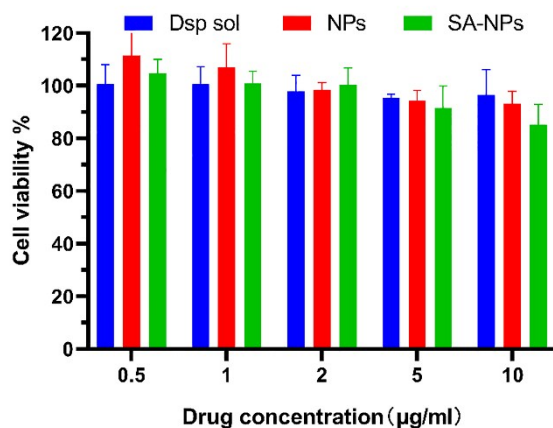


Fig. S1 *In vitro* cell viability experiments with free drugs, NPs and SA-NPs. Three samples were repeated for each group.

## 2. The expression of E-selectin receptors

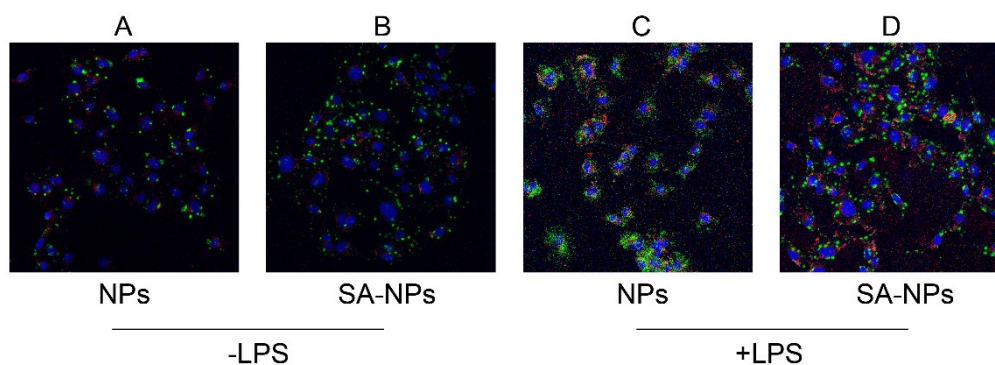


Fig.S2 Immunofluorescence imaging of non-activated (A, B) and LPS-activated (C, D) HUVEC cells after 4 hours incubation with Cy5-loaded NPs (A, C) and SA-NPs (B, D). And an enlarged view of the merged image of confocal imaging of the cell nucleus (blue), nanoparticles (red), and E-selectin receptor (green).

## 3. In vivo pharmacokinetic study

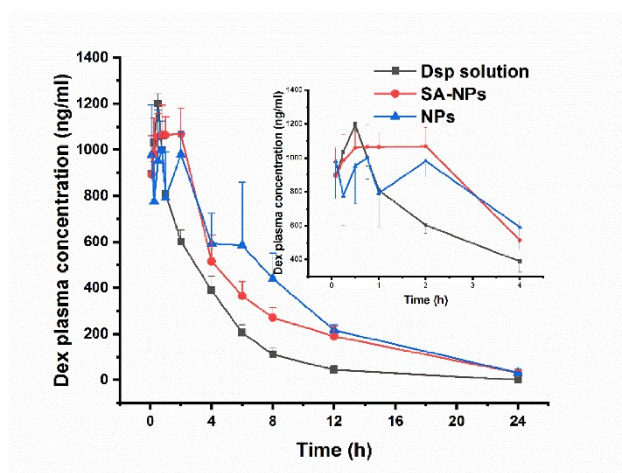


Fig.S3 Mean plasma concentration-time curves of Dex after intravenous Dsp, NPs and SA-NPs with a dose of

1.5mg/kg (n=6).

#### 4. Biodistribution of NPs and SA-NPs

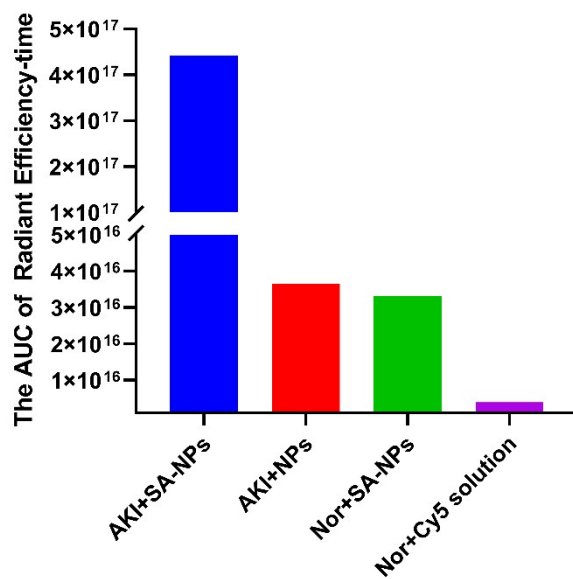


Fig.S4 The AUC of kidney average radiant efficiency-time of different groups in the biodistribution experiment.