

Enantioselective Approaches to Vitamin D Total Synthesis

Jerzy Wicha

Institute of Organic Chemistry, Polish Academy of Sciences,

POB 58, 01-224 Warsaw, Poland

Enantioselective approaches to hydroxy sulfone **1** which is used as a building block in calcitriol **2** synthesis, will be discussed. These include:

- (1) an acid - catalyzed tandem conjugate addition of optically active ketene acetals **3** ($n = 1$ or 2) to enones **5** and **4**,
- (2) an addition of achiral ketene acetals to achiral cyclic α,β -unsaturated ketones in the presence of a catalyst prepared from nonracemic 2,2'-dihydroxy-1,1'-binaphthol and tetra-valent Ti derivatives (model studies),
- (3) amino acid - catalyzed asymmetric Robinson annulation of cyclopentanone derivatives, applying (thiophenyl)methyl vinyl ketone **4** and similar methyl vinyl ketone derivatives.

