

Oxidation of Squalene

By

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## Abstrak

Pengoksidaan-foto Skualena dalam pelarut metanol-benzena (1:4) telah dikaji dengan tujuan untuk mendapatkan alkohol alilik melalui tindakbalas jenis ene.

Alkohol ini mungkin adalah sangat berguna sebab ia dapat menjalankan proses penutupan gelangan untuk memberi suatu sistem gelangan, seperti yang telah ditunjukkan oleh banyak rantai poliena yang lain yang mempunyai kumpulan berfungsi alilik. Lagipun oleh kerana Skualena, melalui Skualena-2,3-epoksidanya, adalah suatu bahan pemula dalam biosintesis kolesterol, jadi adalah mungkin mengalami proses penutupan gelangan poliena secara biomimetik untuk menghasilkan suatu sistem gelangan semulajadi.

Dua jenis mono-alkohol alilik, satu sekunder dan satu lagi tersier telah dikenalpasti. Kedua-duanya adalah hasil pengoksidaan hujung rantai Skualena. Bukti mutlak dengan kaedah-kaedah kimia telah memberi maklumat yang terhad dan pengenalpastian yang telah dijalankan adalah kebanyakannya melalui spektra-spektra.

Beberapa percubaan penutupan gelangan alkohol-alkohol itu telah dijalankan. Keputusan-keputusan awal menunjukkan proses ini telah berlaku.

## Abstract

Dye-Sensitized photo-oxidation of Squalene in methanol-benzene (1:4) have been investigated with a view to obtaining allylic alcohols through an ene-type reaction. These allylic alcohols can be of significant because they can undergo cyclizations to give ring systems as has been demonstrated by many other polyene chains with allylic alcohol functions. Furthermore, since Squalene, through Squalene-2, 3-epoxide, is the precursor in the biosynthesis of cholesterol it may therefore be possible for the allylic alcohols thus obtained to undergo biomimetic polyene cyclizations to give some forms of natural ring systems.

Two allylic mono-alcohols, one secondary and the other tertiary, were indentified. Both were the results of the terminal oxidation of the Squalene chain. Absolute proof by chemical means gave limited results and identification was done mainly from their spectra.

A few attempts to cyclize the alcohols were made. Preliminary results indicated that cyclization has occured.