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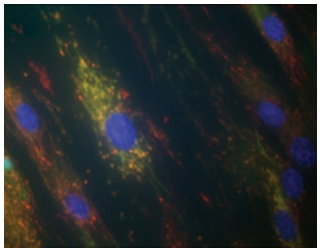
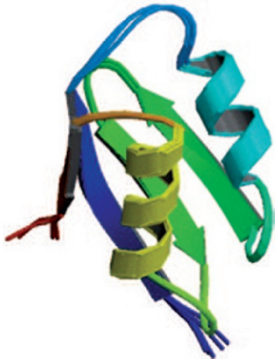
Diagnosing OXPHOS defects



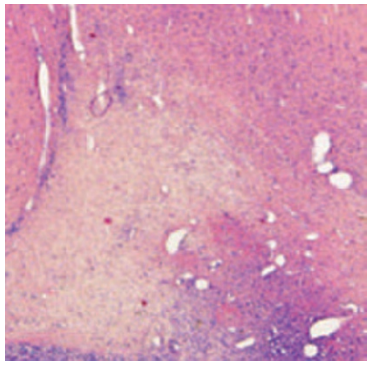
Protons are pumped from the mitochondrial matrix into the intermembrane space via oxidative phosphorylation (OXPHOS), creating an electric membrane potential ($\Delta\psi$) that is used for production of adenosine triphosphate. Defects in one or more of the OXPHOS complexes are associated with a variety of clinical symptoms, often making it difficult to pinpoint the causal mutation. Imaging of $\Delta\psi$ in cultured skin fibroblasts appears to be a useful method for evaluating OXPHOS function in cultured cell lines. **See page 232**

Copper trafficking



Menkes disease (MD) is a disorder of copper transport caused by ATP7A mutations. Munakata and colleagues investigated the copper-trafficking efficacy of copper-pyruvaldehyde bis(N^4-methylthiosemicarbazone) (Cu-PTSM), a lipophilic copper complex, in a macular mice model of MD. Although the copper-trafficking efficacy of Cu-PTSM was limited, the improved CO activity in the brain suggests that Cu-PTSM delivers copper more effectively to neuronal CO than does $CuCl_2$. **See page 270**

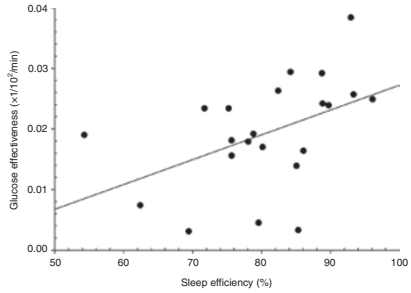
LPS and white matter



The precise neuroanatomical and microstructural consequences of fetal inflammation remain largely unknown. van de Looij *et al.* characterize changes in white-matter structure following lipopolysaccharide (LPS) exposure by comparing advanced magnetic resonance imaging with histopathological correlates in preterm-equivalent fetal sheep, which have a white-matter structure similar to that of the human brain. **See page 285**

Sleep, breathing, and obesity

Lesser and colleagues hypothesized that the severity of sleep-related breathing disorder (SRBD) in adolescents is associated with



metabolic impairment. Their results suggest that sleep fragmentation and intermittent hypoxemia might lead to metabolic impairment in obese adolescent Latino males, independent of age and adiposity. In addition, SRBD may increase the risk of metabolic syndrome and type 2 diabetes in obese adolescents. **See page 293**

Stress and intrauterine growth

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In humans, the relationship between intrauterine stress and fetal well-being is still unclear. Hompes *et al.* investigated the influence of maternal cortisol and emotional state during pregnancy on fetal intrauterine growth. Their results suggest that both these factors might affect fetal growth, albeit differentially at different time points during gestation. **See page 305**