

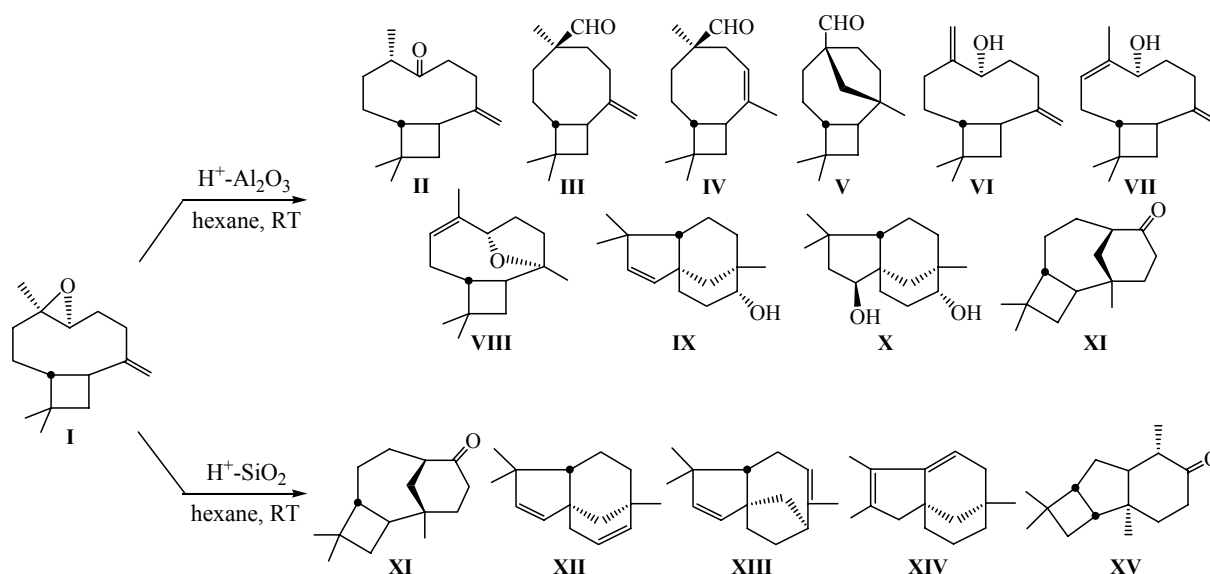
Rearrangement of Caryophyllene Oxide Catalyzed by Sorbents Impregnated with Acid

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The rearrangement of caryophyllene oxide (**I**) in presence of alumina or silica gel impregnated with H₂SO₄ (H⁺-Al₂O₃ or H⁺-SiO₂) has been investigated.

Reaction catalyzed by H⁺-Al₂O₃ results in sum of products (**II**)-(**XI**), while the use of H⁺-SiO₂ as catalyst allows to obtain substances (**XI**)-(XV).



Detailed analysis of experimental data enables to conclude that H⁺-Al₂O₃-catalyzed reaction is kinetically controlled process, but compounds (**XI**)-(XV) are products of thermodynamically controlled reaction. Calculations of products heats of formation confirm this speculation.

Behaviour of H⁺-SiO₂ prepared from silica gel with particles less than 0.140 mm is similar to that of H⁺-Al₂O₃. This fact allows to assume the existence of dependence of catalytic activity on size of sorbent particles.