

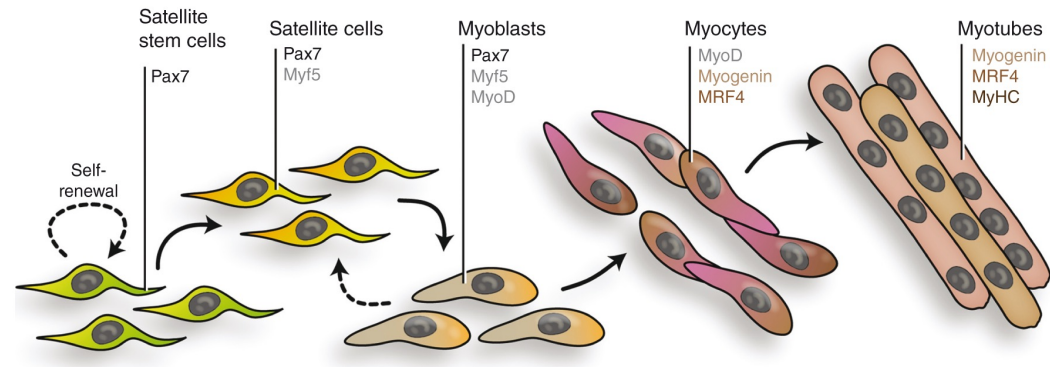
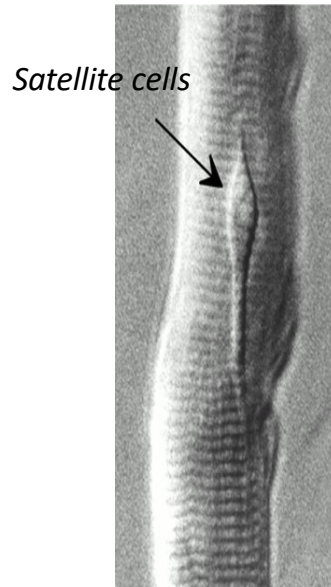
Identification of new strategies to improve skeletal muscle regeneration

Annalisa Bernareggi
Marina Sciancalepore
Paola Lorenzon



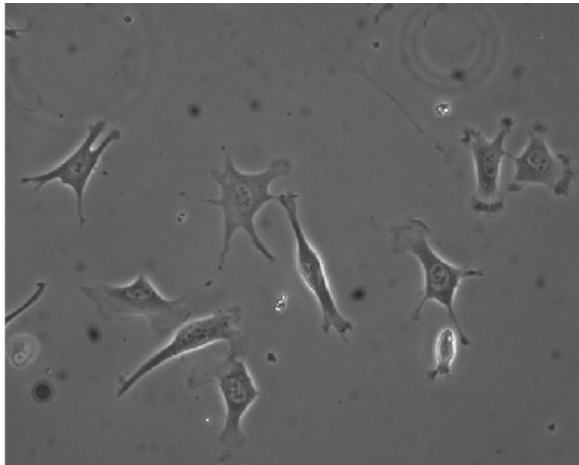
Our model

Adult muscle fibers

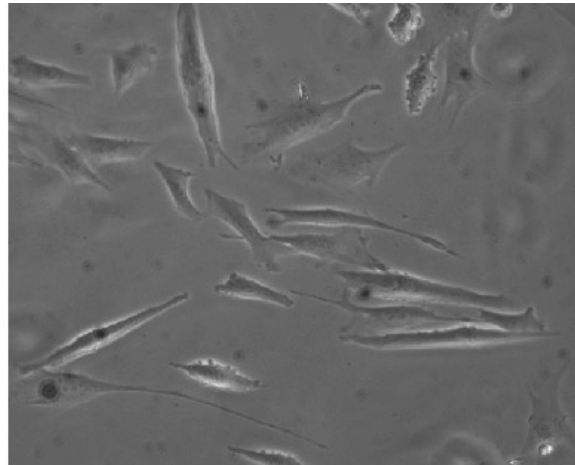


in vitro expansion

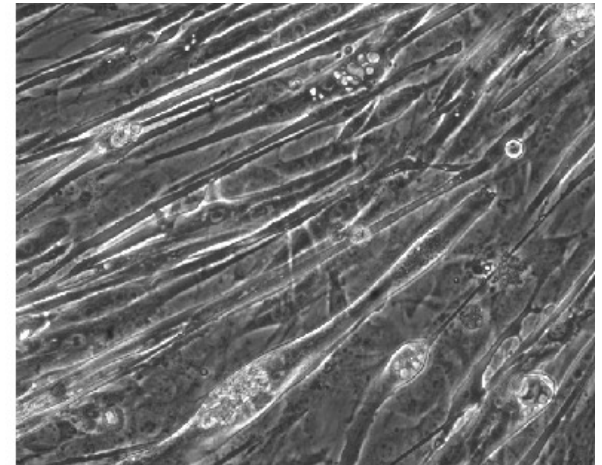
myoblasts



myocytes



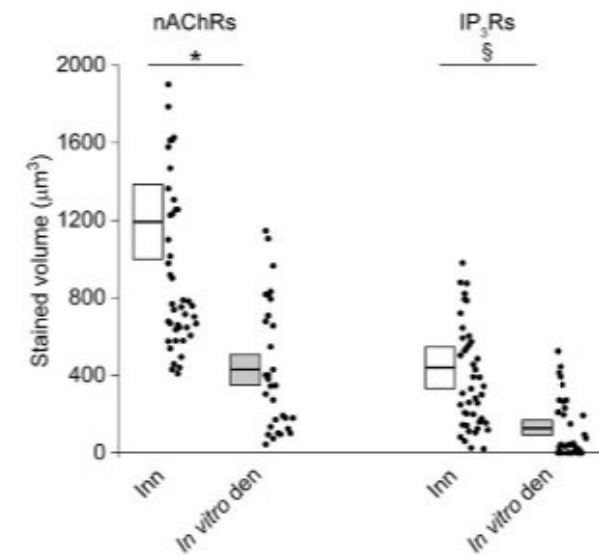
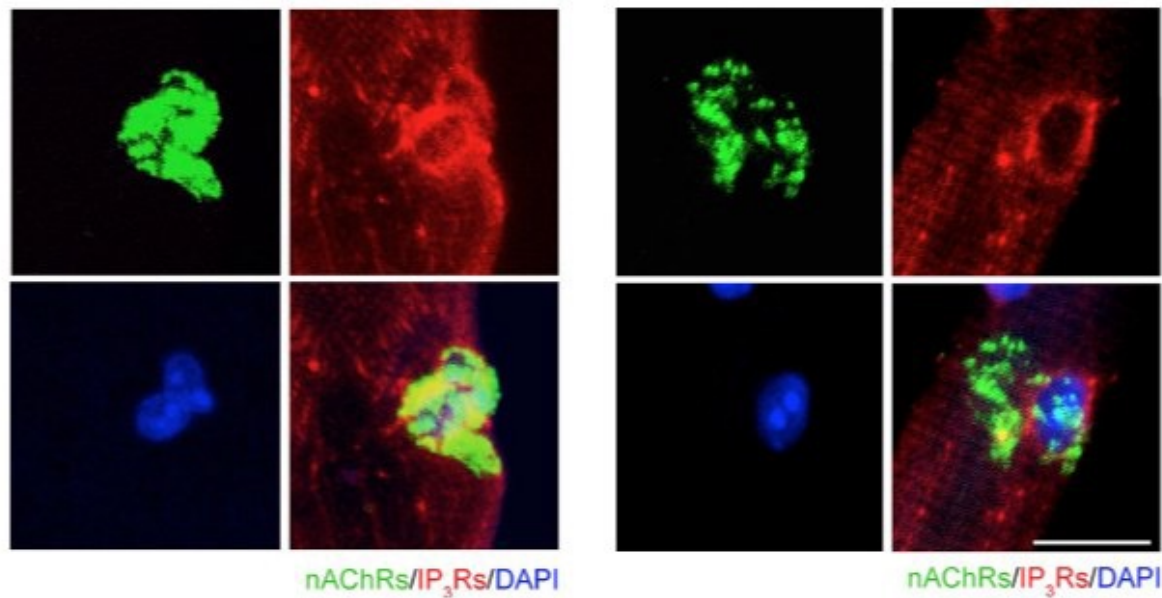
myotubes



50 μ m

What we study:

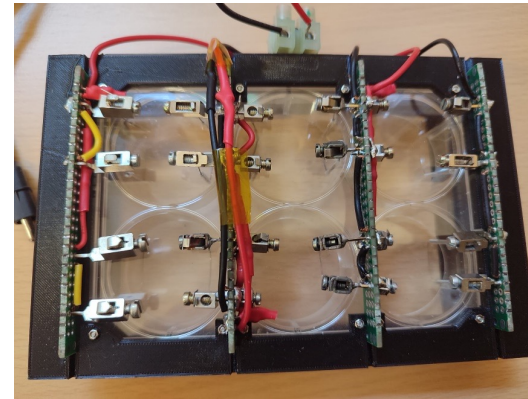
1. Neuromuscular Junction Plasticity



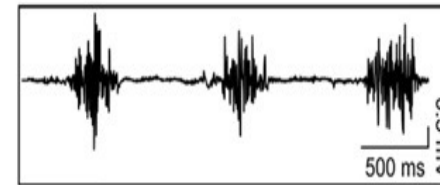
What we study:

2. The effect of electrical pulse stimulation

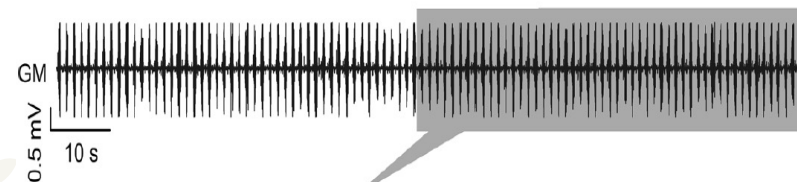
(*in vitro* model of exercise)



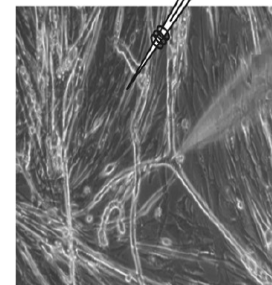
EPS device



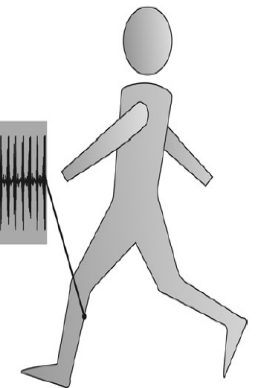
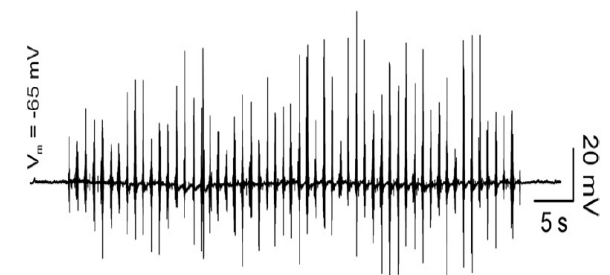
human EMG recording



electrical stimulation

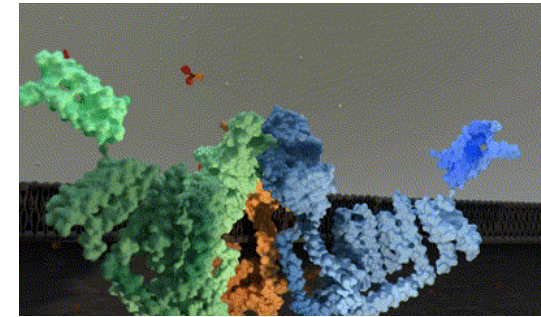
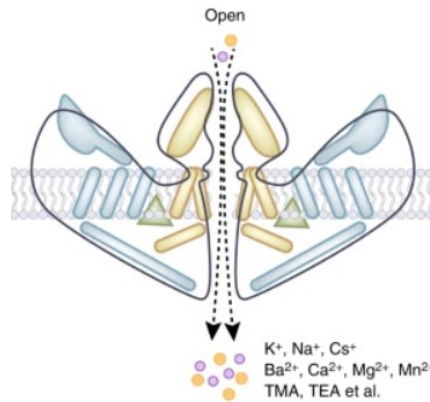
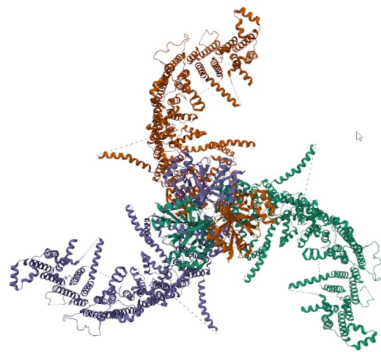


myotube recording



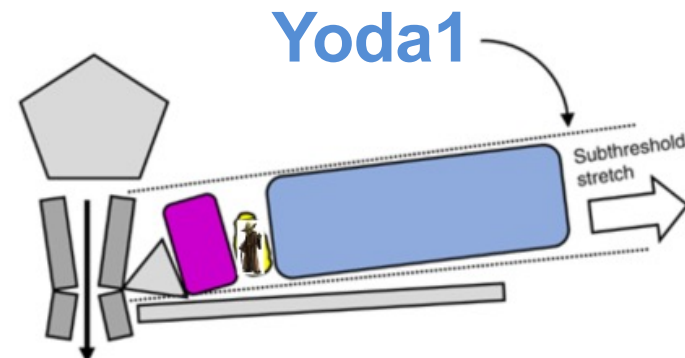
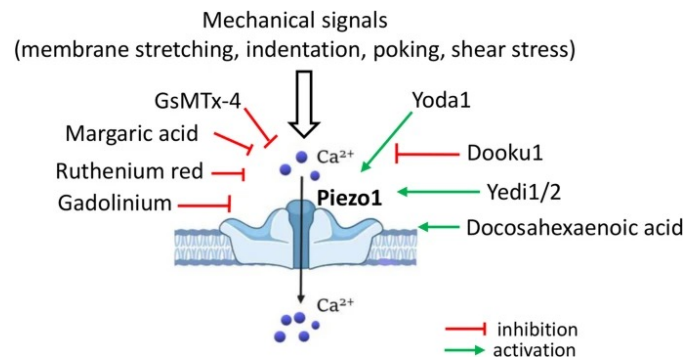
What we study:

The role of Piezo1 and mechanotransduction

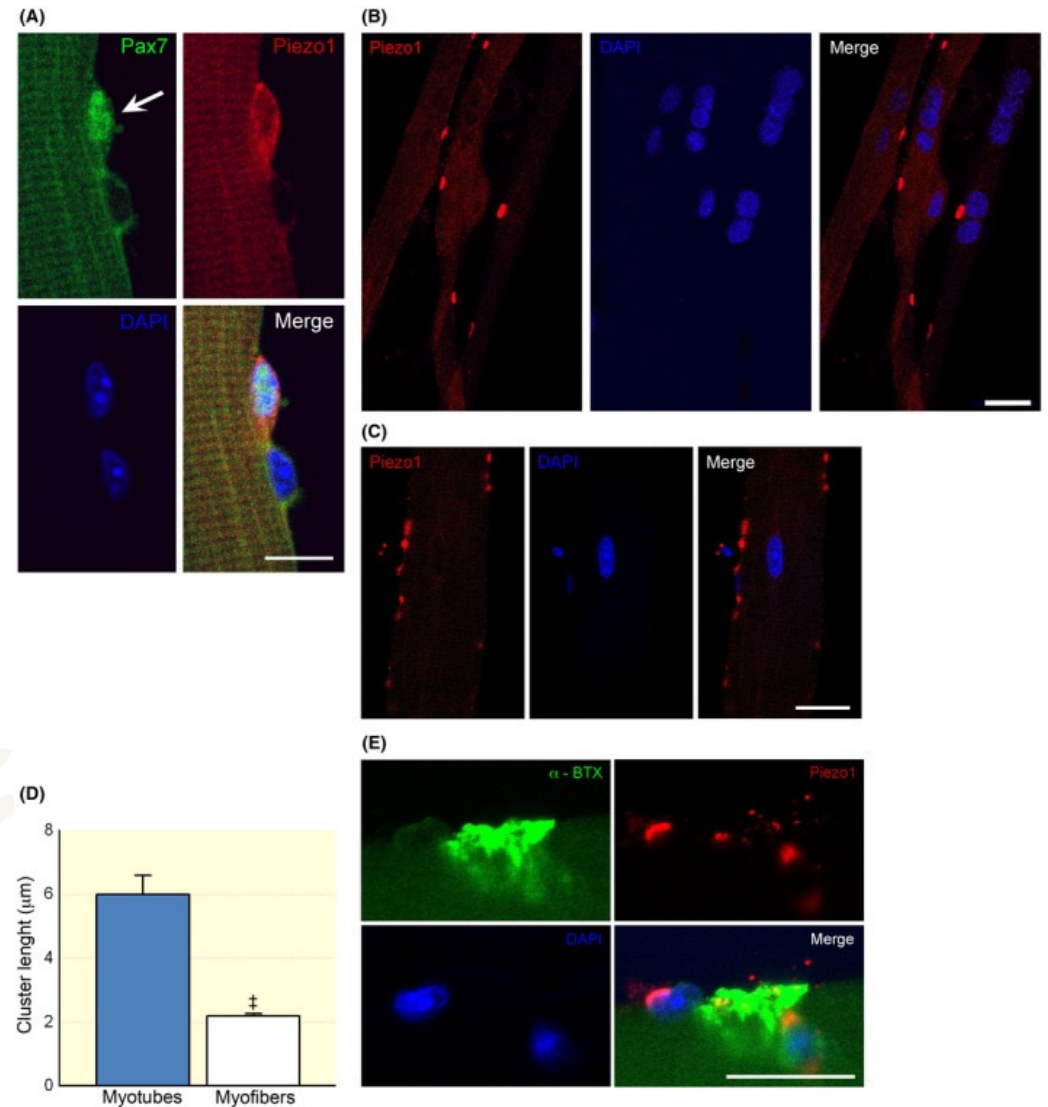


“force from lipids”
“forces from filament” or “tethering model”

.... and it can be activated pharmacologically



Piezo1 is expressed in both myogenic precursors and adult fibers. It favors the myogenesis



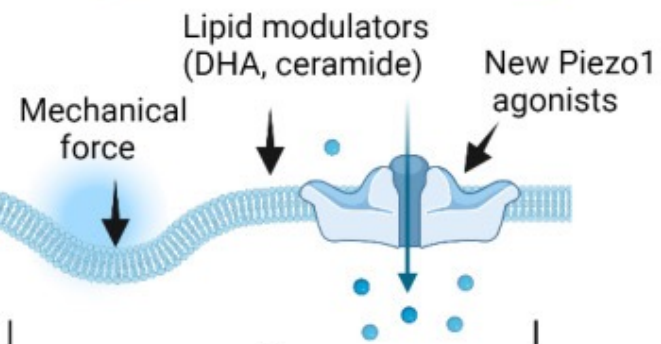
What next....

Muscle pathology

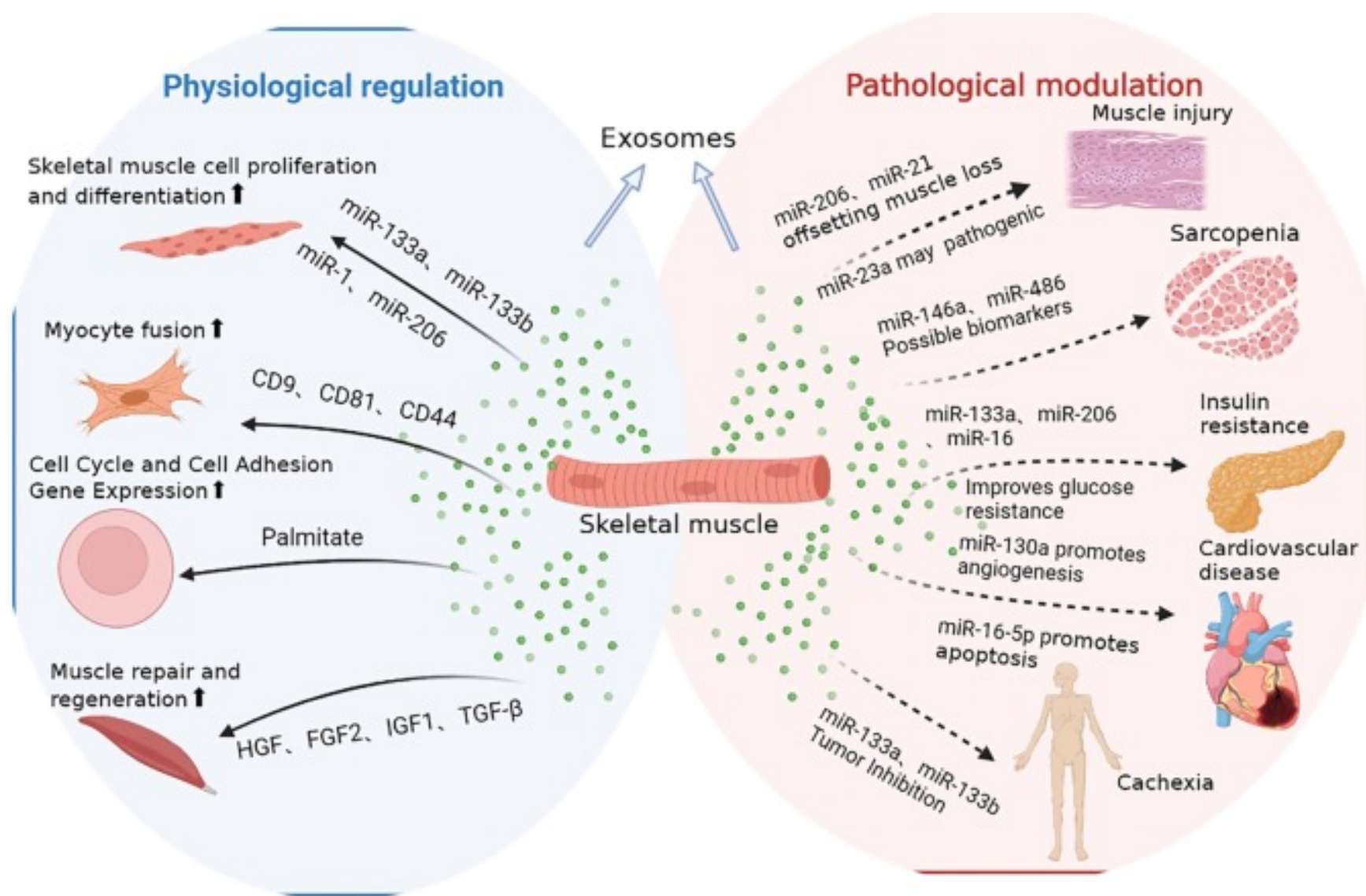


Muscle atrophy
Poor blood supply

Modulation and treatment



Muscle regeneration
Higher blood supply



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Grazie!