# PTEROSTILBENE INHIBITS RENAL FIBROSIS BY BLOCKING TGF-BETA/SMAD SIGNALING IN MICE

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## OBJECTIVES

Renal fibrosis is the key pathological feature and the final common pathway leading to end-stage renal failure(ESRD) in chronic kidney disease. Pterostilbene (PTB) is a naturally derived compound that found primarily in berries and berries. PTB possesses an array of chemopreventive, anti-inflammatory, anti-diabetic, anti-dyslipidemic, anti-atherosclerotic and neuroprotective effects. However, PTB whether can influence the renal fibrosis is unknown.

Here, we investigated the mechanisms and antifibrotic activities of PTB.

## METHODS

In a mice model of renal fibrosis after unilateral ureteral obstruction (UUO), the mice received daily gavage of PTB (25 and 50mg/kg/d) for 7 or 14 days. The HE and MASSON's stainings of kidney tissues were tested. The infiltration of macrophage, mRNA level and protein expression of TGF-beta1 and the phosphorylation of Smad3 were investigated by RT-qPCR and western blot, respectively. The renal expression of a-SMA, Col I, Col IV and FN were also tested.

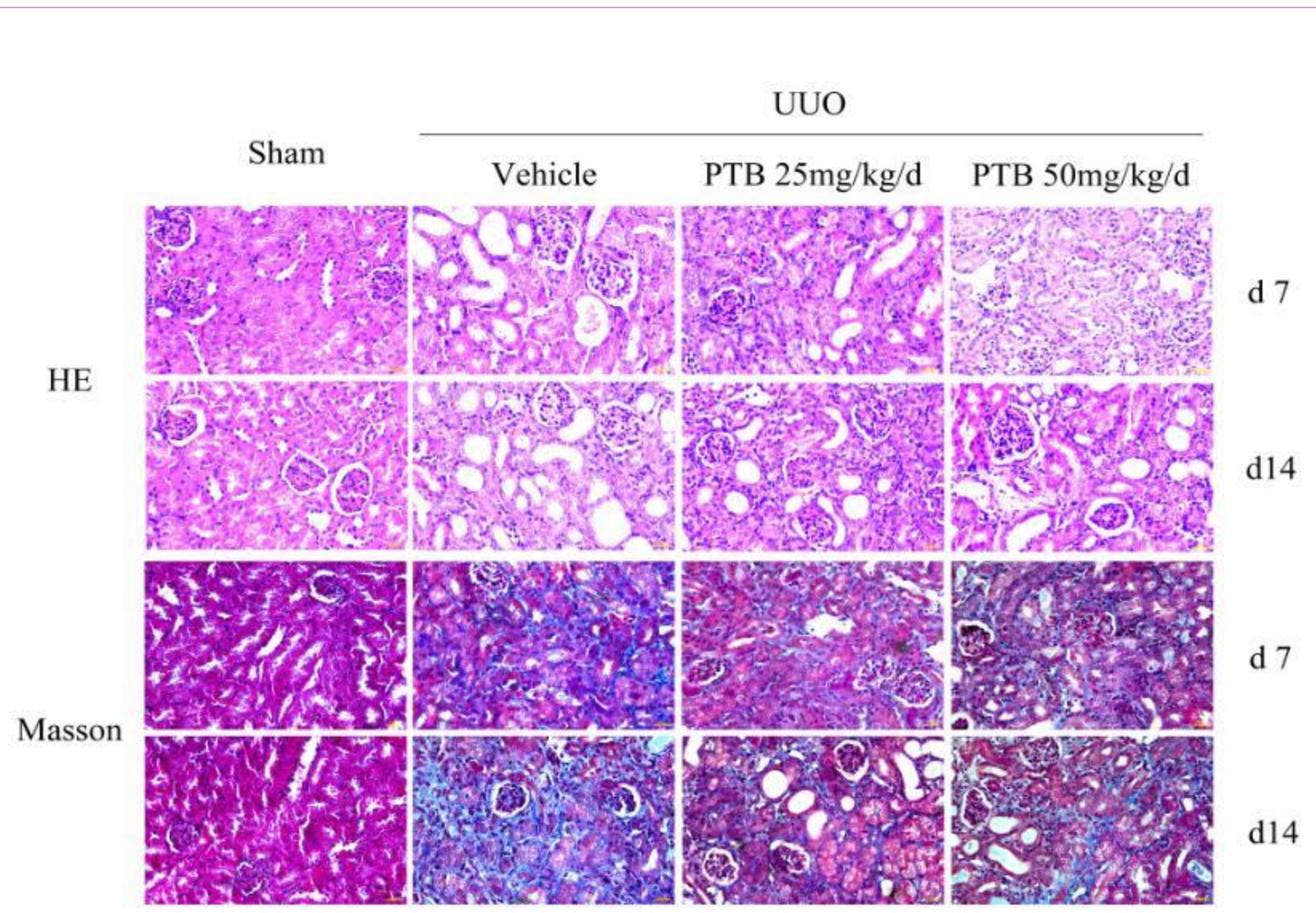


Figure. PTB significantly improved kidney injury in UUO mice.

## RESULTS

After euthanized, representative micrographs of HE and Masson's staining demonstrated PTB significantly improved kidney injury in UUO mice. PTB inhibits expression of TGF-beta1 and the phosphorylation of Smad3 and suppressed renal expression of a-SMA, Col I, Col IV and FN.

## CONCLUSIONS

These observations confirmed that PTB inhibited renal fibrosis by blocking TGF-beta/Smad signaling in macrophage, highlighting that PTB was a potential therapeutic strategy for renal fibrosis.

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