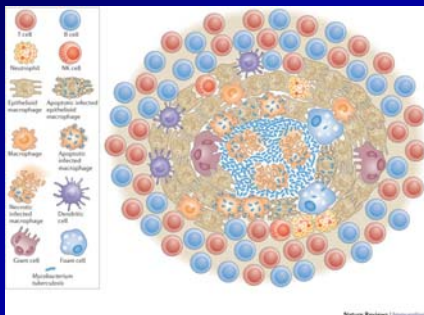


What are the *in vivo* roles of ACE?

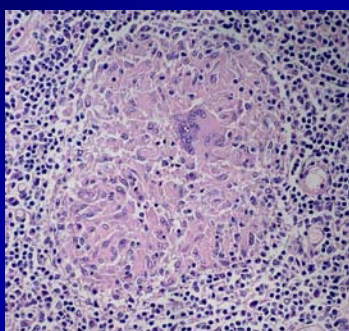
1. Blood pressure control
2. Normal urinary flow
3. Normal male reproduction
4. Normal erythropoiesis
5. Normal myelopoiesis
6. MHC class I peptide diversity
7. Immune response

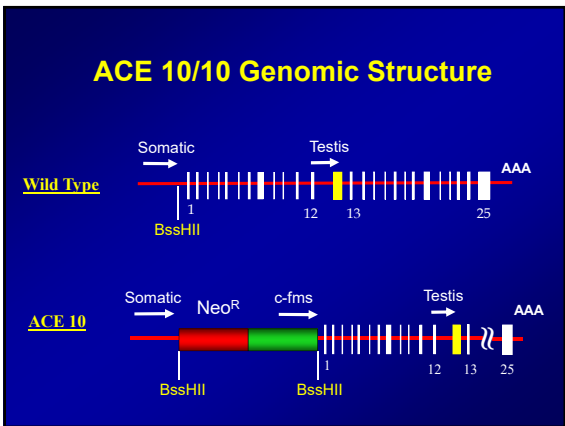
Granuloma

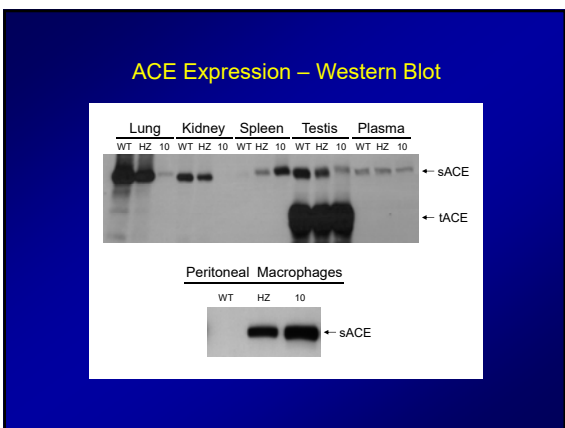


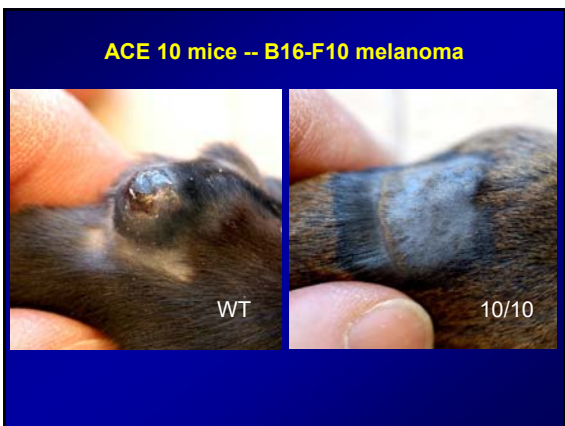
Nature Reviews Immunology 12, 352-366 (May 2012)

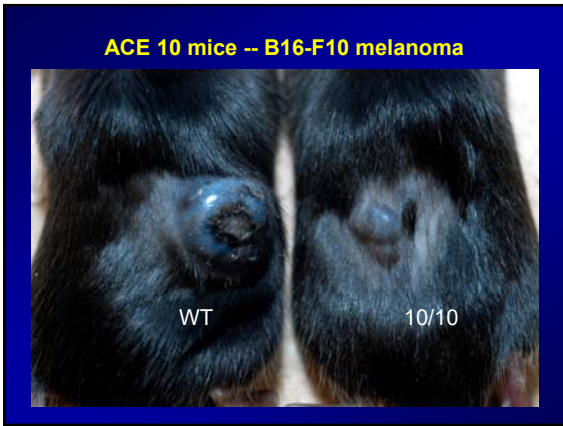
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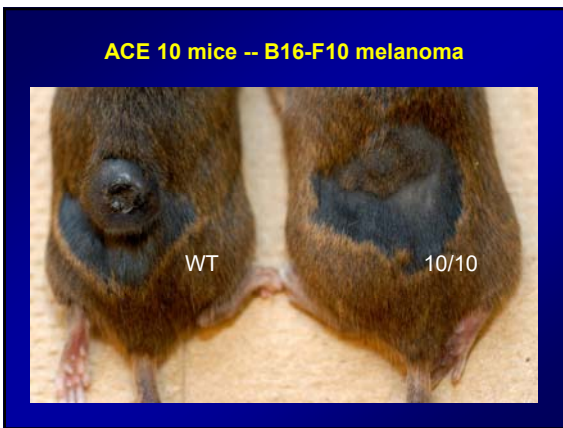


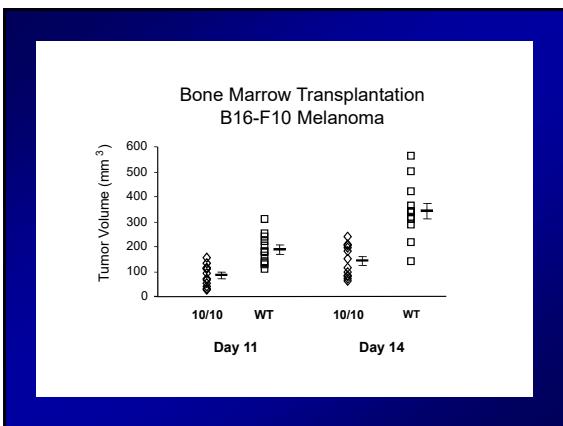




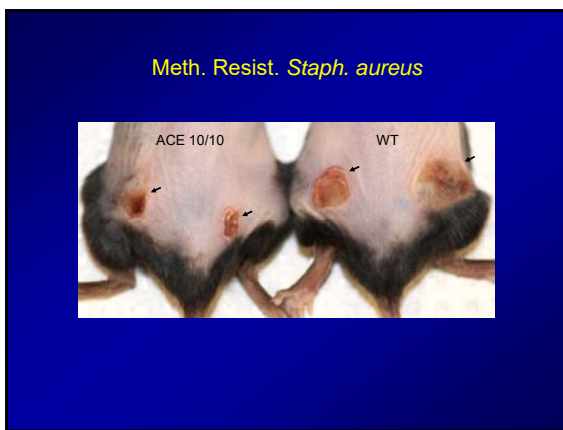


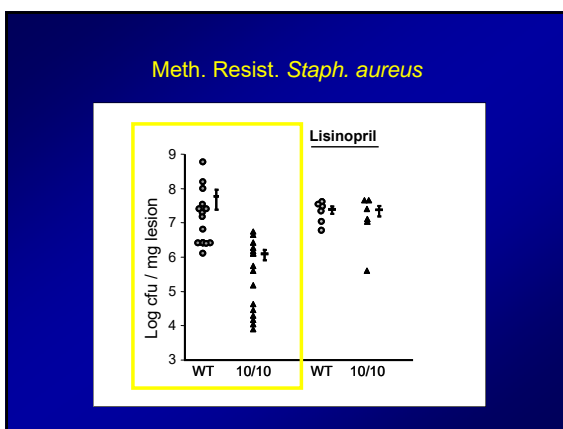


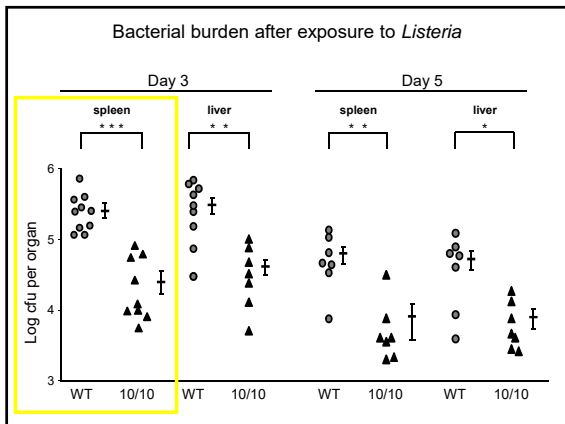






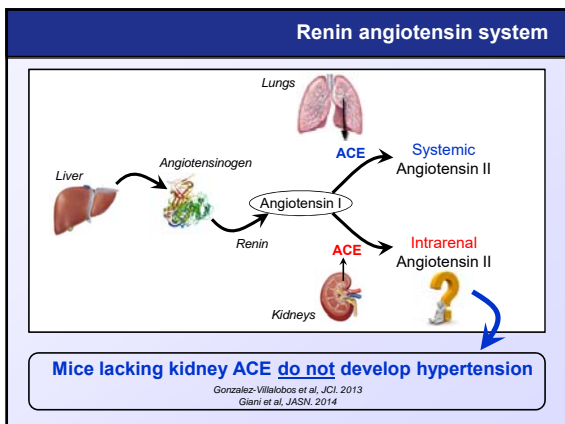




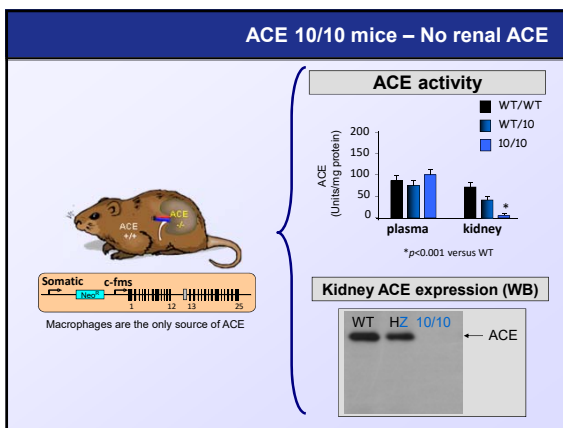


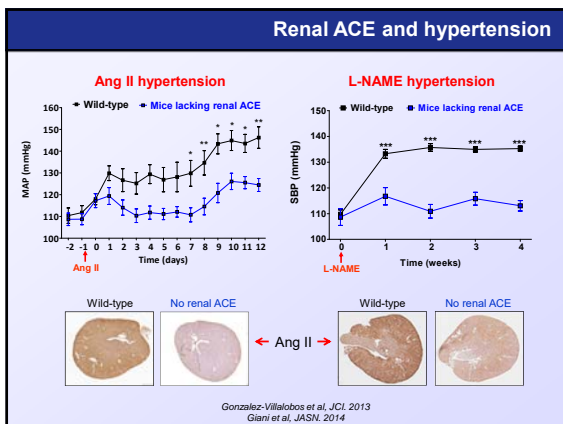
Conclusion:

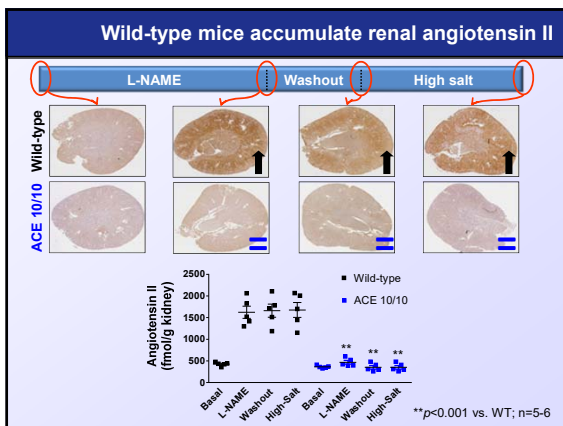
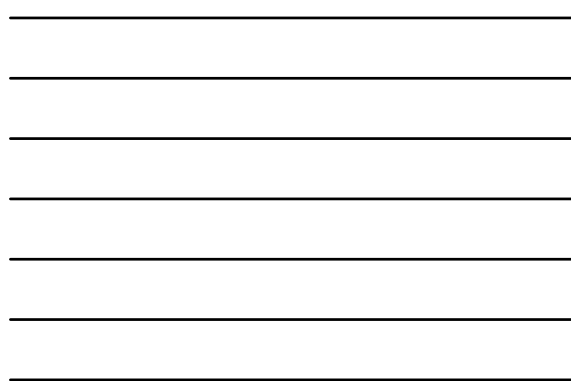
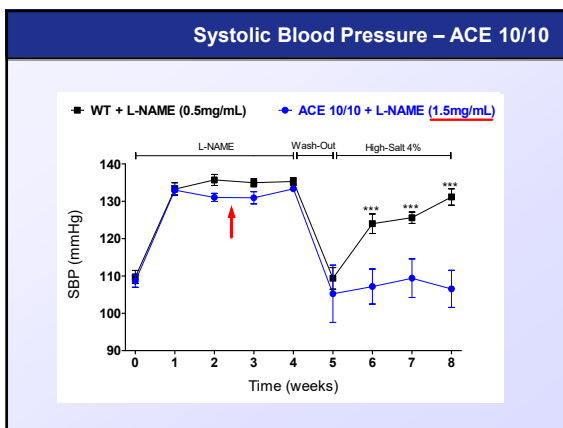
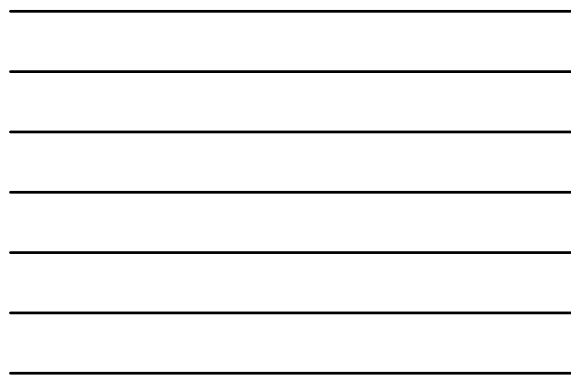
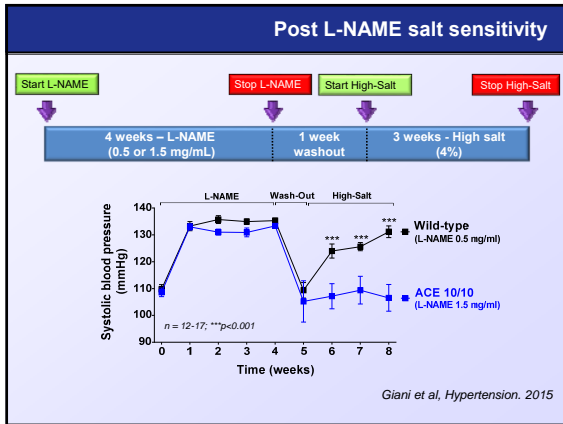
ACE over expression in monocytic/granulocytic cells results in an increased immune response!

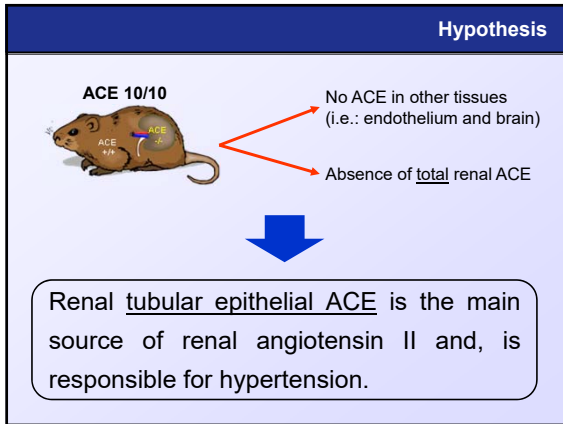


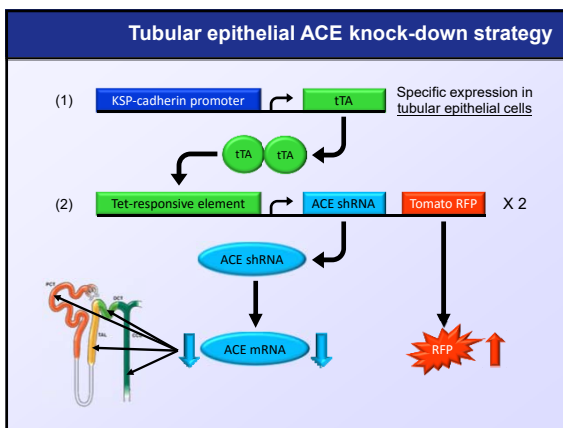
| Name | Description | Renal ACE | Blood pressure |
|-----------|-----------------------------|----------------------------|-------------------------------|
| ACE 1/1 | Total KO | No ACE | Very low with renal pathology |
| ACE 3/3 | ++ Liver ACE | 14% of normal | Normal |
| ACE 1/3 | + Liver ACE | 8% of normal | Normal |
| ACE 9/9 | Renal tubular ACE | 105% of normal tubular ACE | Very low with renal pathology |
| ACE 10/10 | Myeloid ACE | No ACE | Normal |
| ACE 3/9 | Mix of ACE 3/3 and ACE 9/9 | >50% of normal | Normal |
| it-ACE | Renal tubular ACE knockdown | <15% tubular ACE | Normal |

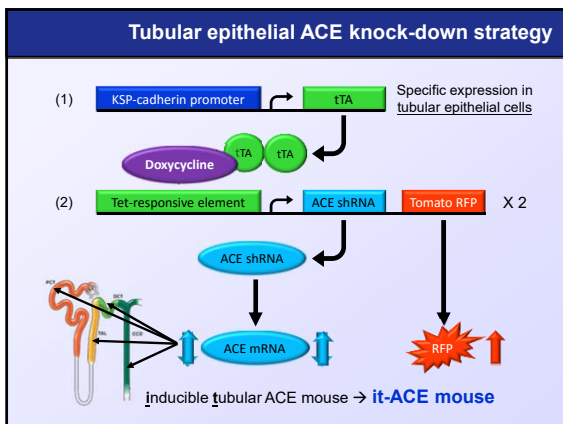


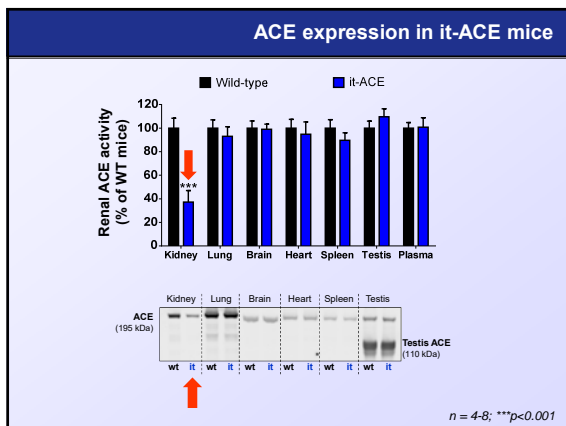


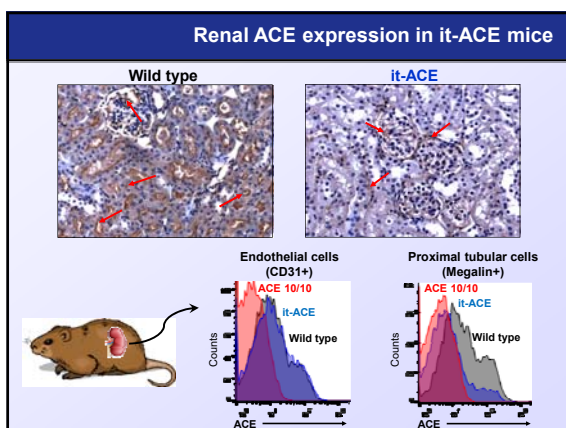


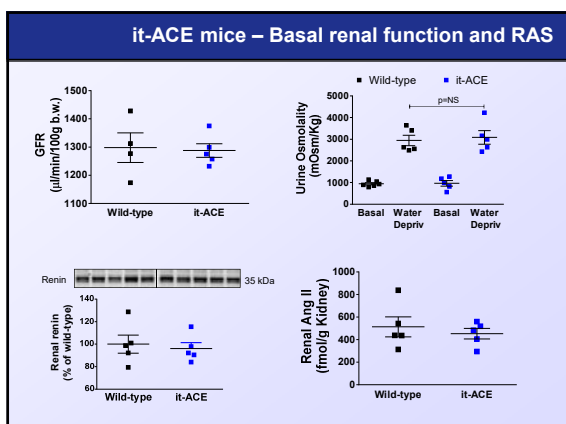


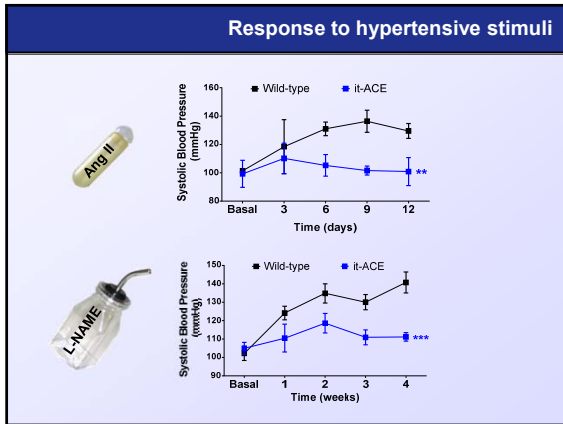


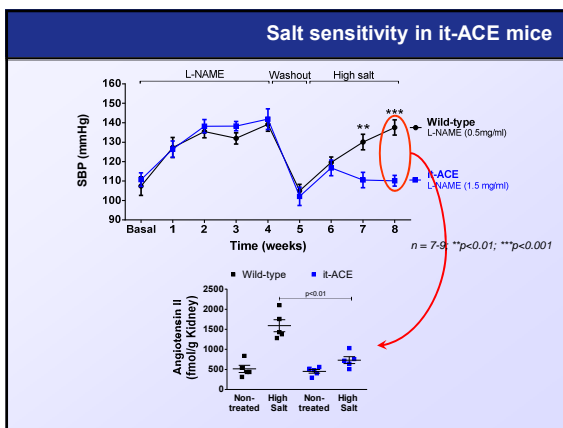


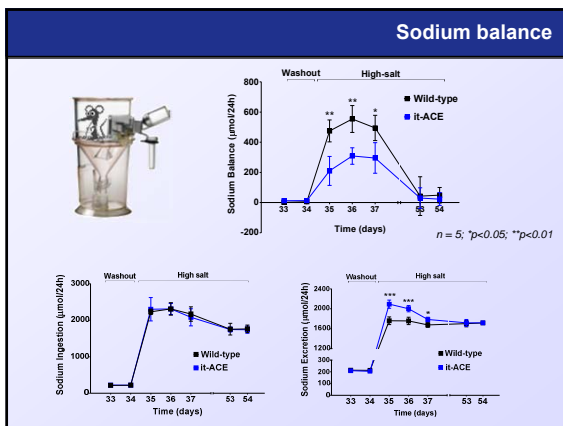


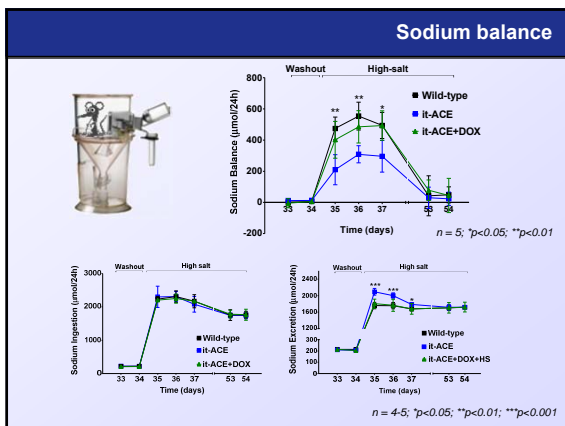
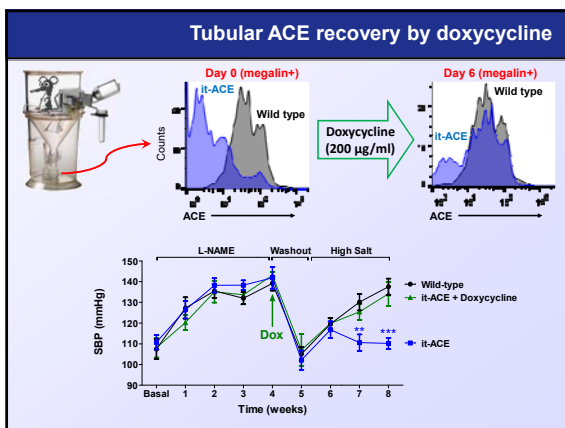
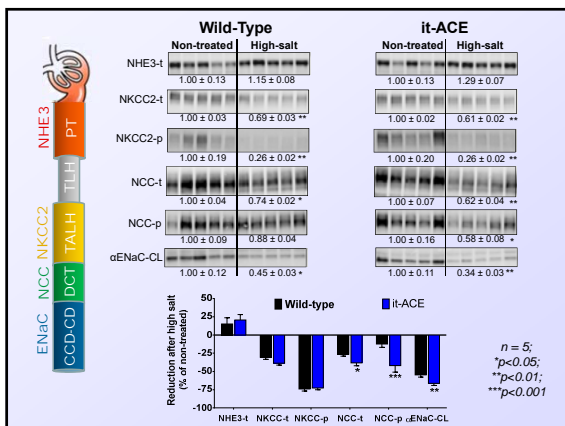


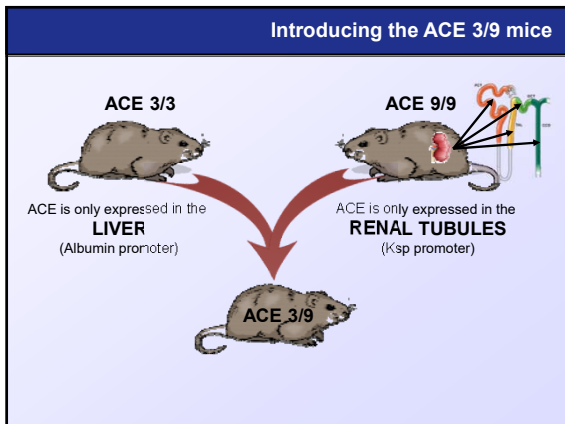


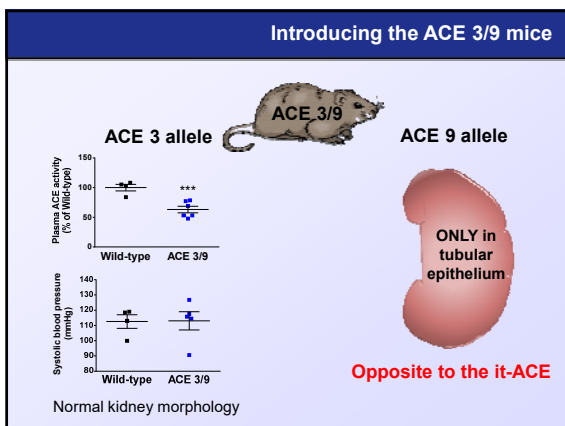


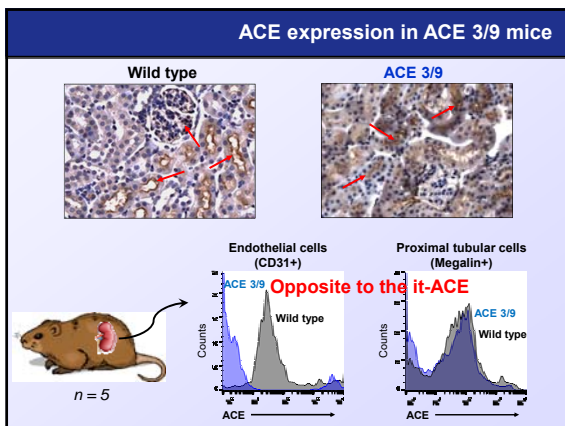


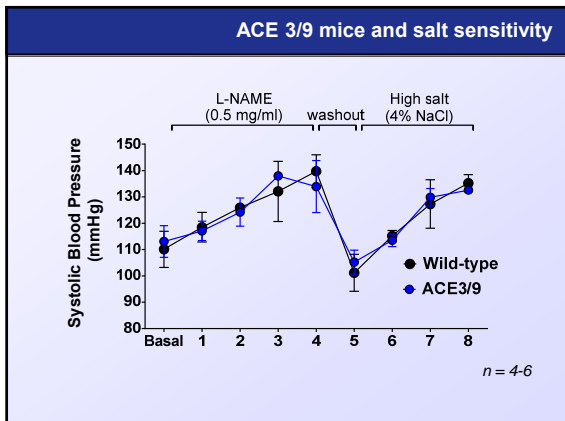












Summary and conclusion

it-ACE mice: Specifically lacking ACE in tubular epithelium
ACE 3/9 mice: ACE is only expressed in tubular epithelium

↓

Tubular epithelial ACE, and not ACE expression in endothelium or other locations, is essential for the development of different forms of hypertension, including salt sensitivity.

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