Novel Autophagy Inhibitors for the Treatment of Pulmonary Hypertension

Title: Novel Autophagy Inhibitors for the Treatment of Pulmonary Hypertension

Invention: This invention utilizes novel autophagy inhibitors to treat pulmonary hypertension.

Background: Autophagy is the natural, regulated and destructive mechanics of the cell that dissembles unnecessary components. Autophagy plays an important role in cancer progression and drug resistance, however current hydrochloroquine (HCQ) is the only FDA approved drug with the purpose of intentionally inhibiting autophagy. Comprehensive in vitro and in vivo studies found that this invention has superior preclinical anticancer activity compared to HCQ. Pulmonary hypertension (PH) shares several characteristics with cancer and autophagy has been shown to have effects in PH as well. These novel autophagy inhibitors present a good opportunity for combinational therapy for PH as the disease has diverse pathogenesis and autophagy is a new target for PH.

Applications:
• Therapeutics for pulmonary hypertension or other pulmonary vascular diseases.

Advantages:
• These novel inhibitors are more effective in inhibiting PH and cancer than HCQ.
• A great drug candidate for combination therapy for PH as they act through a new mechanism (autophagy).

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