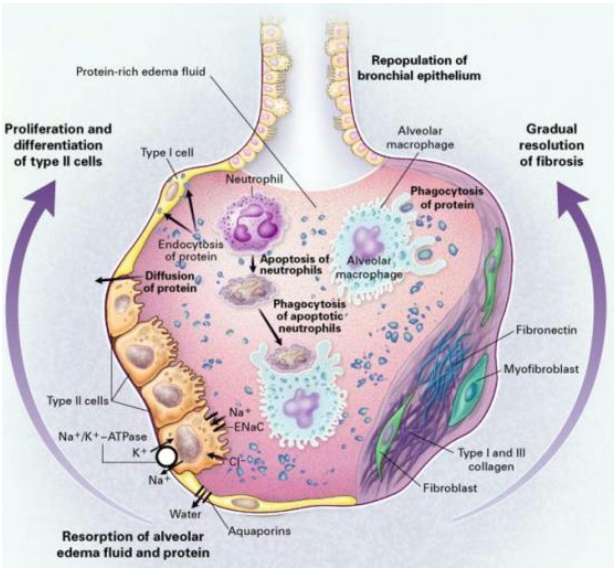
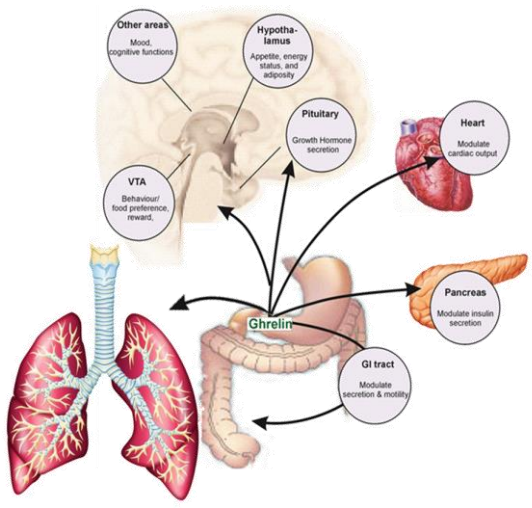
Effects of Hexarelin in a model of ARDS

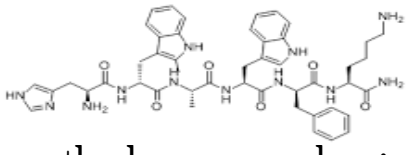
Acute respiratory distress syndrome

It is a life-threatening medical condition where the lungs can't provide enough oxygen for the rest of the body.
ARDS develops if the lungs become severely inflamed as a result of an infection or injury.
The inflammation causes fluid from nearby blood vessels to leak into the tiny air sacs in lungs, making breathing increasingly difficult.





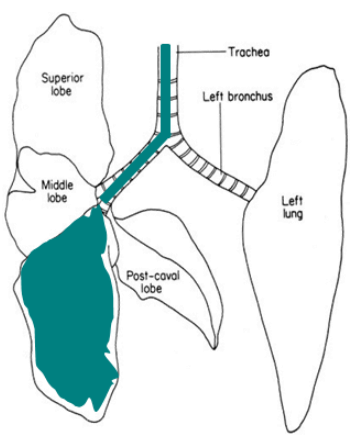
Hexarelin



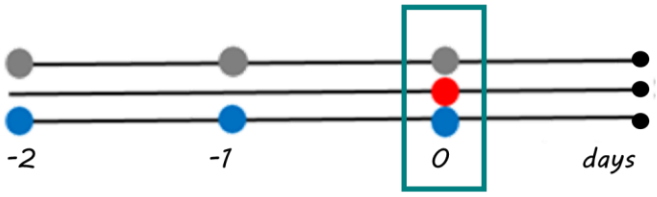
It is a synthetic growth hormone-releasing peptide of six aminoacid, can bind to and activate the growth hormone secretagogue receptor (GHS-R1a) and share with ghrelin several endocrine and extra-endocrine properties but is more stable in biological fluids.

In vivo model

Male mice received, at day 0, an instillation of 0,1 M HCl 1.5ml/Kg, into the right bronchus

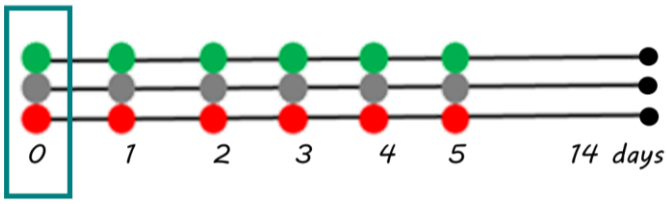


Acute ARDS



- Vehicle
- Hexarelin 320 µg/Kg
- Pretreatment with Hexarelin 320 µg/Kg
- Death after 6 or 24 hours from HCl

Late ARDS



- Control
- Vehicle
- Hexarelin 320 µg/Kg
- Death after 2 weeks from HCl

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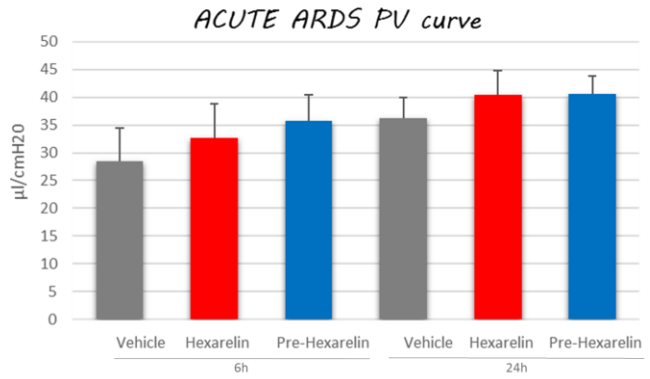
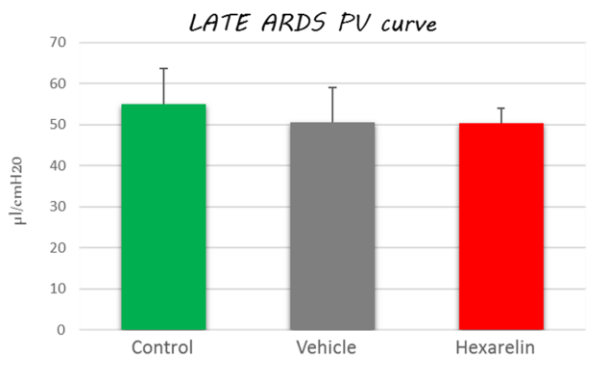
Results

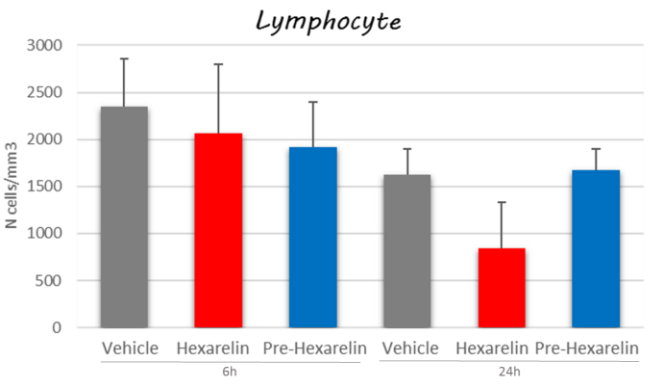
Which are the therapeutical effects of Hexarelin?

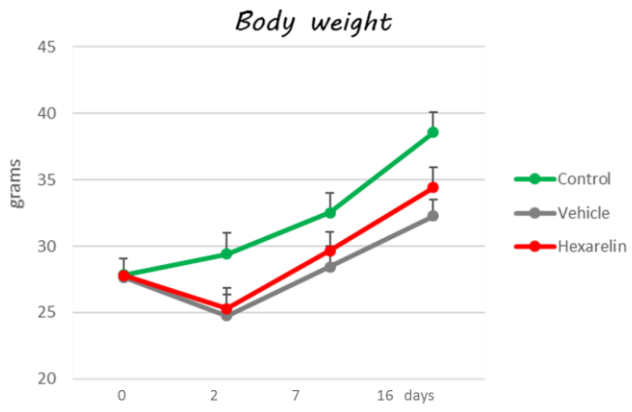
✓ On pulmonary functions



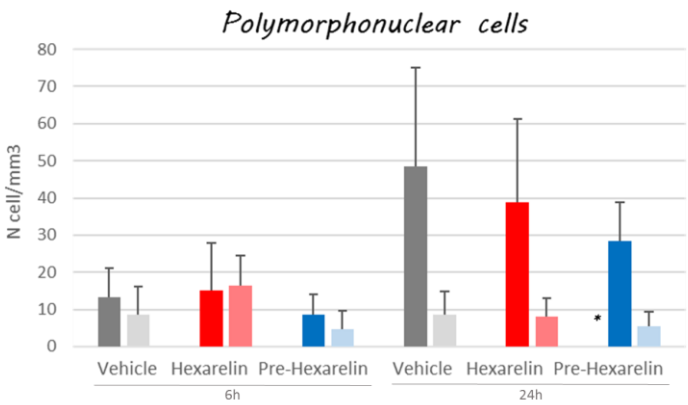


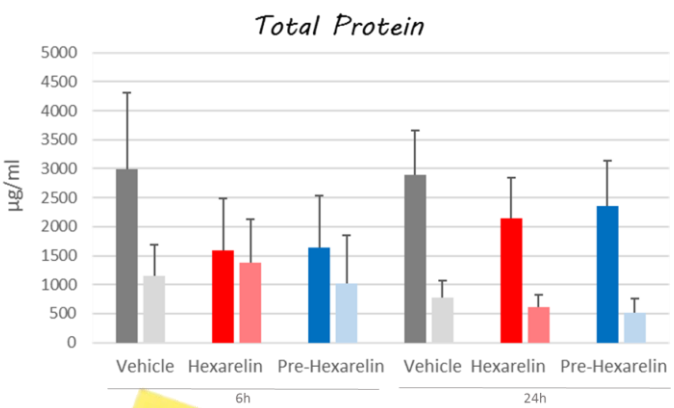
✓ On systemic inflammation



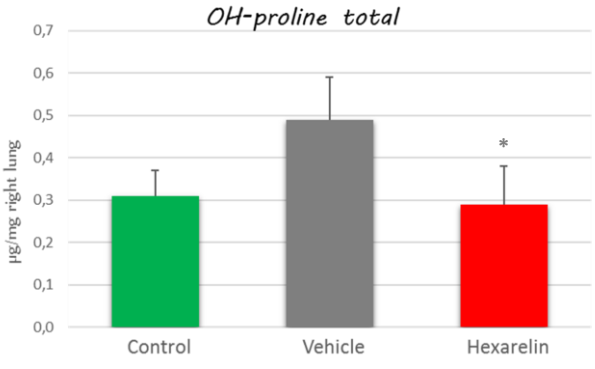


✓ On local inflammation (BAL)





✓ On chronic inflammation



* p<0,05

- a significant improvement of lung compliance and a reduction of the number of total immune cells in BAL;
- 24 hours after challenge with HCl there was a lower recruitment of neutrophils compared to the control group, with no differences in macrophages number;
- Hexarelin group showed, at 2 weeks, a decreased collagen deposition in lung tissue.

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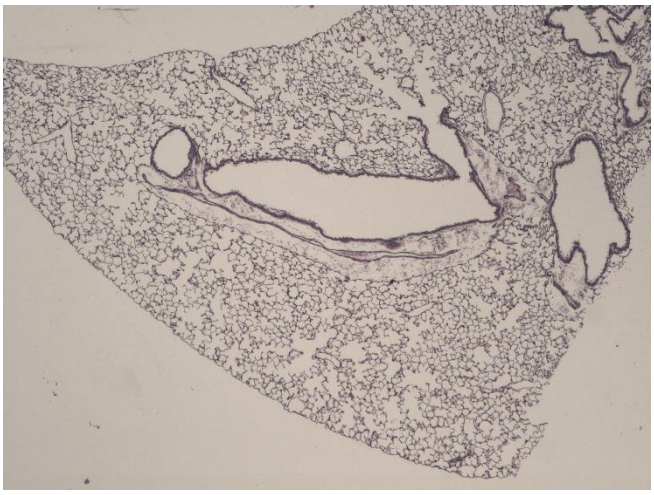
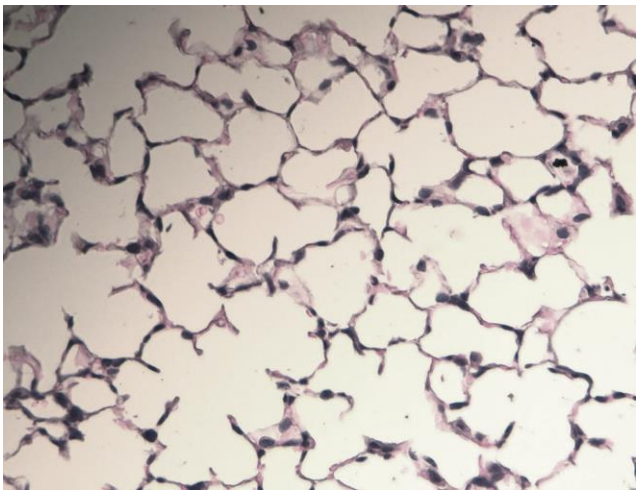
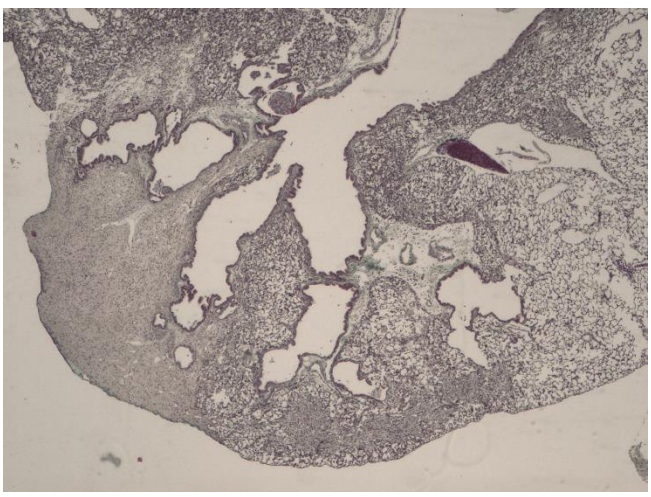
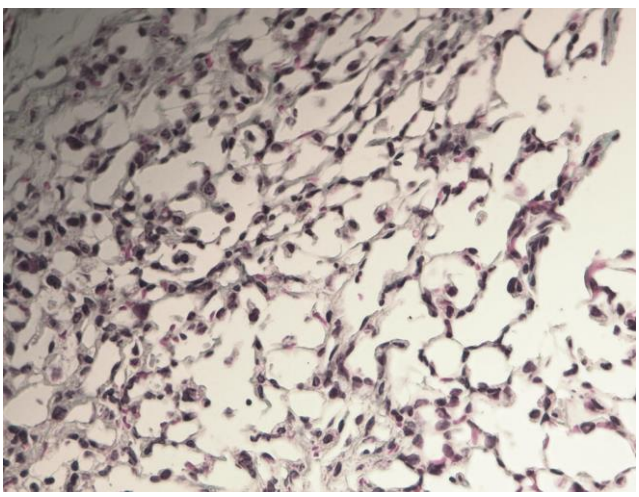
FIBROSIS	ALVEOLUS
4x	40x

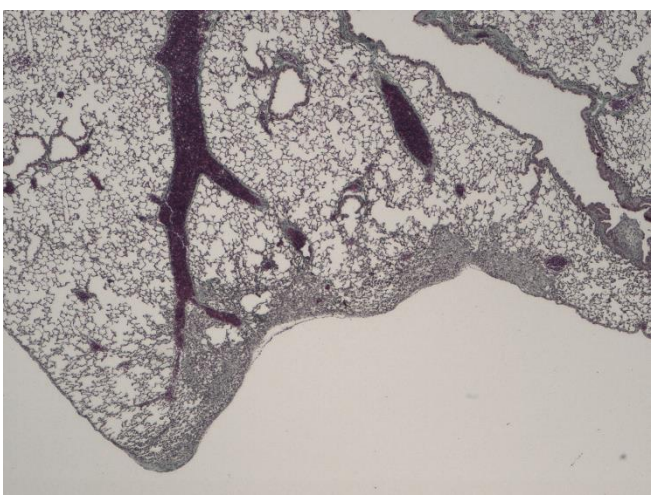
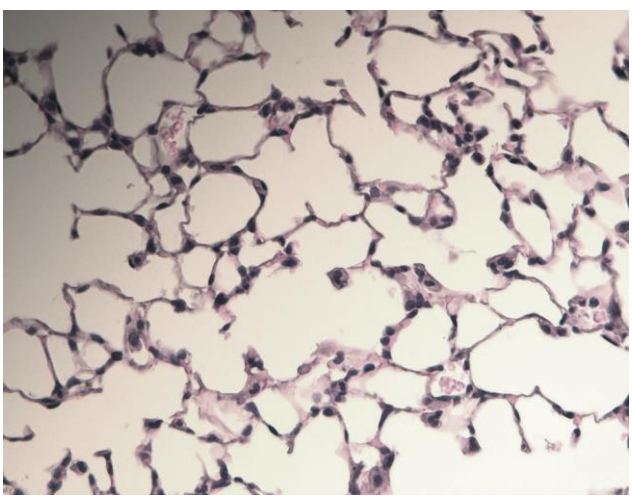
Control

Vehicle

Hexarelin

- ✓ Our data suggest that Hexarelin could be a potential drug for ARDS because it can inhibit the early phase of the inflammation preventing fibrotic evolution;
- ✓ Additional experiments are required to confirm the data.

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