

Accepted Manuscript

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PII: S1357-2725(17)30191-7
DOI: <http://dx.doi.org/doi:10.1016/j.biocel.2017.08.004>
Reference: BC 5193

To appear in: *The International Journal of Biochemistry & Cell Biology*

Received date: 15-3-2017
Revised date: 3-8-2017
Accepted date: 7-8-2017

Please cite this article as: Han, Wenli., Li, Xiaomei., Zhang, Han., Yu, Benli., Guo, Chunbao., & Deng, Chun., Recombinant Human Elafin Promotes Alveologenesis in Newborn Mice Exposed to Chronic Hyperoxia. *International Journal of Biochemistry and Cell Biology* <http://dx.doi.org/10.1016/j.biocel.2017.08.004>

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Recombinant Human Elafin Promotes Alveologenesis in Newborn Mice Exposed to Chronic Hyperoxia

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Running Title: Elafin in alveolar elastogenesis

Abstract

Background/Aims: Elastase inhibitors reverse elastin degradation and abnormal alveologenesis and attenuate the lung structural abnormalities induced by mechanical ventilation with O₂-rich gas. The potential of these molecules to improve endothelial function and to ameliorate severe bronchopulmonary dysplasia (BPD) during lung development is not yet understood. We sought to determine whether the intratracheal treatment of newborn mice with the elastase inhibitor elafin would prevent hyperoxia-induced lung elastin degradation and the cascade of events that cause abnormal alveologenesis.

Methods: Newborn mice were exposed to 85% O₂ for 3, 7, 14 or 21 days. Recombinant human elafin was administered administered by intratracheal instillation from the first

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