

Effects of vibegron, a new β_3 -adrenoceptor agonist, on detrusor overactivity and remodeling in a mouse model of spinal cord injury (SCI)

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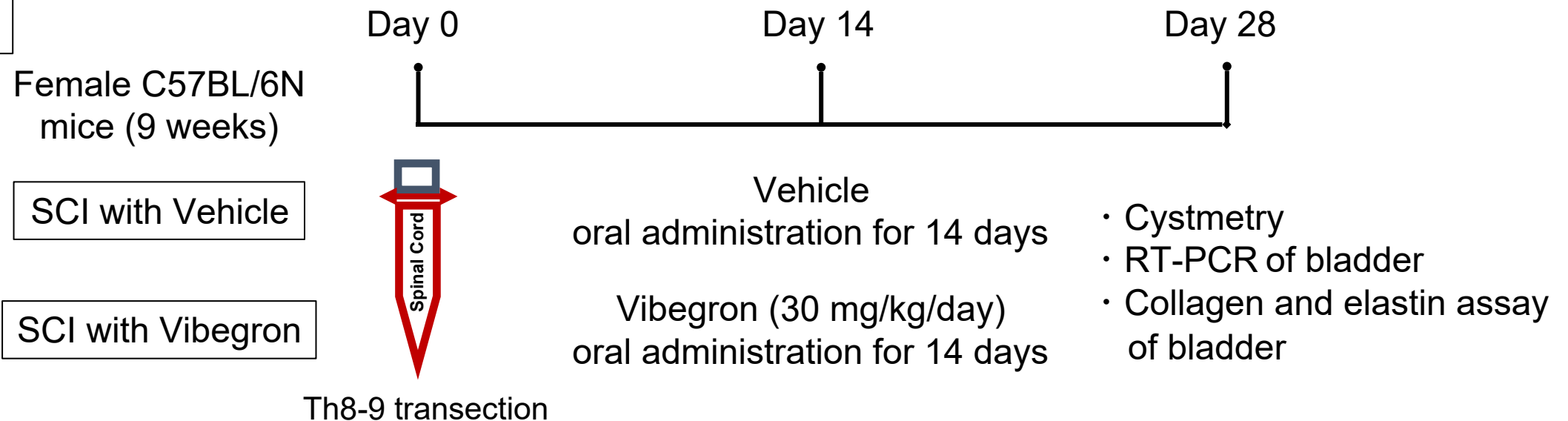


Introduction and Methods

Introduction

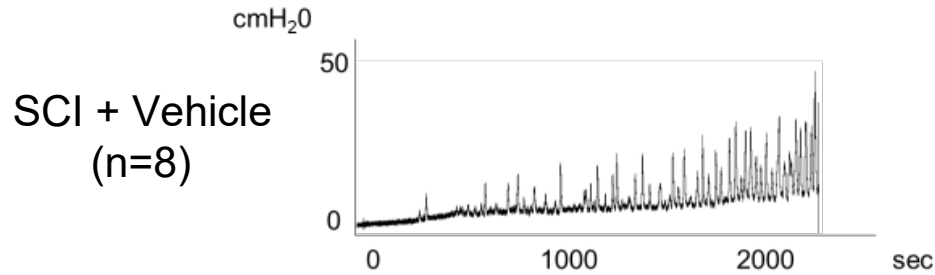
- Vibegron is a new β_3 -adrenoceptor agonist that was approved for the treatment of overactive bladder in Japan in 2018.
- However, the effects of vibegron on bladder dysfunction and bladder wall remodeling after SCI are not previously demonstrated. Therefore, we examined bladder function and the fibrotic and ischemic changes in the bladders of SCI mice with or without vibegron treatment.

Methods

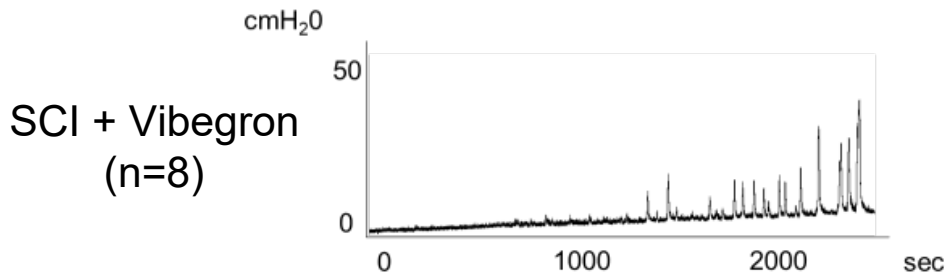


Results

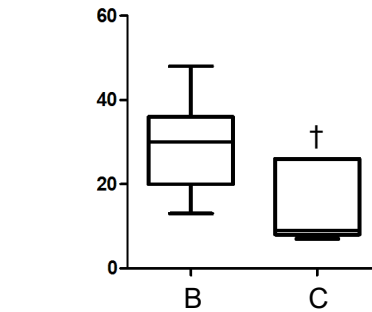
Single cystometry



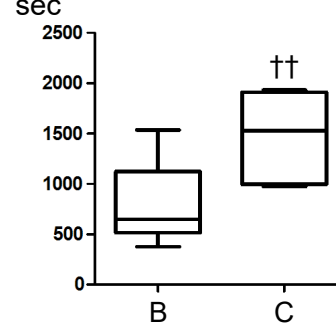
NVC= Non-voiding contractions during bladder filling



NVCs / void

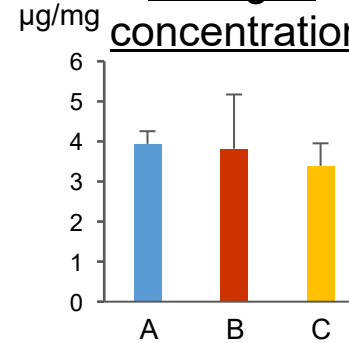


Time to 1st NVC

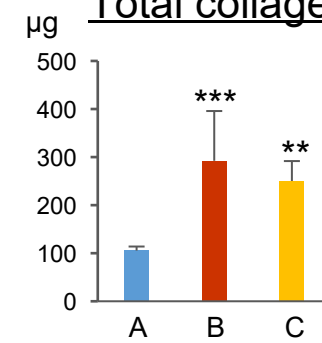


Collagen and elastin assay

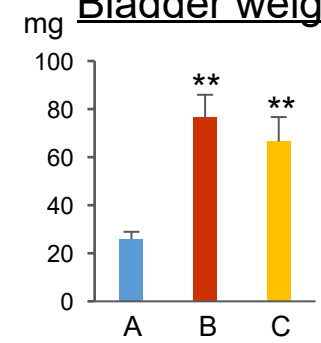
Collagen concentration



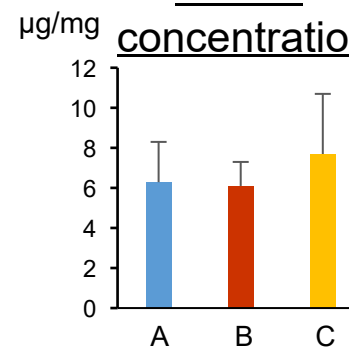
Total collagen



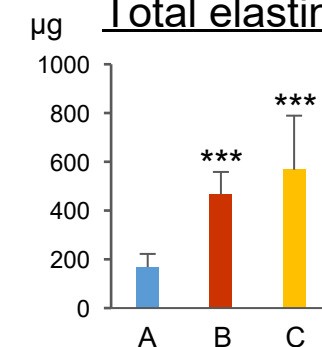
Bladder weight



Elastin concentration

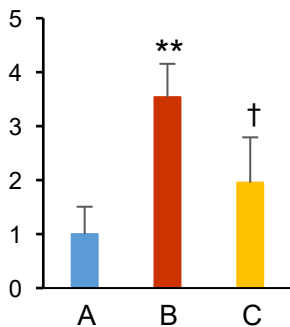


Total elastin

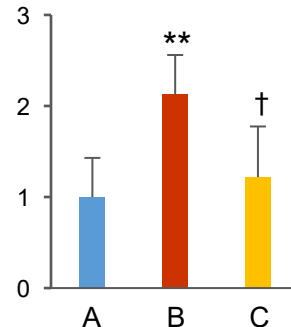


Real-time PCR

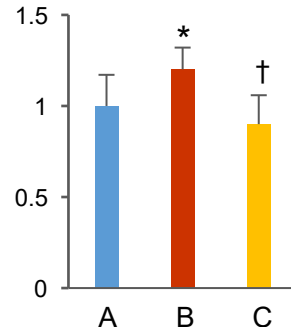
Collagen 1



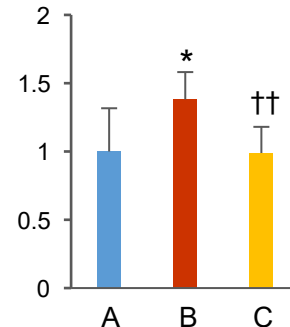
Collagen 3



TGF-β1



HIF-1α



Fold changes compared to spinal cord intact mice.

A: Spinal cord intact (n=6) * P < 0.05 vs Spinal cord intact
 B: SCI + Vehicle (n=8) ** P < 0.01 vs Spinal cord intact
 C: SCI + Vibegron (n=7) *** P < 0.001 vs Spinal cord intact
 † P < 0.05 vs SCI + Vehicle
 †† P < 0.01 vs SCI + Vehicle