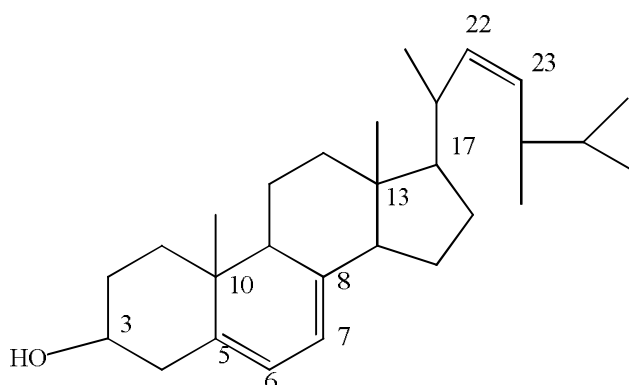
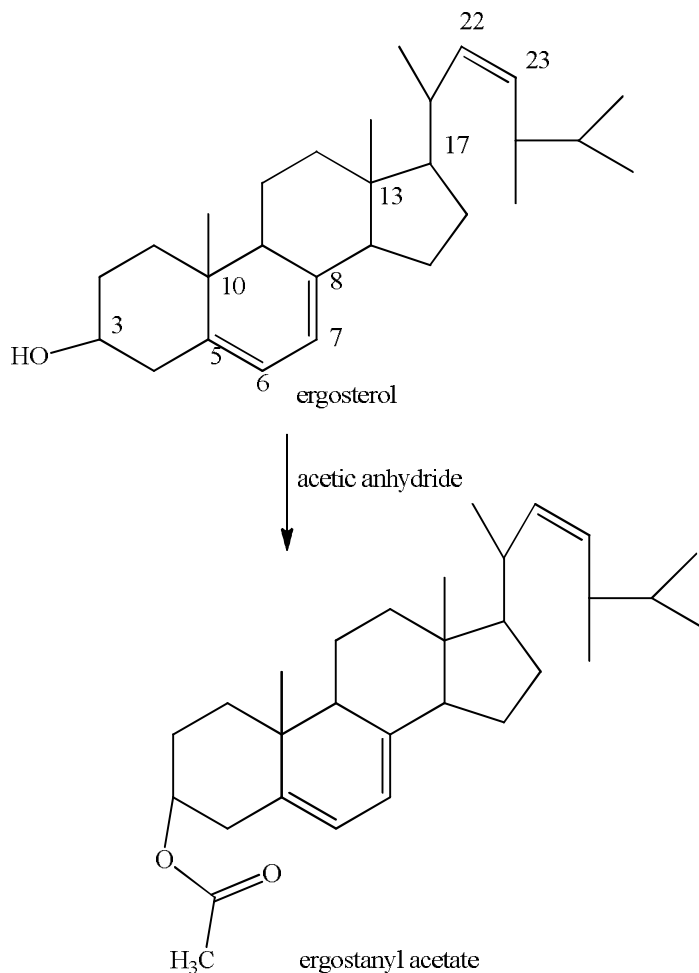


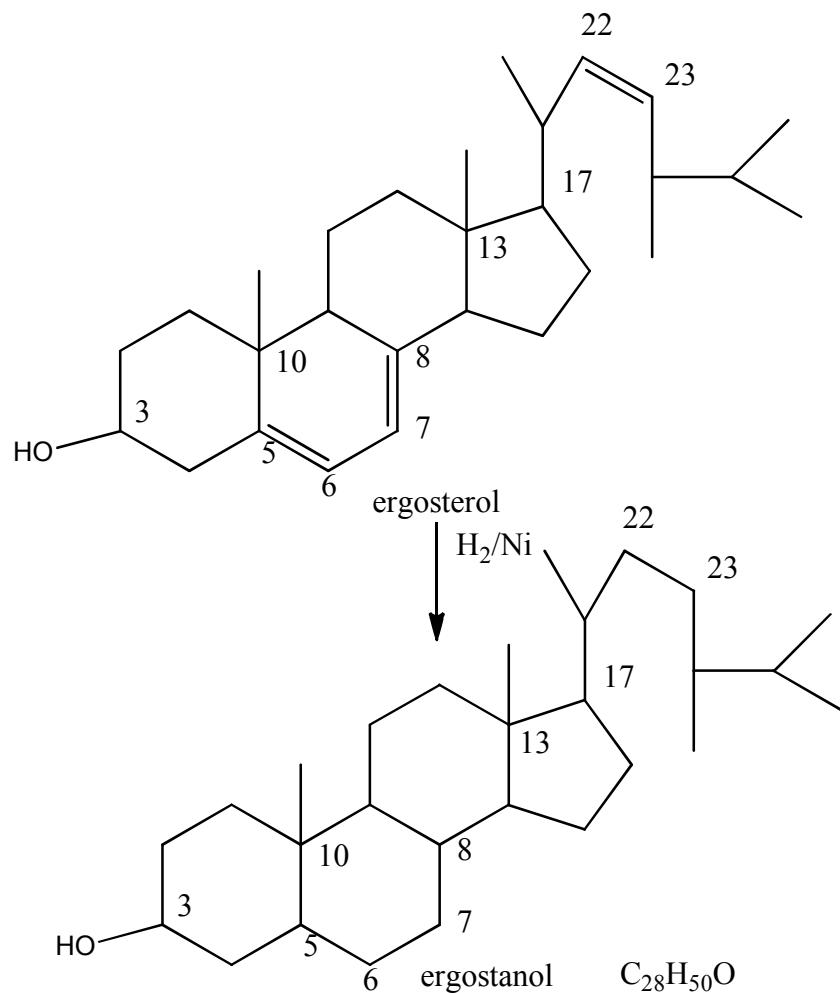
## 2-Ergosterol

$C_{28}H_{44}O$  ; Occurs in yeast



The oxo function is one hydroxyl group from its reactions such as acetylation, benzylation, or esterification. or formation of monoacetyl or monobenzoyl derivatives.

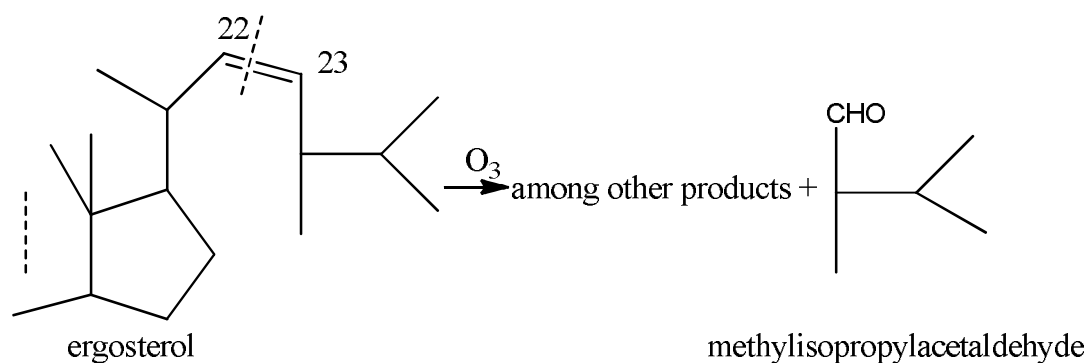




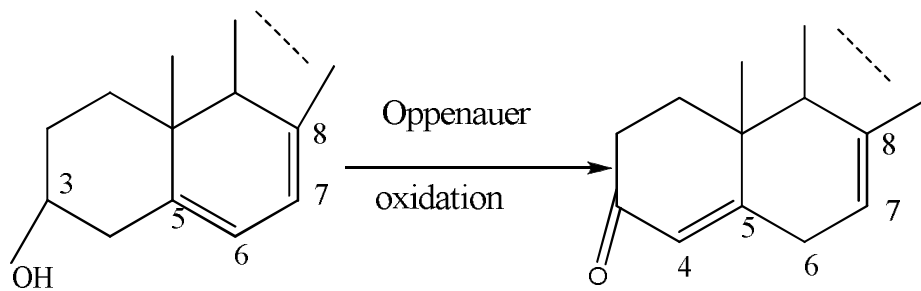
Thus, ergosterol contains three double bonds, because it absorbs three hydrogen molecules.

There are two conjugated double bonds, since it reacts with one molecule of maleic anhydride to give an adduct and the third is isolated.

There is one double bond at  $C_{22}-C_{23}$  in the side chain from this reaction.

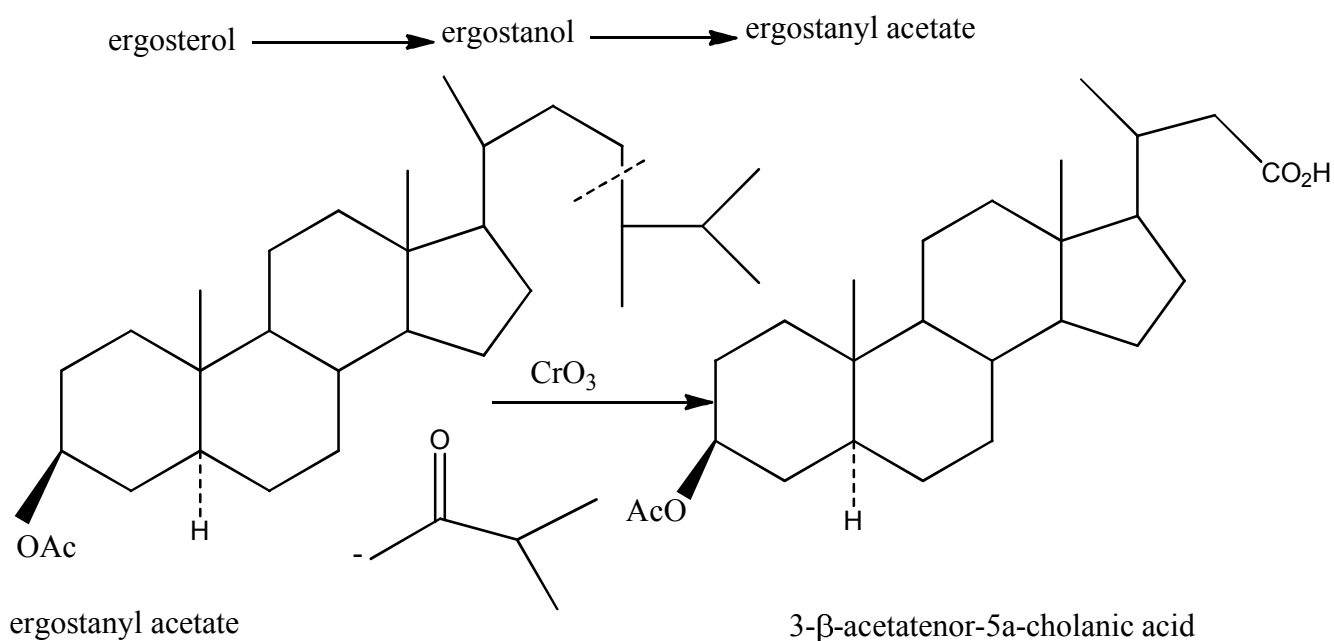


Thus, the other two double bonds must be in the nucleus,



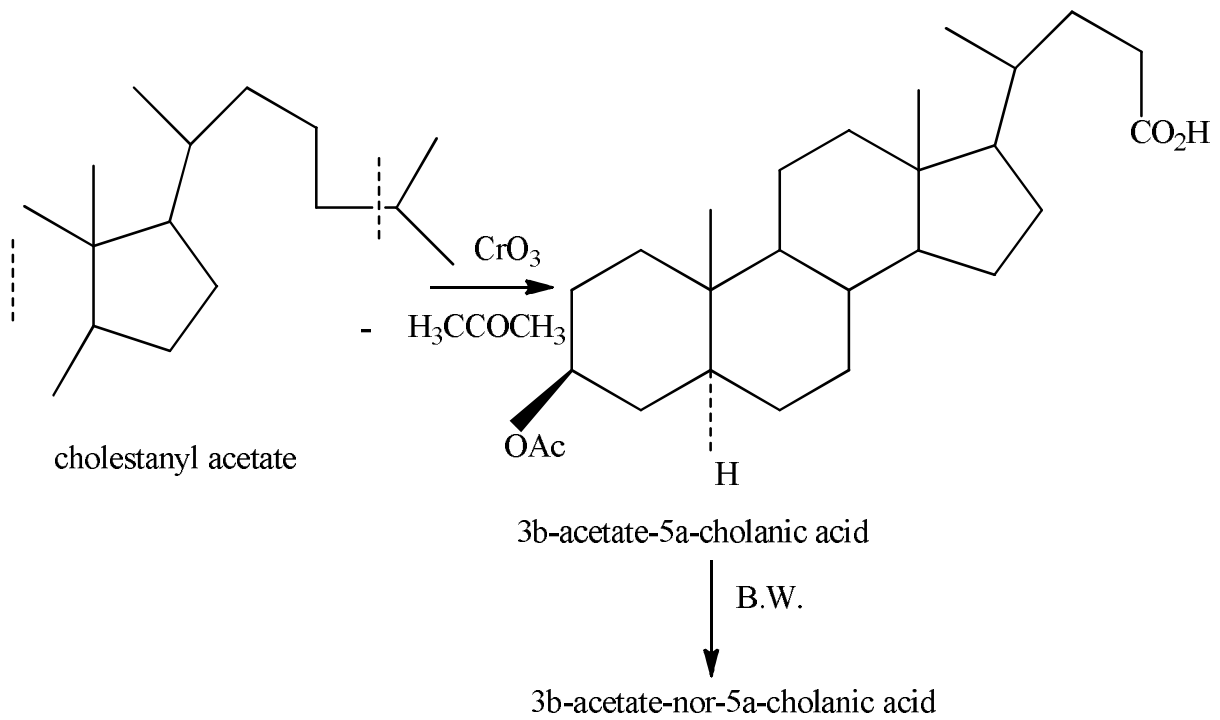
Since , one double bond transefered from C<sub>5</sub>-C<sub>6</sub> to C<sub>4</sub>-C<sub>5</sub> ,means that the another double bond should be at C<sub>7</sub>-C<sub>8</sub> .

Route A :



Route B :



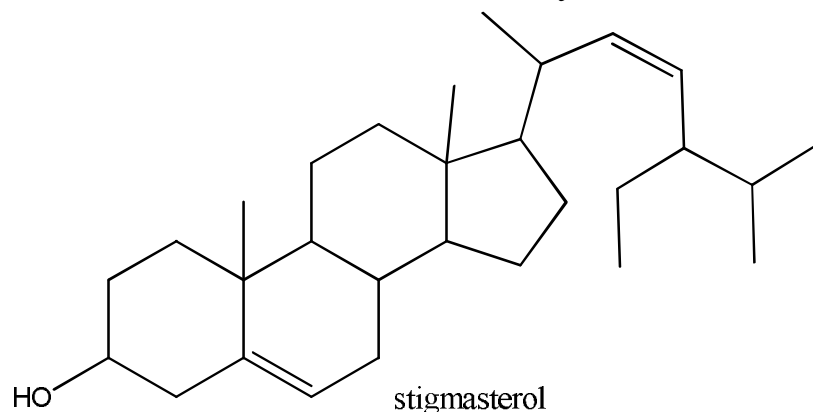


This means that both of ergosterol and cholesterol have the same nuclei .

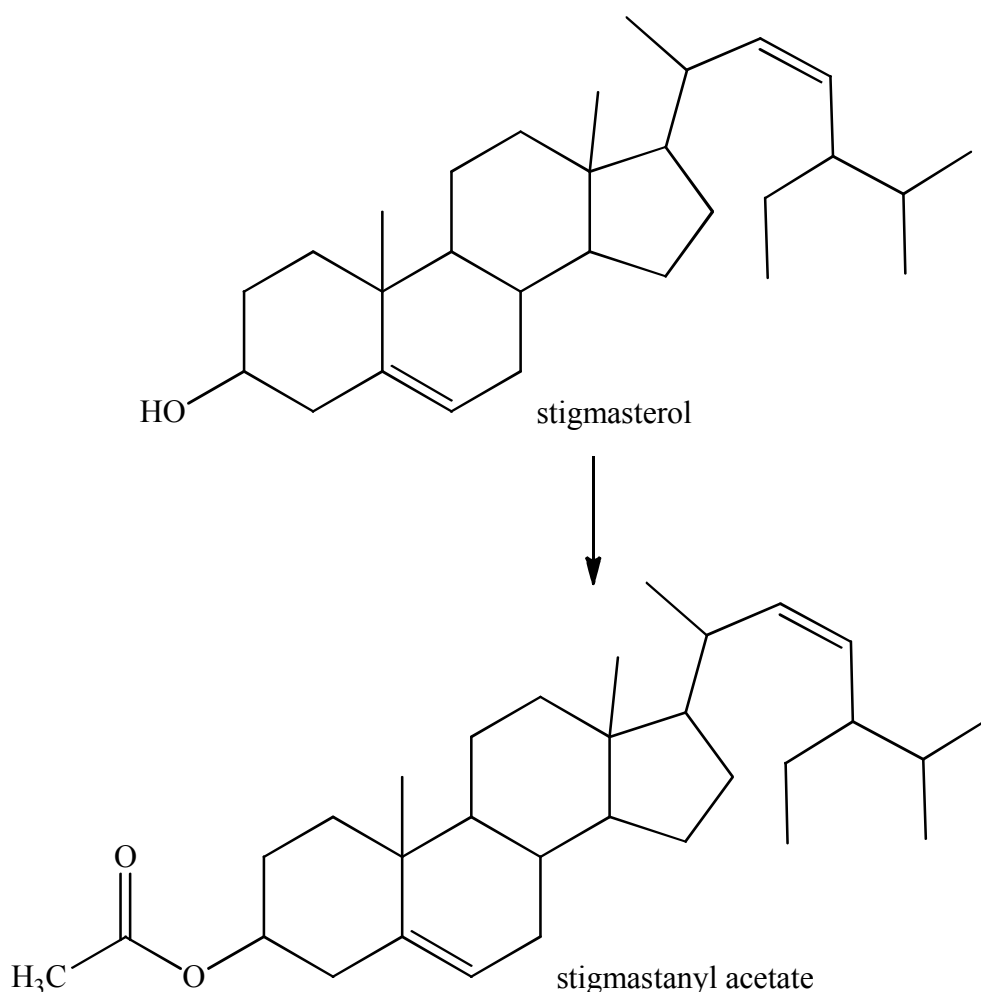
Also have the same position of both hydroxyl groups , two angular methyl groups, and the side chain.

### 3-Stigmasterol

$C_{29}H_{48}O$  ; Isolated from soya bean

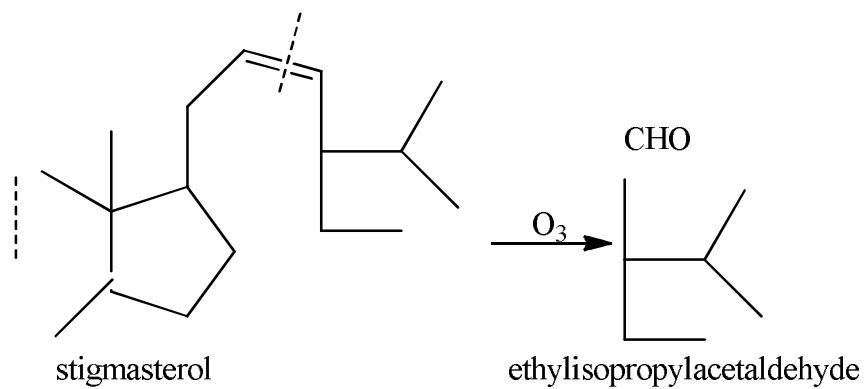


The oxo function is hydroxyl group from its reactions such as acetylation , benzylation , or esterification.



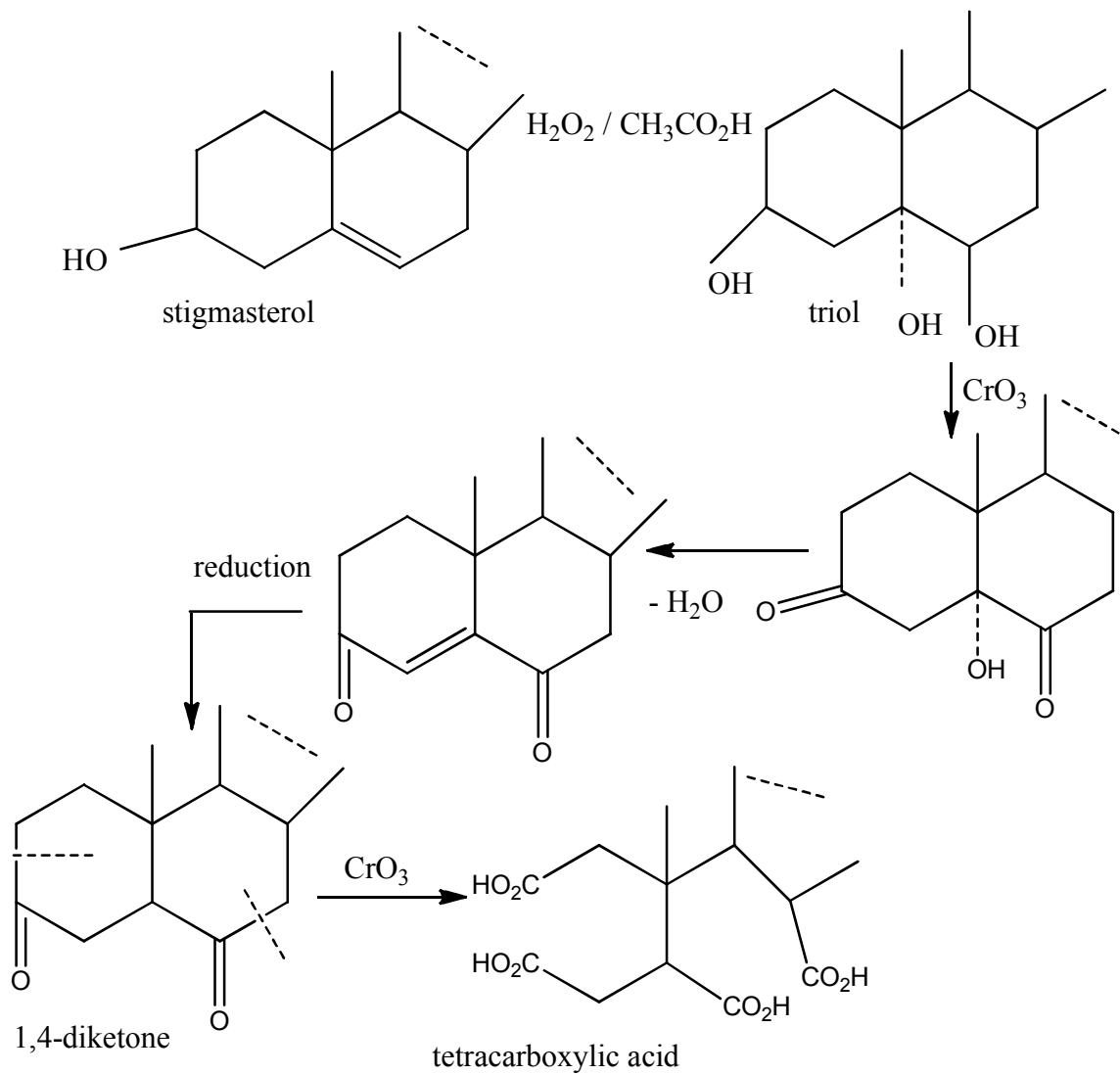
This compound contains two bonds since it reacts with two molecules of hydrogen to give stigmasteranol with M.F.  $C_{29}H_{52}O = C_nH_{2n-6}$  and reacts with two bromine molecules to give tetrabromide derivative ,these two bonds are isolated ,because there is no D.A.R .

Reaction of stigmasterol with ozone methylisopropylacetaldehyde and give other products , this give an evidence for the presence of one double bond in the side chain at  $C_{22}-C_{23}$  .

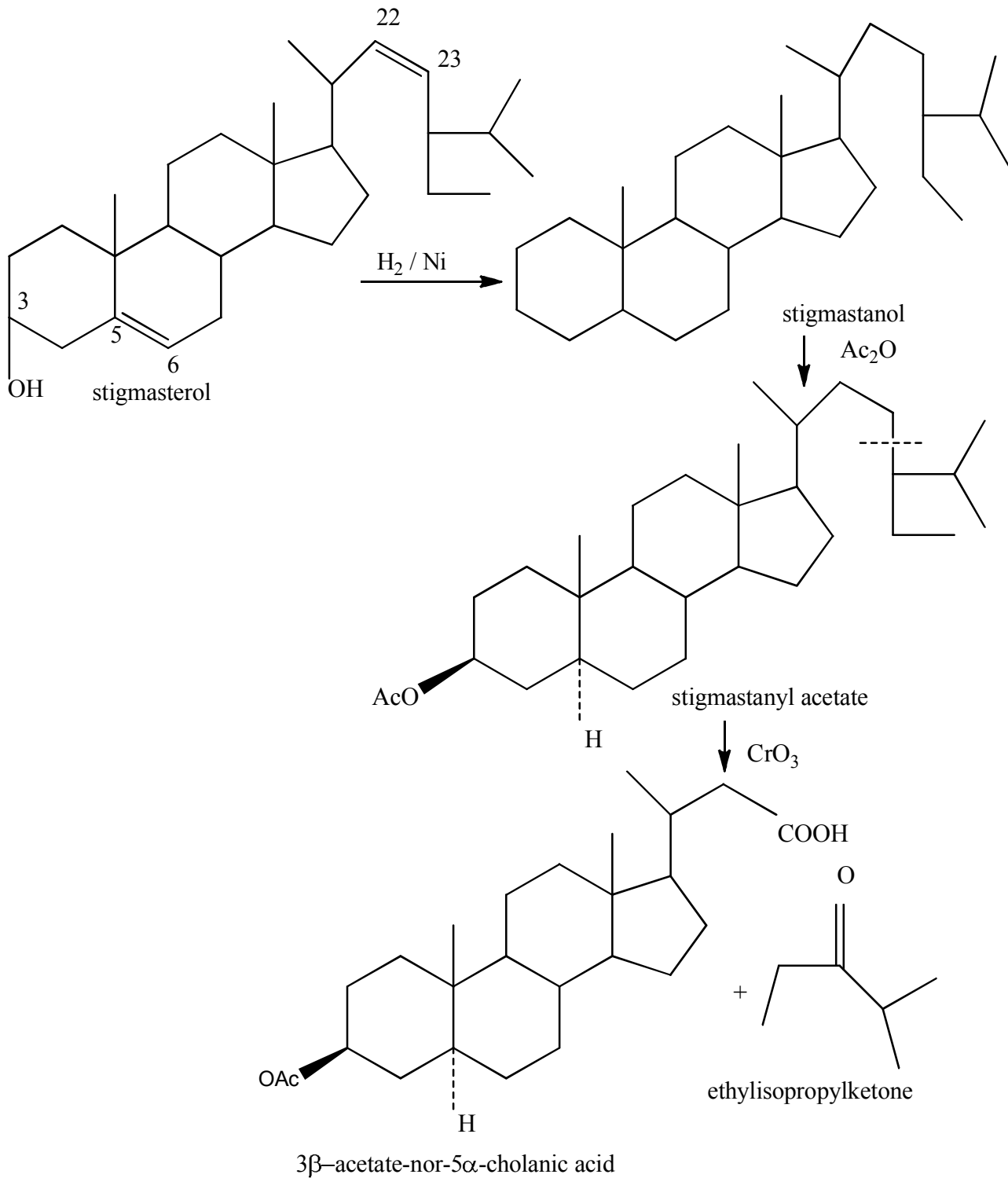


Thus, the another double bond must be in the nucleus.

The following reactions indicate the presence of in the nucleus at C<sub>5</sub>-C<sub>6</sub>



Route A:



3β-acetate –nor-5α-cholanic acid also prepared from cholesterol as in ergosterol Route B