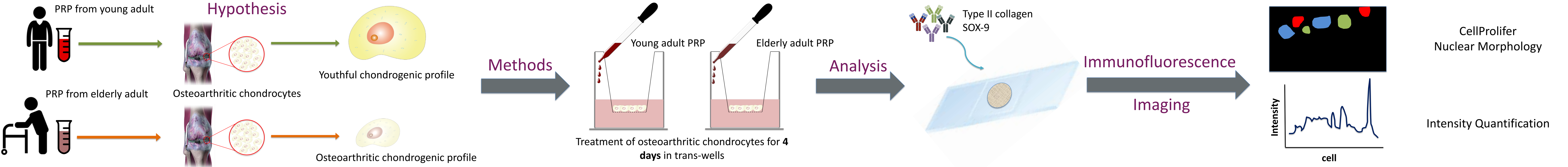


BACKGROUND

Osteoarthritis (OA) is one of the most common causes of disability worldwide caused by articular cartilage degradation, resulting in joint inflammation and pain (Chen et al, 2017). In recent years, autologous platelet-rich plasma (PRP) has garnered interest in the treatment of OA, as it is theorized to provide a restorative stimulus for cartilage through the action of growth factors and cytokines released by platelets (Cook et al, 2018). Although PRP is an increasingly utilized treatment of age-related OA, the effects of age on the therapeutic efficacy of PRP is unknown. To address this gap, we compared the ability of PRP from young and aged donors to promote a healthy chondrogenic cell profile.

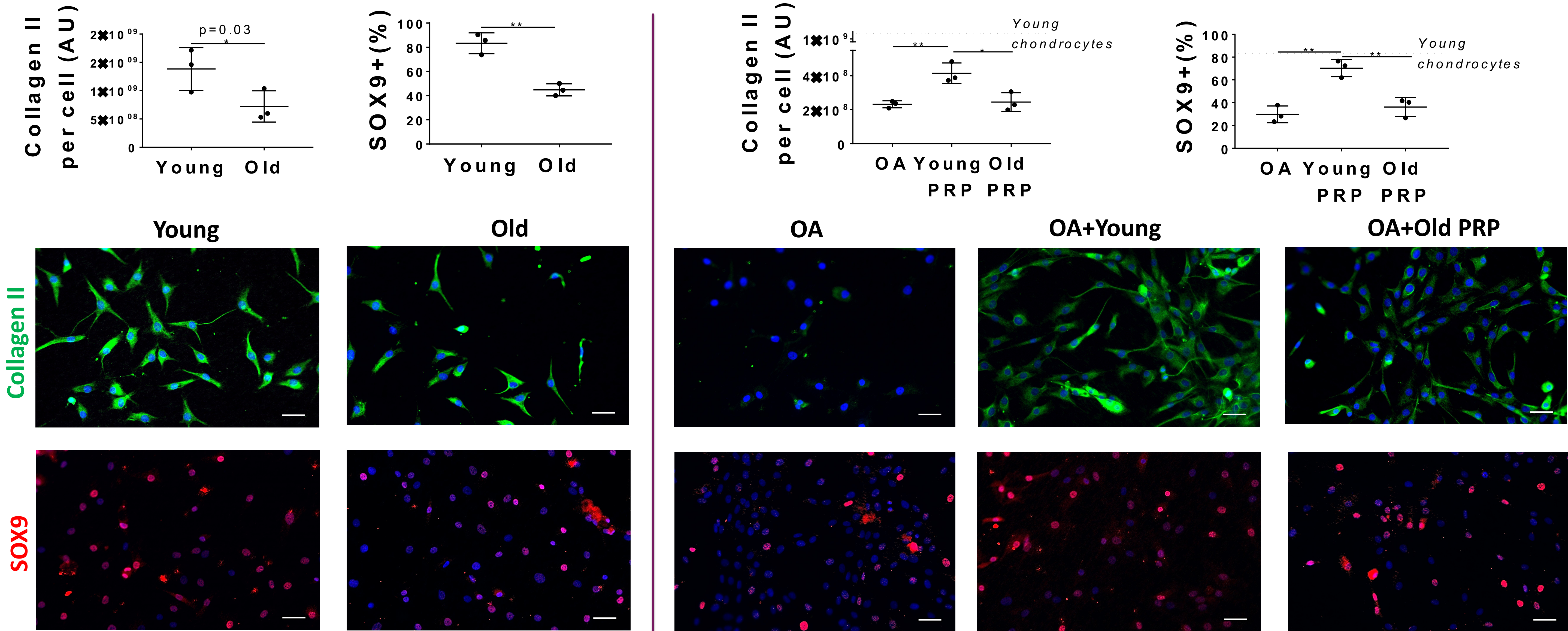
SCHEMATIC OF WORKING HYPOTHESIS AND METHODS



RESULTS

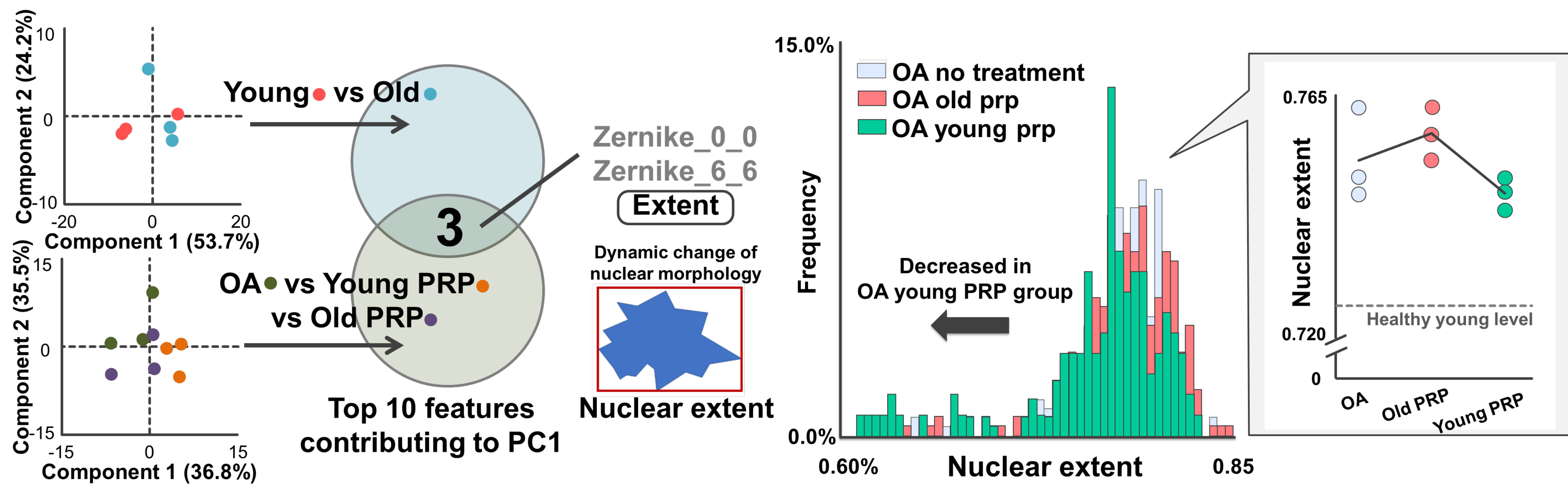
Aging-associated loss of chondrogenic profile and nuclear morphology are partially reversed by treating OA cells with PRP derived from young, but not older, donors

ASSESSMENT OF CHONDROGENIC PROFILE



Scale: 50µm

ASSESSMENT OF CELL NUCLEAR MORPHOLOGY



CONCLUSION & FUTURE WORK

We found that young, but not old, PRP induced restorative properties in the osteoarthritic chondrocytes by generating a chondrogenic profile that more closely resembled young and healthy chondrocytes. Our results warrant further mechanistic studies to identify age-dependent factors in PRP that may promote cartilage restoration.

ACKNOWLEDGEMENTS

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