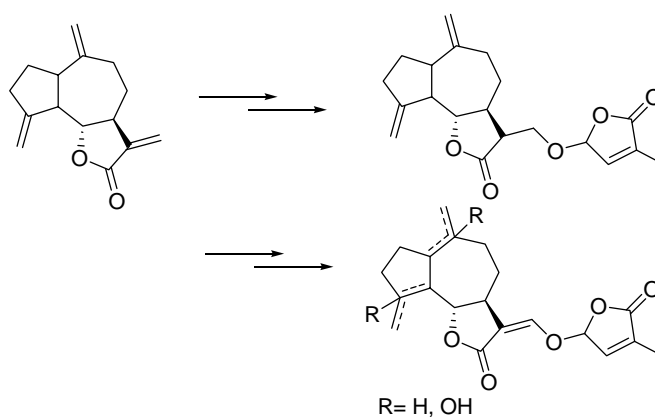


SYNTHESIS OF SESQUITERPENE LACTONES-ENOL- γ -LACTONES AS STRIGOL ANALOGUES

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Strigolactones obtained from several witchweed (*Striga* spp.) and broomrape (*Orobanche* spp) species present as most outstanding characteristic the presence of a lactone-enol- γ -lactone system that has been proposed as responsible of the activity. Sesquiterpene lactones are commonly present in sunflower and specifically induce the germination of *O. cumana* –the sunflower specific parasitic weed. Main difference between both families is the absence of the second enol- γ -lactone moiety. Otherwise, sesquiterpenes lactones specifically induce the germination of *O. cumana* seeds, but remain inactive with other *Orobanche* species. Herein we report the synthesis of several sesquiterpenes lactones with a guaianolide skeleton carrying the typical enol- γ -lactone system.



Germination activity of compounds synthesized was tested for their present different selectivity towards *O. cumana* (sunflower), *O. ramosa* (tobacco), and *O. crenata* (green pea). Those compounds bearing the second lactone ring loss their specificity and stimulate the germination of all broomrape species. Based on these results we hypothesize that the lactone ring is specifically recognized by sunflower broomrape, while the lactone-enol- γ -lactone system present in natural strigolactones is recognized by broomrapes and witchweeds species.