

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 2287  
**Publication Number:** P2672

**Abstract Group:** 8.2. Transplantation

**Keyword 1:** Transplantation **Keyword 2:** Experimental approaches **Keyword 3:** Lung function testing

**Title:** Prevention of ischemia-reperfusion lung injury by supplementation of the preservation solution with an oxygen carrier in porcine lung transplant model

Matthieu 15083 Glorion matt.glorion@gmail.com MD <sup>1</sup>, Pierre-Emmanuel 15084 Noly noly.pierreemmanuel@gmail.com MD <sup>1</sup>, Benoit 15085 DeCante b.decante@ccml.fr <sup>1</sup>, Frédéric 17796 Favreau favreau.f@laposte.net <sup>2</sup>, Thierry 15086 Hauet thierry.hauet@gmail.com MD <sup>2</sup>, Elie 15087 Fadel e.fadel@ccml.fr MD <sup>1</sup> and Edouard 17795 Sage e.sage@hopital-foch.org MD <sup>1</sup>. <sup>1</sup> Laboratoire De Chirurgie Expérimentale, Université PARIS XI, Hopital Marie Lannelongue, INSERM U999, Le Plessis Robinson, France, 92350 and <sup>2</sup> Faculté De Médecine, Université De Poitiers, INSERM U927, Poitiers, France, 86000 .

**Body:** Introduction: Hemo2life is a new natural oxygen carrier extracted from *Arenicola marina* with high oxygen affinity acting at low temperature. We assessed the effect of Hemo2life associated with a static preservation solution on primary graft dysfunction after lung transplantation. Material and Methodes: A left lung transplant was performed in pigs after 24 h of preservation at 4°C with Perfadex (Perfadex group, n=5) or with Perfadex® associated with Hemo2life (2g/l) (Hemo2life group, n=5) and compared to a sham animals (n=5). Expression of HIF1 $\alpha$  was quantified on iterative samples from the right lung during preservation. During 5 h of lung reperfusion, hemodynamics, oxygenation and dynamic compliance were monitored. HMG-B1, TNF $\alpha$ , and NO were measured in serum. After 5 hours of reperfusion, TNF $\alpha$  and IL-8 were assayed in bronchoalveolar lavage (BAL). Results : During cold ischemia, expression of HIF1  $\alpha$  and histology remained unchanged and similar to control. After 5 hours of reperfusion, Hemo2life group led to a significant reduction of graft vascular resistance (p<0.05), graft oxygenation ratio was significantly higher (p<0.05). Expression of HMG B1 in serum tended to be lower (2.1+/- 0.8 vs 4.6+/-1.5) compared with Perfadex group. TNF-alpha and IL-8 in BAL were significantly higher in the 2 experimental groups compared to control (p<0,05). Conclusion : In this preliminary study, adjunction of a new oxygen carrier Hemo2life® in lung preservation solution improves early graft function after prolonged cold ischemia.