

Cochlear Homeostasis Lab

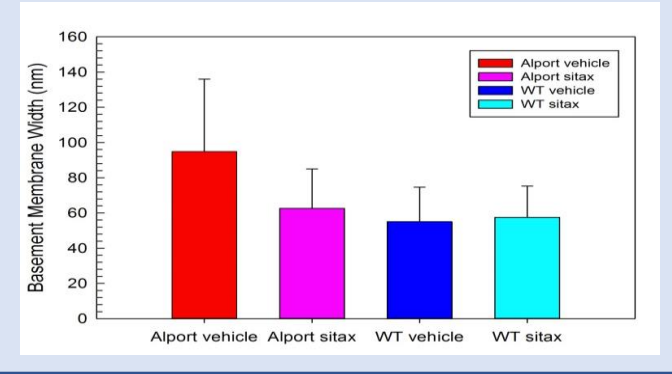
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Cochlear basement membrane pathology with lateral wall (stria vascularis & spiral ligament) dysfunction resulting in hearing loss can occur in:

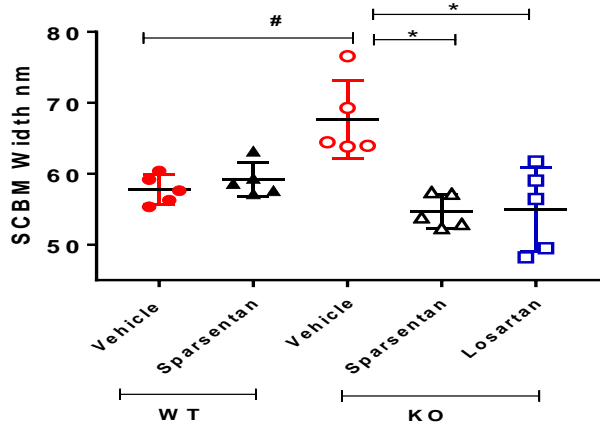
- Alport Syndrome
- Presbycusis
- Diabetes
- Autoimmune disease

2018: Treatment with an ET_AR blocker reversed basement membrane pathology in cochlear capillaries (right) and kidney glomerulus of a mouse modelling Alport Syndrome wh (Meehan et al Hear Res 2018)

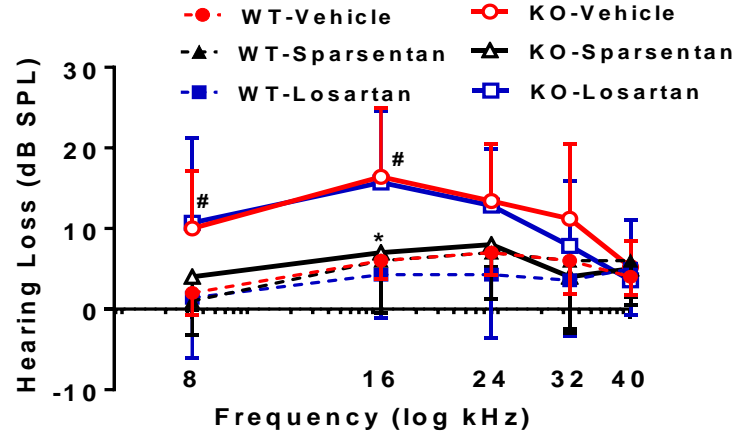


A dual ET_AR/AT₁ blocker, Sparsentan, but not Losartan, SOC, rescues hearing loss in Alport mice

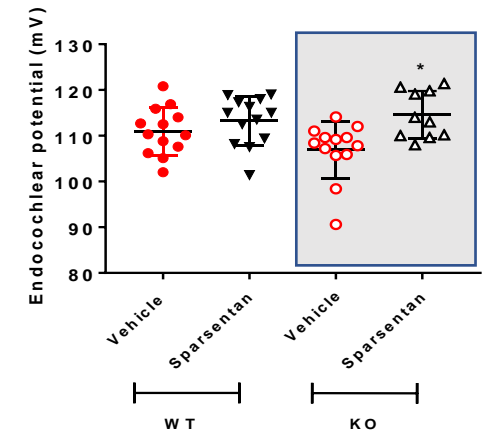
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Sparsentan (open Δ) and Losartan (open \square) treatment attenuated the progressive strial capillary basement membrane (SCBM) pathology in Alport mice. # and * = p < 0.05 n = 5



Sparsentan (open black Δ , but not losartan (open \square), the current SOC, prevents hearing loss in Alport mice. # and * = p < 0.05 n = 5



Sparsentan treated Alport mice have a higher endocochlear potential (open Δ), a marker for lateral wall function. * = p < 0.05 n = 13 KO-Vehicle vs KO SP