



Case #470

Increase in Vasodilation in Small Vessel Disease Treated with Relaxin

Hypertension is a major risk factor for cerebral small vessel disease (SVD), a leading cause of progressive cognitive decline and a major risk factor for stroke. In pregnancy, relaxin promotes selective outward remodeling of parenchymal arterioles (PA) and increases capillary density in the brain specifically through the activation of peroxisome proliferator-activated receptor- γ (PPAR γ). The Cipolla lab has found that in rat models of hypertension induced SVD, relaxin enhanced vasodilation by crossing the blood brain barrier, decreasing vascular resistance of PA and increasing blood flow during hypoperfusion. Relaxin is also selective for PAs via PPAR γ , making it and other PPAR γ agonists potential treatments and prophylaxis for SVD and other complications of hypertension and blood brain barrier permeability, such as Alzheimer's disease, vascular dementia, epilepsy, stroke, CADASIL and migraine.

Applications:

- Treatment and prevention of SVD and resulting co-morbidities.

Advantages:

- Selectively outwardly remodels cerebral small vessels.
- Passes through the blood brain barrier.
- Increases blood flow during hypoperfusion.
- Reverses hypotension induced inner remodeling of PA.

Intellectual Property and Development Status:

US Patent 9,393,288

Looking for both licensing and industry partners for further development of PPAR γ targeted therapeutics

References:

Treatment for cerebral small vessel disease: effect of relaxin on the function and structure of cerebral parenchymal arterioles during hypertension. Chan SL *et al* PMC4046185

Inventors:

Marilyn J. Cipolla

Contact Information:

Kerry Elizabeth Swift
Technology Licensing Officer
Kerry.Swift@med.uvm.edu
802-656-8780