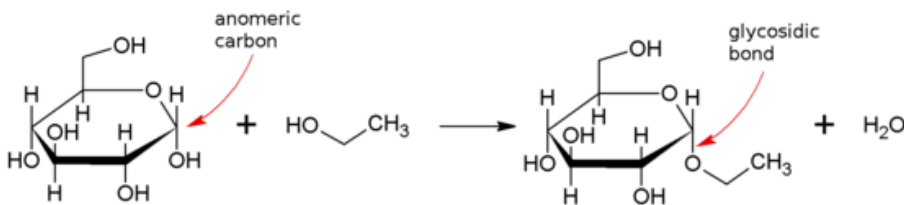


6.3 Alternative metabolic routes of Alcohols

Although the dehydrogenation of ethanol is the primary route of ethanol metabolism, small amounts of ethanol undergo alternative routes.

Ethanol can be covalently bonded to a molecule of glucuronic acid and then slowly excreted in the urine.

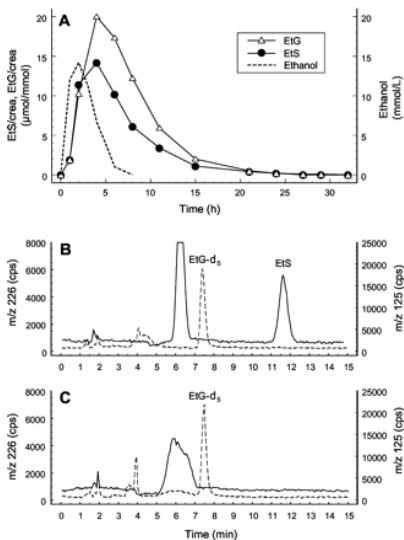


Glucuronic acid

This reaction is analogous to the addition of glucuronic acid to bilirubin, which was discussed in Alkene chapter.

Although this reaction occurs on less than 1% of the ethanol ingested, it is excreted in the urine and can be detected for several days, in contrast to the dehydrogenation reactions which usually metabolize the ethanol in a few hours. This test thus allows determination of whether an individual has been drinking in the last several days as opposed to the direct breath and blood tests which will give positive results for 5-10 hours after drinking.

This method is very sensitive and one has to be careful of false positives which can result from using cough medicines, some mouth washes, and after shave lotions.



It is used primarily on individuals who have an alcohol abuse problem and have agreed to abstain from alcohol completely in return for not being jailed or having their license revoked. It is not a cheap or routine test and has most commonly been used on doctors and other health professionals who have an alcohol abuse problem which is endangering their patients.