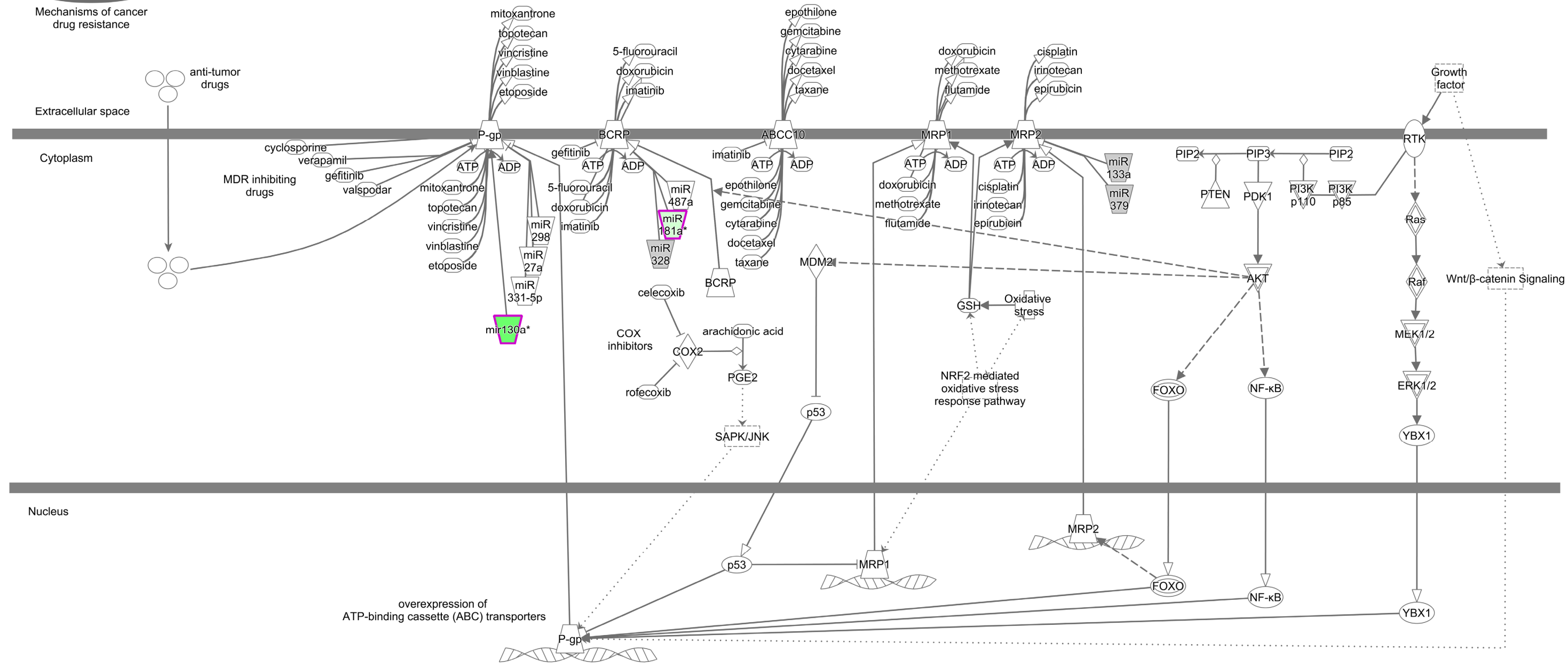
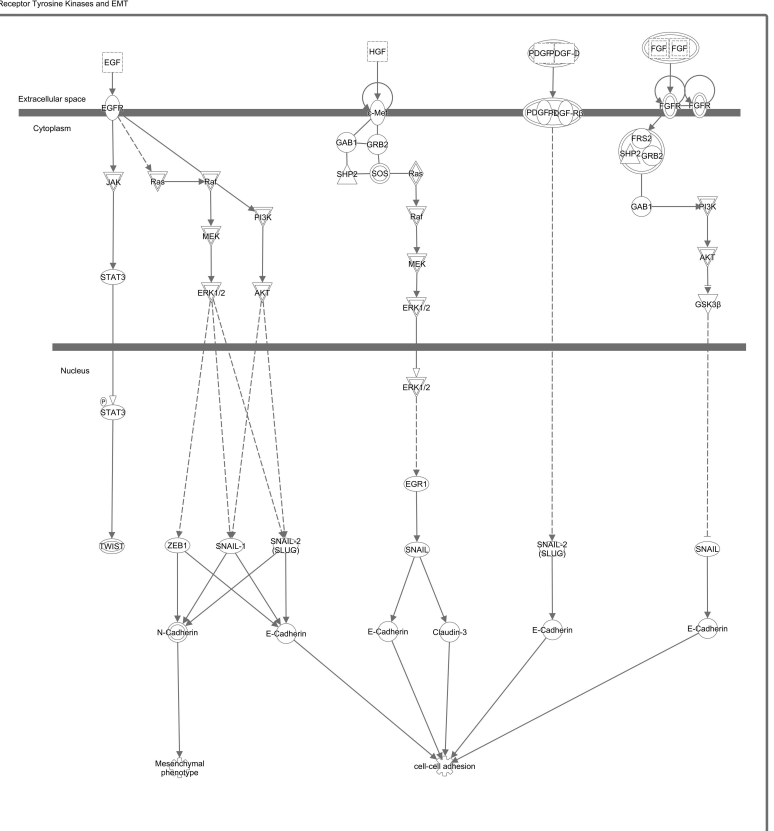
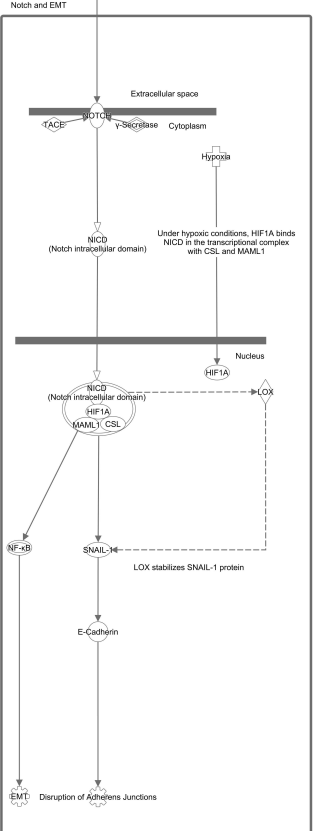
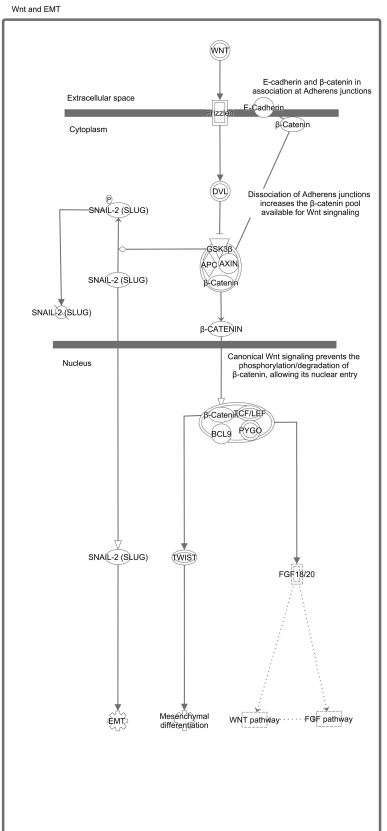
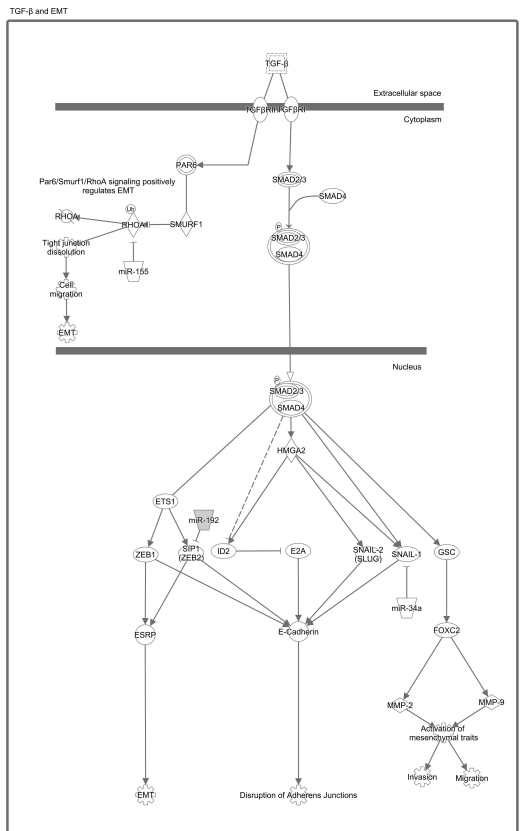
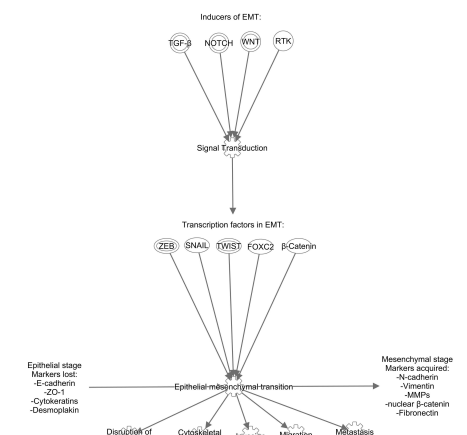
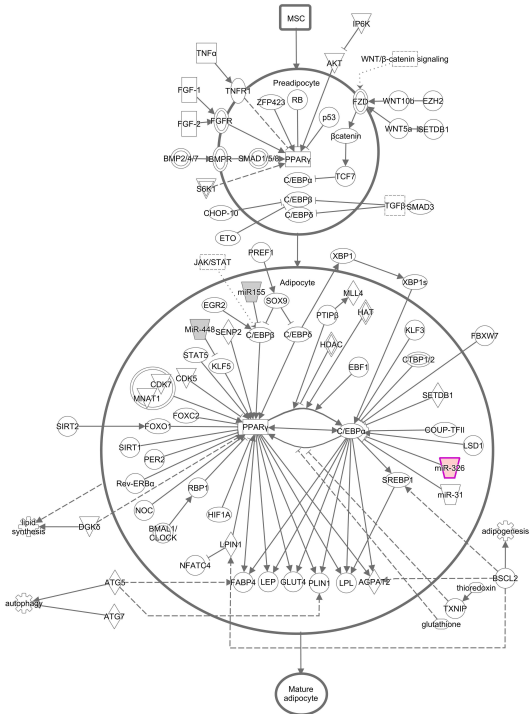


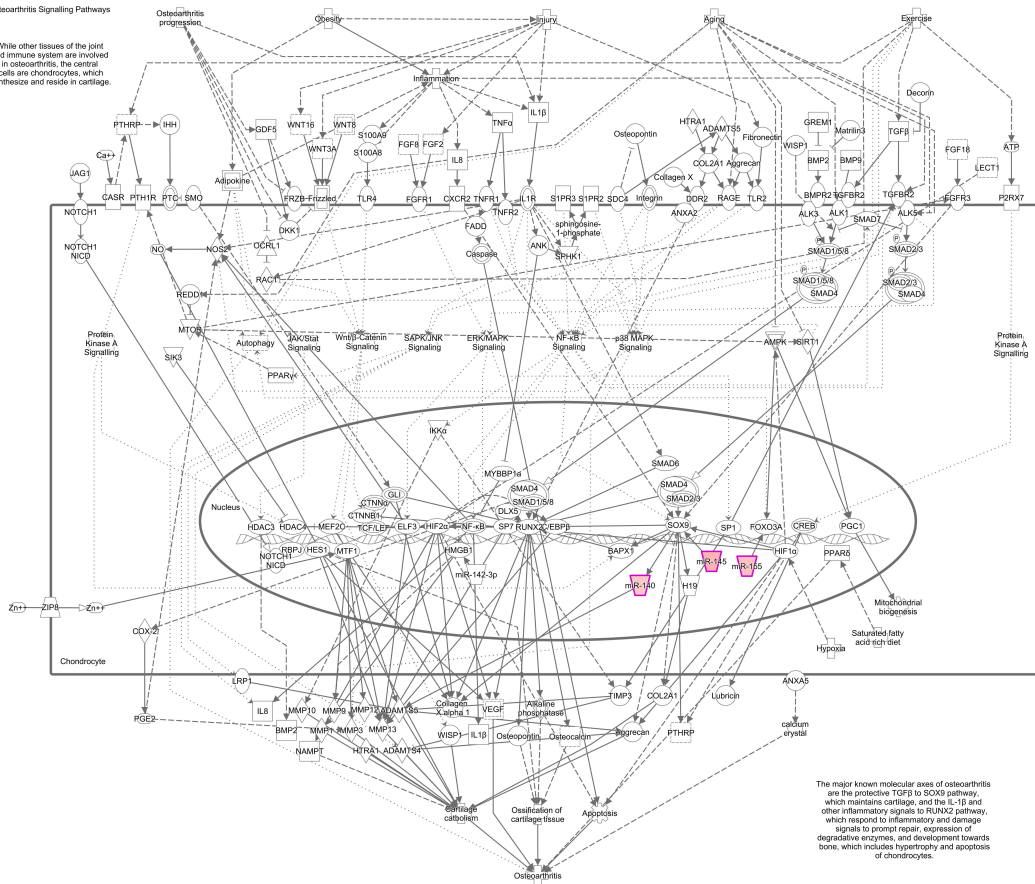
ABC drug transporter-mediated multi drug resistance (MDR) drug efflux





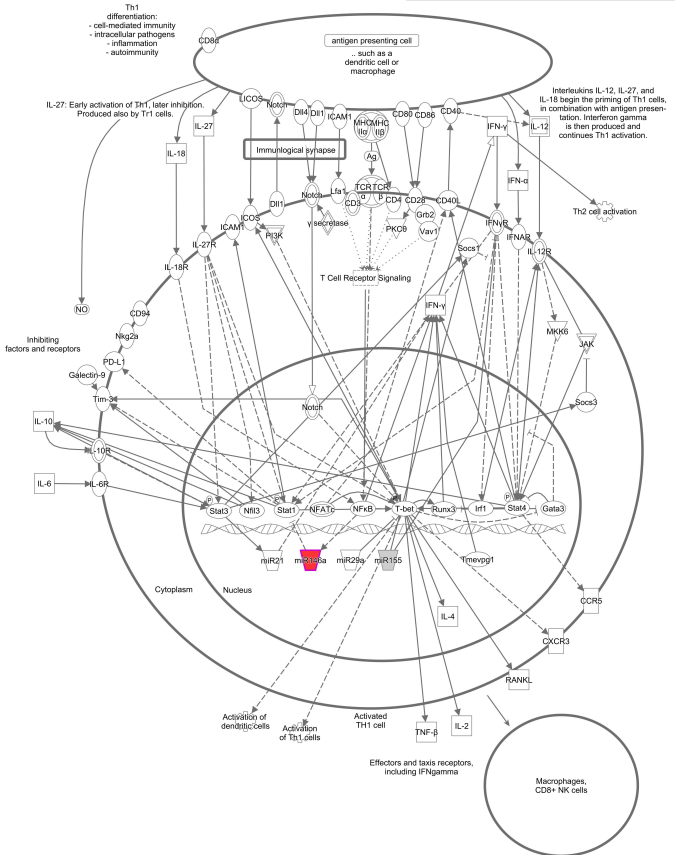


While other tissues of the joint and immune system are involved in osteoarthritis, the central cells are chondrocytes, which synthesize and reside in cartilage.



The major known molecular axes of osteoarthritis are the protective TGFβ to SOX9 pathway, which maintains cartilage, and the IL-1β and other inflammatory signals to RUNX2 pathway, which respond to inflammatory and damage signals to prompt repair, expression of degradative enzymes, and degeneration towards bone, which includes hypertrophy and apoptosis of chondrocytes.

CD4<sup>+</sup> T cells play a critical role in adaptive immunity. Following T cell receptor activation by antigen-presenting cells (APCs), CD4<sup>+</sup> T cells differentiate into one of several lineages of T helper cell subtypes including Th1, Th2, Th17, and iTreg, depending on the ambient pattern of cytokine production.



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