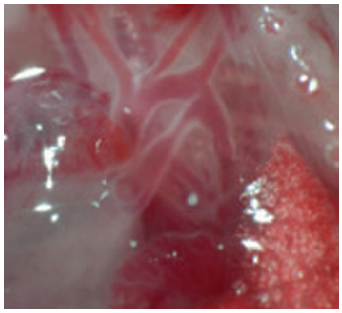
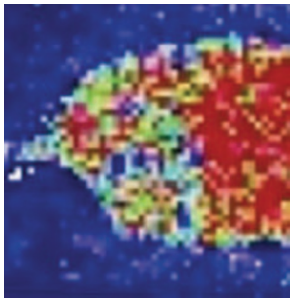
doi:10.1038/pr.2012.86

Closure…



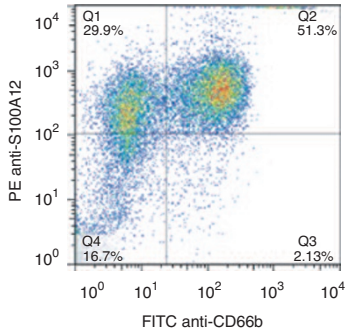
This issue features two articles on the ductus arteriosus (DA). In the first, Chen and colleagues suggest a novel physiological role for isoprostanes during postnatal vascular transition. The results of their experiments provide evidence that oxidative stress acts on membrane lipids to produce vasoactive mediators that affect DA closure and patency. **See page 122**

…and Patency



The second article on DA in this issue focuses on patent ductus arteriosus (PDA), a common, life-threatening complication in preterm infants. Because thromboxane A_2 (TXA_2) induces vascular contraction via TXA_2 receptor (TP), Yokota and colleagues hypothesized that TP stimulation promotes DA closure. In their study, low-dose TP stimulation in newborn rats appeared to constrict the DA with minimal adverse effects. This mechanism could be the basis of vasoconstrictors for PDA treatment. **See page 129**

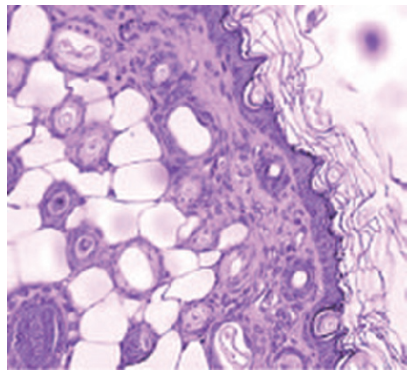
Pulmonary inflammation



Nathe and coinvestigators characterized innate immune activation in tracheal aspirates (TAs) of mechanically ventilated newborns. Correlation of endotoxin with TA inflammatory responses suggests endotoxin bioactivity and the possibility that endotoxin antagonists can mitigate pulmonary inflammation and its sequelae. **See page 203**

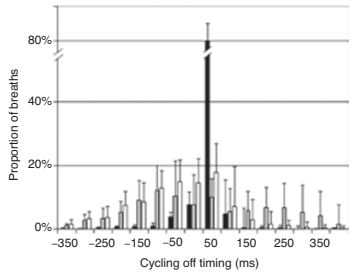
Neonatal hyperbilirubinemia

Neonatal hyperbilirubinemia is caused by increased bilirubin production and/or decreased bilirubin elimination. Although phototherapy safely and effectively reduces bilirubin levels, recent evidence suggests that it has adverse effects and therefore that alternative treatments are warranted. Schulz *et al*. investigated possible photosensitizing effects of



chromium mesoporphyrin and zinc deuteroporphyrin bis-glycol (ZnBG). Low doses of ZnBG appeared to retain maximal heme oxygenase inhibitory potency without photosensitizing effects and thus might be useful in treating neonatal hyperbilirubinemia. **See page 161**

Optimizing ventilation



Neurally adjusted ventilatory assist (NAVA) is a mode of ventilation controlled by the electrical activity of the diaphragm. Bordessoule and coinvestigators evaluated patient–ventilator interaction in infants during NAVA as compared with infants undergoing conventional ventilation. NAVA was associated with improved patient–ventilator interaction and delivered adequate ventilation with variable pressure. **See page 194**