

Natural treatment for ventilation induced lung injury

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Technology description

Invention

The invention is the use of a NRF2 inducer to reduce the lung damage caused by mechanical ventilation. Bixin was found to suppress inflammatory mediators, reduce alveolar capillary leakage, and protect against DNA oxidative damage.

Background

Mechanical ventilation is used to assist patients who have difficulty breathing spontaneously in conditions such as lung trauma, chronic obstructive pulmonary disease, acute respiratory distress syndrome, apnea, severe asthma, and patients under general anesthesia. Ventilator induced lung injury may result from mechanical ventilation, which is the cyclic stretching and overdistension of the lung tissues. This causes inflammation and leads to acute lung injury. There are no effective pharmacological strategies to reduce the negative effects of mechanical ventilation.

Application area

- The invention can be developed into the first drug for ventilation induced lung injury

Advantages

- There are no alternative options in using mechanical ventilation
- The only approach to lessen the damage of ventilation induced injury is to use a low tidal volume
- The NRF2 inducer was shown to restore normal lung morphology and reduce oxidative stress

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