Biomaterial-based AAV Gene Delivery System for Smooth Muscle Cells

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Pulmonary artery hypertension(PAH) is an artery disease, which results from dedifferentiation and excessive propagation of pulmonary artery smooth muscle cells(PASMC). To treat PAH, it is necessary to reprogram PASMC of PAH to normal cells. But there are many obstacles to deliver the reprogramming factor to PASMC because PASMC is surrounded by tunica adventitia and endothelium.
In this study, Adeno-associated virus (AAV) was used as a gene delivery vector for PASMC. AAV is a non-pathologic human parvovirus and it is attractive for gene delivery because of its safety profile and its ability to persist in non-dividing cells for extended periods of time.