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## Characterising typicality of French and German wines

Foods produced only in a certain region, or by a distinct process are known as 'typical' foods.

The TYPIC European project ([www.typic.org](http://www.typic.org)) worked on dry-cured ham from Spain and France and red wine from France and Germany. Its aims were to:

- assess what factors influenced consumers to buy (or not buy) typical products
- describe the selected products by tasting and chemical analysis in order to give guidelines to the producers and regulators of typical food.

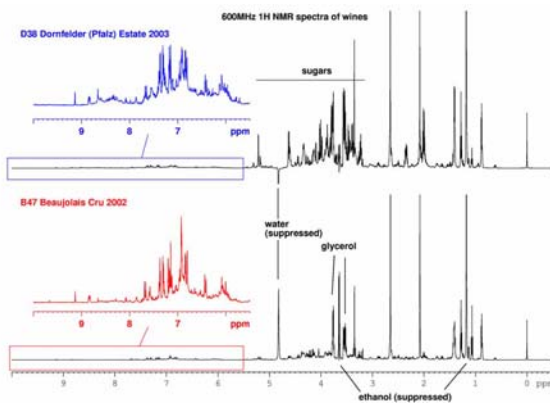
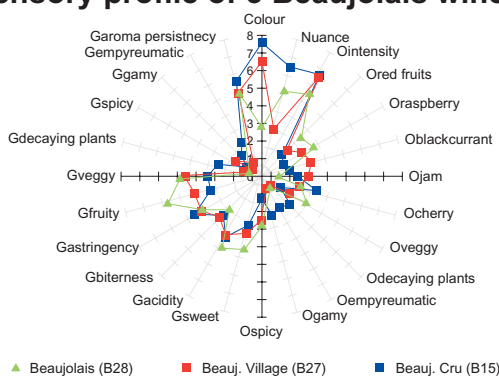
Wines from Beaujolais (Gamay grape) and the Pfalz (Dornfelder grape) plus some 'outsiders' were studied.

- Typicality was defined by experts who tasted the wine and scored key attributes on a 'just about right' scale
- The wines were scored by trained panels (French and German) for sensory attributes of colour, aroma, and taste
- In parallel, the wines were analysed by NMR and other analytical techniques.

Conclusions:

- Dornfelder positive drivers of typicality were **colour, fruity and body**, negative drivers were fusel alcohol, vegetative, sour, and rough mouth feel.
- Beaujolais positive drivers of typicality were **fruity aspects like raspberry, vegetative, spicy notes**, negative drivers were empyreumatic, gamy but also sweet and fruity notes like cherry and cassis.

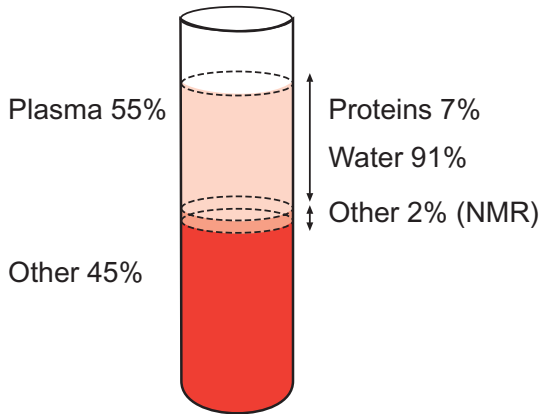
### Sensory profile of 3 Beaujolais wines



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## The material: blood

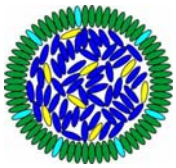
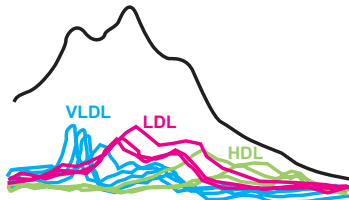


## The detection technique: NMR

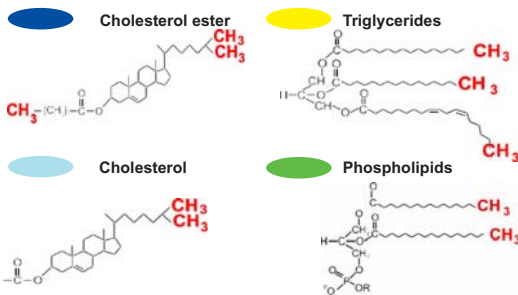
Each lipoprotein subclass broadcasts a unique NMR "sound"



Simultaneous "ringing" of the plasma lipoproteins produces a recorded signal



The chemistry of the lipoproteins



# Diabetes in Humans seen by Nuclear Magnetic Resonance

It is possible to detect up to 40 compounds (metabolites) in human plasma by NMR.

Some of the signals are from the fat entities (cholesterol esters, cholesterol, phospholipids and triglycerides) that make up lipoprotein particles.

There are 3 main classes of lipoproteins classified by size: HDL (high density), LDL (low density) and VLDL (very low density).

HDL-cholesterol is commonly referred to as the "good" cholesterol, whereas LDL carries the "bad" cholesterol associated with heart disease.

It is possible to differentiate the lipoproteins by NMR, hence measuring the good and bad cholesterol.

A study on 18 patients with type 2 diabetes versus controls showed that diabetic patients had on average higher levels of bad cholesterol.

Obesity is a risk factor for the development of type 2 diabetes. Diets high in fat, particularly saturated fats (found in butter and red meats) are associated with increased levels of bad cholesterol in the blood. A healthy diet with five fruit and vegetable portions a day and regular exercise helps prevent high levels.