

Inability to adequately buffer trans IL-6 signaling may play a role in development of renal scarring after urinary tract infection



Guillermo Yepes, Sudipti Gupta, Lauren Nicassio, Molly Fuchs, Daryl McLeod, Seth Alpert, Rama Jayanthi, Daniel DaJusta, Brian Becknell, Christina Ching

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Disclosures

- Supported by 2017 research grant from the American Association of Pediatric Urologists



Background

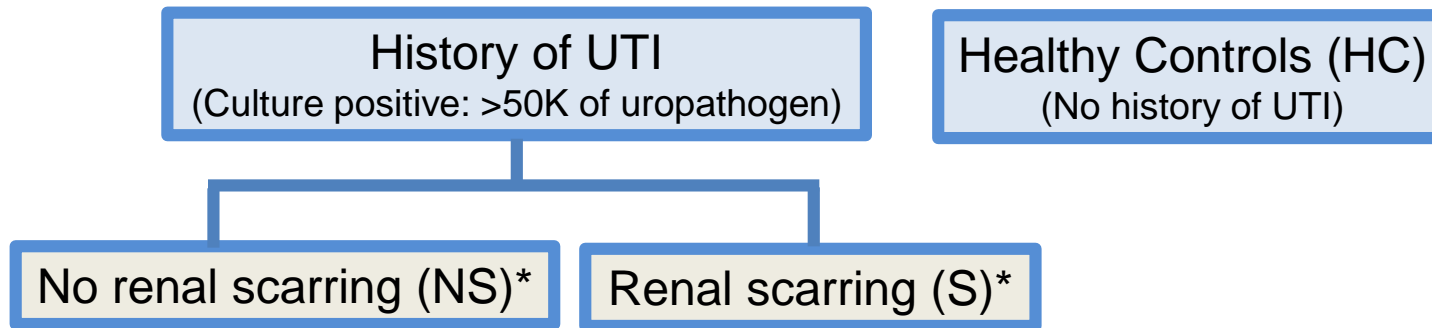
- Inflammation is an important defense against infection
 - Also responsible for local tissue damage
- IL-6 is induced in UTI
 - Signals through two pathways (*Cis* and *Trans*)
 - *Cis/Classic*: anti-inflammatory
 - *Trans*: pro-inflammatory

Hypothesis: activation of the *trans* IL-6 signaling pathway would be associated with the development of renal scarring in patients with a history of UTI

Methods

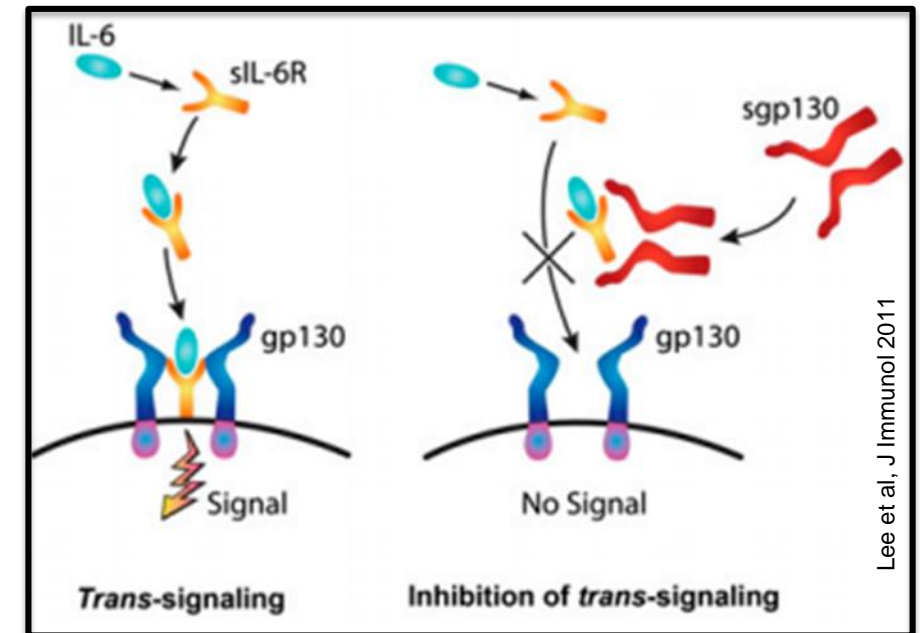
- We evaluated markers of *trans* IL-6 signaling in urine of pediatric patients

Patient Groups



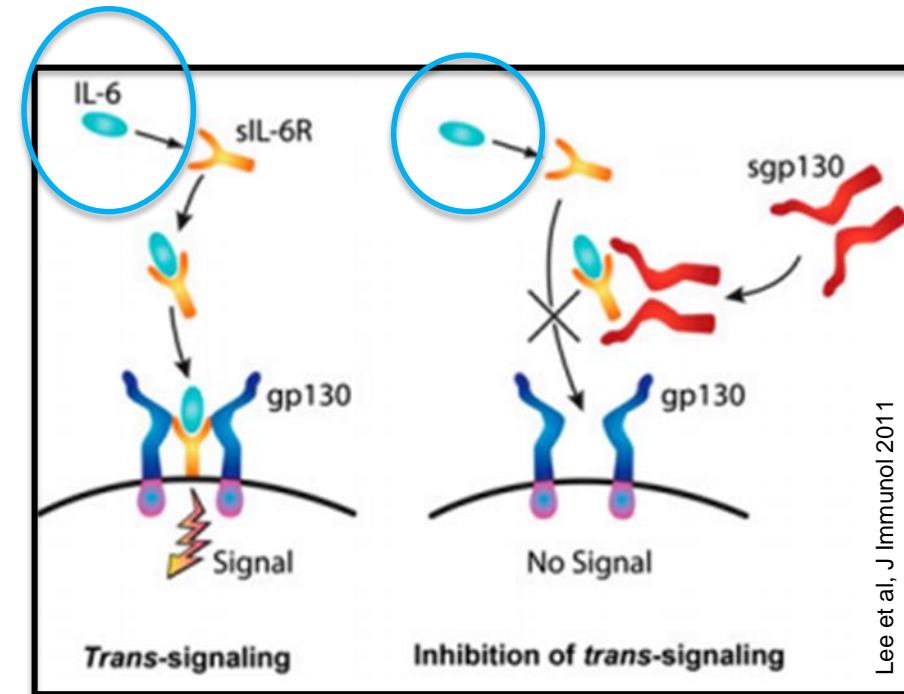
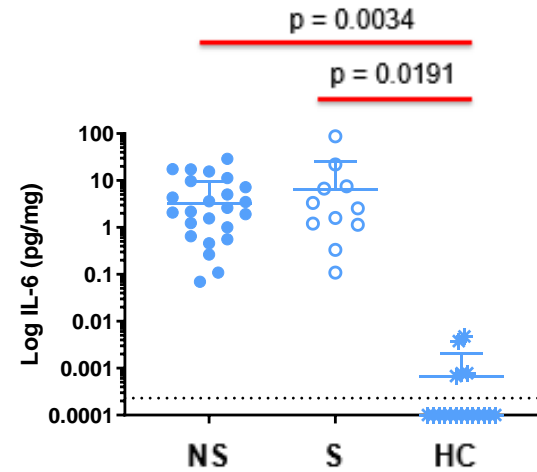
*As documented on renal ultrasound and/or DMSA

- ELISAs: IL-6, soluble IL-6 receptor (R), sgp130
 - Sgp130 is a buffer of *trans* signaling



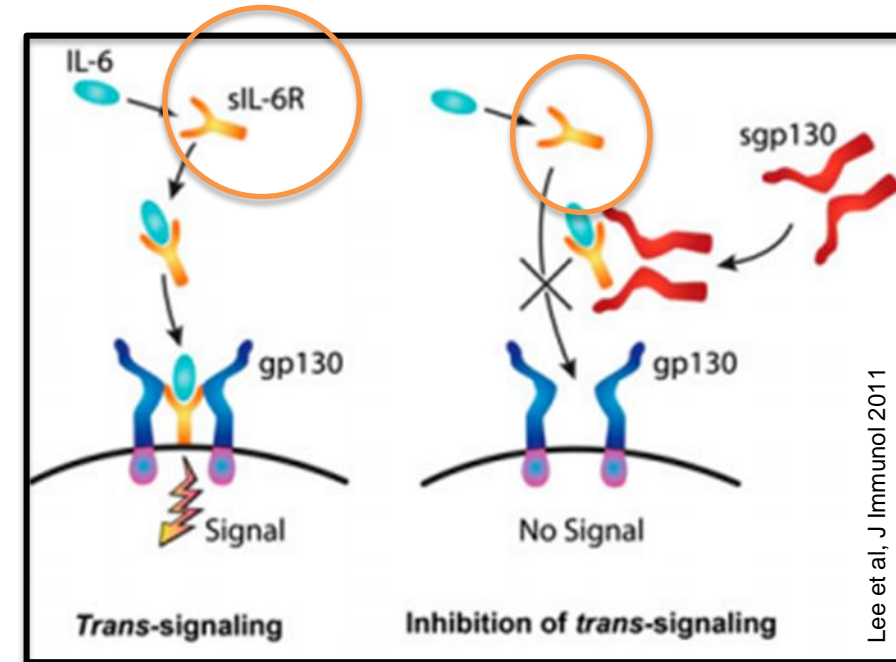
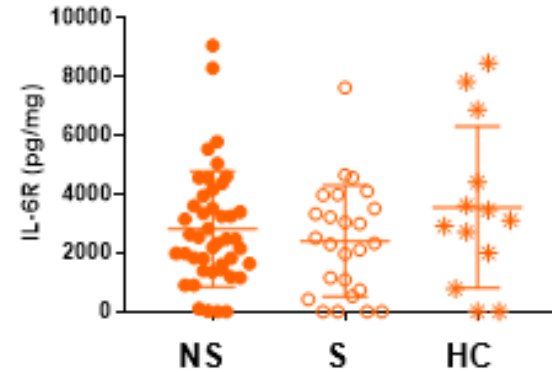
Results

- Significantly more IL-6 in the urine of those with a history of UTI vs. Controls



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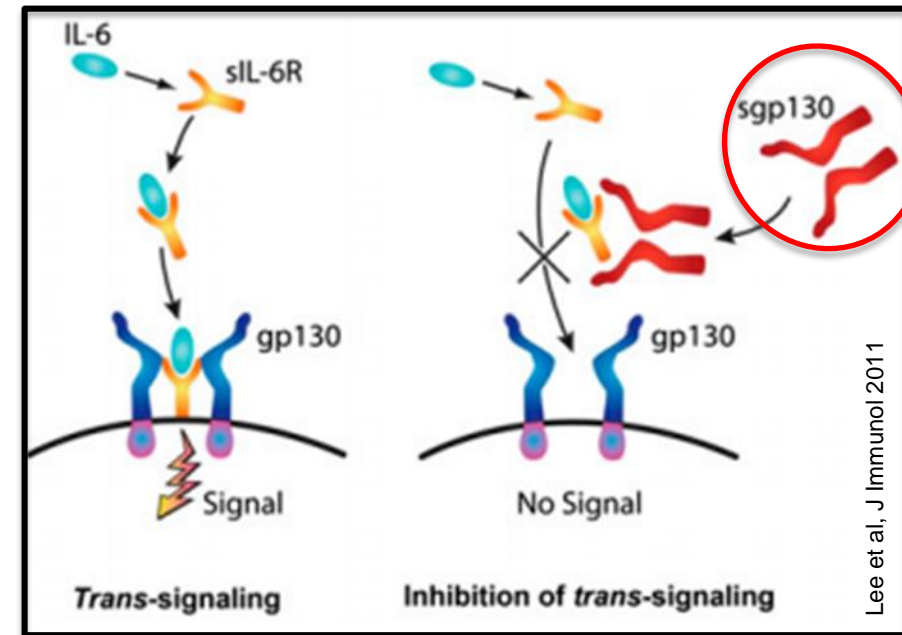
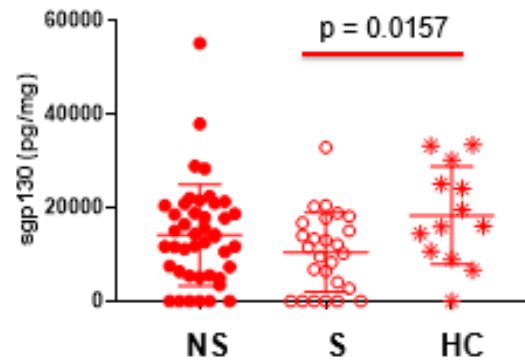
- Significantly more IL-6 in the urine of those with a history of UTI vs. Controls
- No difference in IL-6R amongst groups



Lee et al, J Immunol 2011

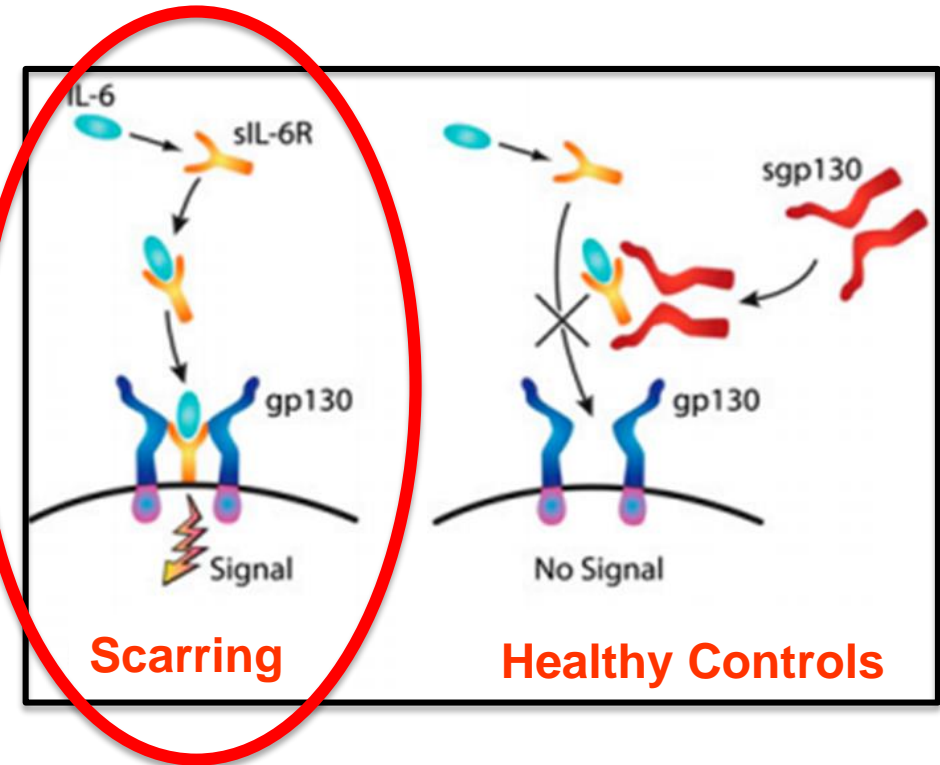
Results

- Significantly more IL-6 in the urine of those with a history of UTI vs. Controls
- No difference in IL-6R amongst groups
- Significantly less sgp130 in those scarred compared to Controls
 - Less sgp130 in scarred vs not scarred ($p=0.1446$)



Conclusions

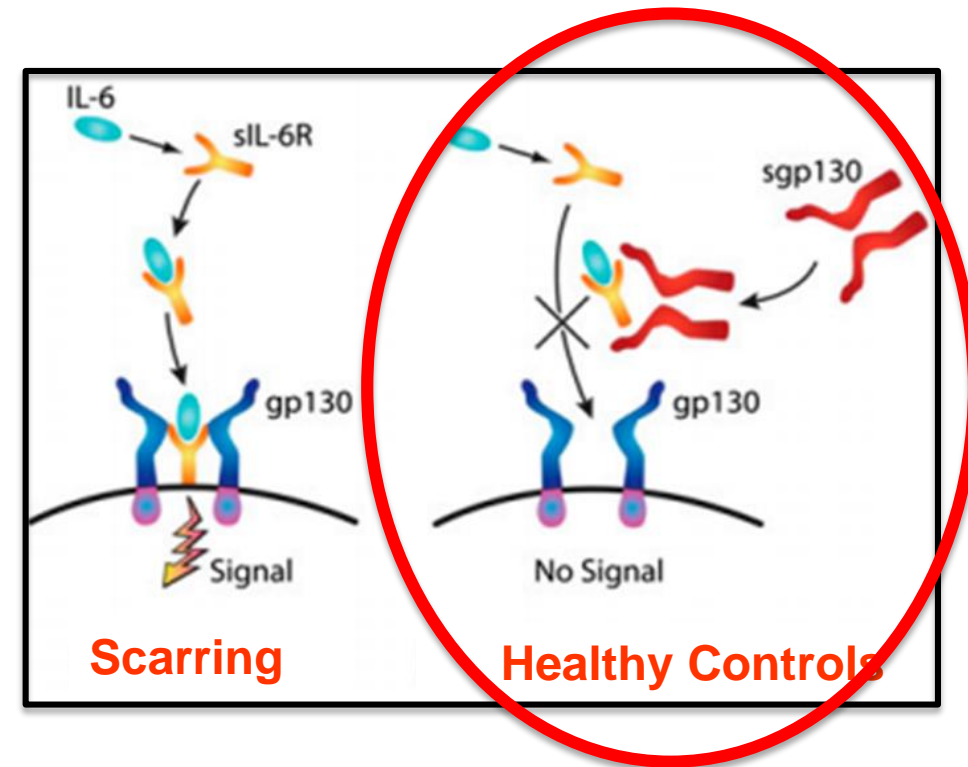
- Urine sgp130 is lower in those with renal scarring vs. controls
 - Basis to think *trans* IL-6 signaling plays a role in development of renal scarring
- Manipulation of *trans* IL-6 signaling may reduce the sequela of UTI



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Conclusions

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