Adverse Effects of Resveratrol in Multiple Sclerosis Models

Resveratrol is a neuroprotective polyphenol compound found in red grapes, peanuts, and red wine. Sato et al (Am J Pathol 2013, 183:1390–1396) tested the neuroprotective function of resveratrol in autoimmune and viral models of multiple sclerosis: experimental autoimmune encephalomyelitis and Theiler murine encephalomyelitis virus-induced demyelinating disease. Surprisingly, resveratrol treatment significantly exacerbated demyelination and inflammation without neuroprotection in the central nervous system in both models. Caution should be exercised for potential therapeutic applications of resveratrol in human diseases, including multiple sclerosis, pending further research.

Bile Acids Modulate Acetaminophen Hepatotoxicity

Acetaminophen (APAP) overdose is the major cause of acute liver failure in the Western world. Using a mouse model, Bhushan et al (Am J Pathol 2013, 183:1518–1526) explored the role of bile acids in initiation of liver injury and stimulation of liver regeneration after APAP overdose. Bile acids play a critical role in initiation, modulation, and recovery of APAP-induced liver injury. Specifically, depletion of bile acids using cholestyramine resulted in increased APAP-induced liver injury and slower recovery. In contrast, supplementation of cholic acid resulted in delayed initiation of liver injury and rapid recovery after APAP treatment. Taken together, the data indicate that bile acids may be protective against APAP-induced liver injury.

CB2 Activation Blocks Monocyte BBB Migration


Chrysotile Asbestos Has Transforming Potential

Malignant mesothelioma (MM) is strongly associated with asbestos exposure. Qi et al (Am J Pathol 2013, 183:1654–1666) compared the biological, morphological, and transcriptional effects of crocidolite (most oncogenic) and chrysotile (most commonly used) asbestos fibers on primary human mesothelial cells in tissue culture and in mice. Chrysotile induced molecular changes associated with MM development similar to those induced by crocidolite, but these changes were transitory. HMGB1 and TNF-α were key mediators of these processes; E-cadherin down-regulation and β-catenin signaling pathways were induced by both fiber types and were enhanced by TNF-α. However, continuous administration of chrysotile was required for sustained high serum levels of HMGB1. Thus, the different biopersistence properties of the two fiber types influence their biological activities.

Progesterone Signaling Inhibits Cervical Cancer

Cervical cancer is the third most frequent malignancy and the fourth leading cause of cancer death in women worldwide. Using the human papillomavirus transgenic mouse model, Yoo et al (Am J Pathol 2013, 183:1679–1687) examined the role of progesterone signaling in human cervical cancer. Progesterone receptor (PR) inhibited cervical and vaginal epithelial cell proliferation in a ligand-dependent manner, and the synthetic progestin medroxyprogesterone acetate promoted regression of PR-positive cervical cancers and precancerous lesions in female lower reproductive tracts. Results provide the first experimental evidence that progesterone signaling is inhibitory for cervical carcinogenesis in vivo.