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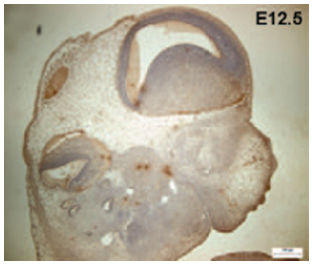
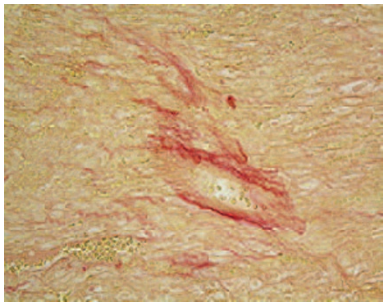
See page 13

Song and colleagues examined the temporal expression of angiotensin-converting enzyme 2 (ACE2) during renal, heart, lung, and brain organogenesis in the mouse. They demonstrated that kidney ACE2 mRNA levels are low on embryonic day 12.5, increase fourfold during development, and decline in adulthood. The investigators postulate that relatively high ACE2 protein levels and enzymatic activity observed during gestation may play a role in kidney, lung, brain, and heart organogenesis.

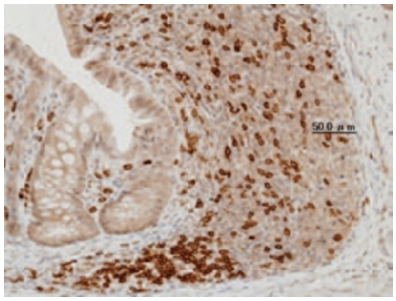


See page 25

Evans *et al*. tested the hypothesis that maternal hypoxia increases fetal cardiac matrix metalloproteinase 9 and collagen via peroxynitrite generation in fetal hearts. Maternal hypoxia induced oxidative/nitrosative stress and altered protein expression of the extracellular matrix via upregulation of the inducible nitric oxide synthase (iNOS) pathway in fetal heart ventricles. The authors conclude that iNOS-derived NO might be an important stimulus for the adverse effects of peroxynitrite in hypoxic fetal hearts.

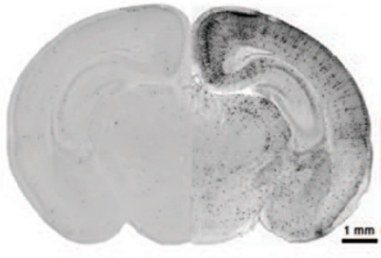


See page 46



To examine the immunomodulatory effects of probiotics during early infancy, Ohtsuka *et al*. administered *Bifidobacterium breve* M-16V to rat pups during the newborn or weaning period. The investigators looked at the expression of inflammatory genes using cDNA microarray and real-time PCR. Their findings support a possible role for *B. breve* in mediating anti-inflammatory and antiallergic reactions by modulating the expression of inflammatory molecules during the newborn period and by regulating the expression of costimulatory molecules during the weaning period.

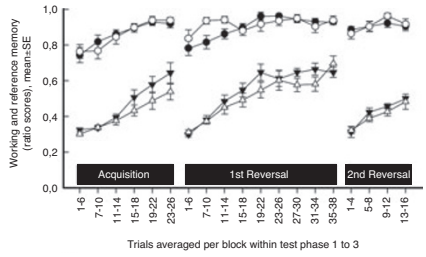
See page 54



Propylene glycol (PG) is a solvent commonly used in medical preparations. It is generally considered safe at regulated concentrations. To explore its apoptotic potential in the developing central nervous system, Lau and co-workers exposed C57BL/6 mice (P4-30) to PG shortly after birth. They also assessed whether PG contributes to the neurotoxic potential of phenobarbital. The agents produced significantly more apoptosis when used in combination, suggesting that finding an alternative nonapoptotic solvent might be beneficial to patients.

See page 71

Similarities between human and piglet newborns with regard to low birth weight (LBW) and development make LBW piglets a potential naturally occurring model of cognitive impairment in LBW humans. To examine this potential model, the investigators tested pairs of LBW and normal-birth-weight piglets on a spatial hole-board task. The results suggest that LBW is associated with mild cognitive impairments.



See page 85

Corbo *et al*. retrospectively compared medical and neuroimaging data for 19 newborns who received 72 hours of whole-body cooling with those for 19 noncooled newborns to determine whether hypothermia was associated with improved injury severity as measured by magnetic resonance imaging (MRI) and magnetic resonance spectroscopy within the first 14 days of life. Hypothermia therapy was associated with a decrease in detectable cortical and subcortical lactate as well as in subcortical lesions on MRI.