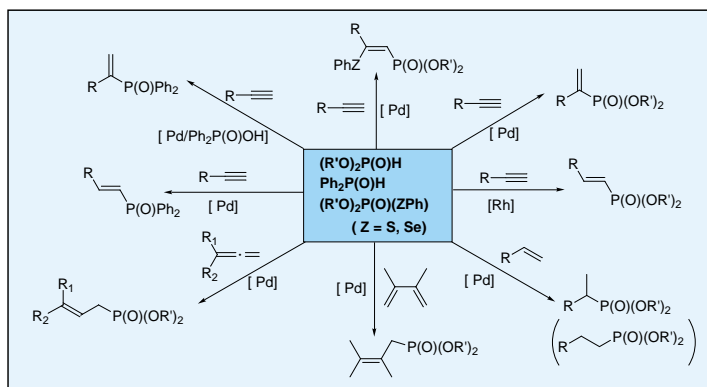


# Catalytic Synthesis of Organophosphorus via Transition Metal Complexes

Oxidative addition of heteroatom bonds of phosphorus compounds (P-H, P-S, P-Se) to transition metal complexes readily takes place and triggers a variety of catalytic addition reactions of the bonds to carbon—carbon un-

saturated linkages. These new catalytic reactions have a wide generality as well as high regio- and stereoselectivity and provide efficient new methodologies for the synthesis of versatile organophosphorus compounds.

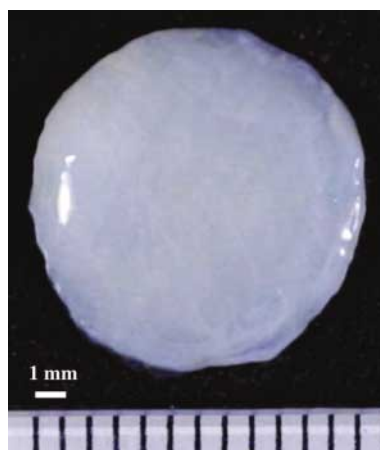
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New efficient catalytic reactions for the synthesis of organophosphorus compounds

# Development of Novel Scaffold for Tissue Engineering

A novel kind of biodegradable porous scaffolds has been developed by our group by introducing collagen microsponges in the pores or interstices of a synthetic polymer sponge or mesh. Use of the synthetic sponge or mesh as a skeleton facilitated formation of the hybrid scaffolds into the desired shapes, reinforced the hybrids and resulted in easy handling, while collagen microsponges contributed good cell interaction and hydrophilicity. Bovine articular chondrocytes were cultured in the hybrid scaffold to engineer articular cartilage. The chondrocytes expressed type II collagen and aggrecan, suggesting the formation of articular cartilage-like tissue.



Tissue Engineered Cartilage

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