Biotransformation is defined as the chemical modification made by an organism on a compound. Although this term is commonly used in pharmacology and toxicology, from the brewer’s perspective it refers to the interaction of a hop compound and a *Saccharomyces* spp., which leads to a new aromatic compound through an enzymatic reaction (hydrolysis).

Recent studies have revealed the importance of biotransformation based on the catalysis of glycosidic bonds in the production of hoppy beers. Figure 1 shows the mentioned breakage (hydrolysis) of a non-aromatic compound into a glucose molecule and a linalool (hop oil), obtaining more aromatic compounds and fermentable sugars derived from an inert compound found in hops.

**Beta-glucosidase activity in each Lallemand Brewing yeast strains.**

As shown in Figure 2, the Lallemand Brewing yeast strains that contain highest β-glucosidase activity are BRY-97, New England and Belle Saison. This would suggest that they are the most suitable yeast strains for promoting the biotransformation in yeast.

It is also important to note that this interaction may have unfavorable effects if we dry hop our beers under active fermentation (e.g. first fermentation) will lead to the reduction of hop oils by:

- CO₂ stripping (hop oils are very volatile)
- Masking (fermentation compounds may mask the hop oil aroma)
- Adsorption (hop oils adsorbed by yeast membrane, which is removed later on)

However, if dry hopping is performed at the very end of the fermentation, where there is lower CO₂ production (which kept within the tank) but yeast is still very active, the following benefits occur:

- Less CO₂ stripping (more hop oils kept in the beer matrix)
- Reduction of dissolved oxygen (DO) by active yeast during dry hopping
- Ethanol presence (more hop oil solubility)
- Higher temperature (more solubility)
- Some fermentation left (mixing effect due to beer turbulence)
- Biotransformation