COMPARATIVE BIOSCIENCES, INC
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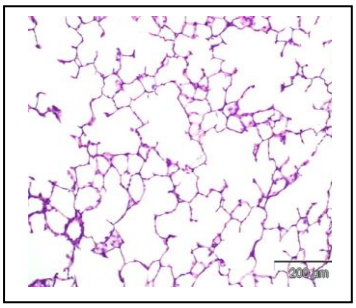
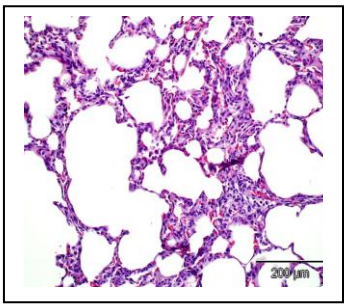
Postnatal Hyperoxia-induced Lung Injury in Infant Rats: A Validated Model of Bronchopulmonary Dysplasia in Neonates

Exposure of neonatal infant rats to 2 weeks of hyper-oxygenation followed by return to room air leads to pulmonary alveolar wall fibrosis, enlargement of the alveolar space and inflammation. This is analogous to pulmonary fibrosis in premature human neonates due to Bronchopulmonary Dysplasia, the treatment of which represents a significant unmet medical need, as well as other pulmonary disorders. Currently, CBI offers a new method of assessment using digital image analysis provides accurate, robust and reproducible data on alveolar wall thickness and alveolar size that is comparable or superior to MLI measurements.

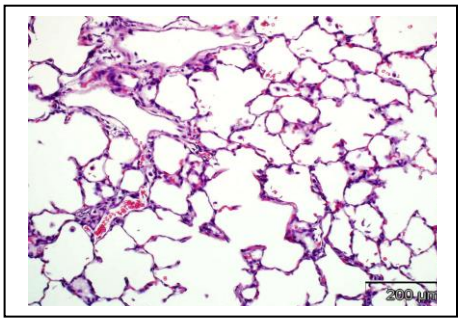
Newborn rats are exposed to hyperoxic air (~95% oxygen) from postnatal Day 4 to Day 14 and then returned to normal air. Pups are sacrificed with lung perfusion.





Endpoint determinants:

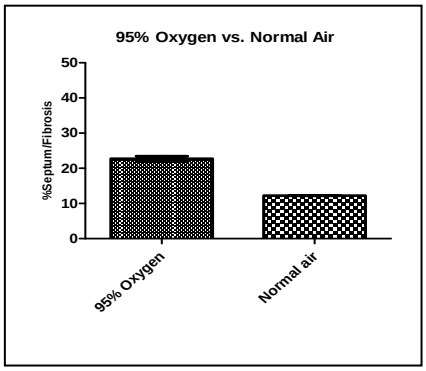
- Clinical function
- In vitro assessments and cytokines
- Histology
- Immunohistochemistry
- Digital image analysis, superior to MLI measurements



Lung histology:

Multifocal to diffuse moderate to severe fibrotic thickening of the alveolar walls
Increased alveolar diameter
Increased alveolar type II macrophages and mixed inflammation
Increased expression of Collagen type I, vWF, CD68, PCNA and PDGFr.

CBI's proprietary method of digital image analysis clearly demonstrates statistically significant differences in alveolar wall thickness and alveolar space size in hyper-oxygenated versus normal air lungs



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