



Wine profiling by ^1H -NMR Nuclear Magnetic Resonance (Wine Screener 3.1 release)



Wine authenticity

Developed in partnership with the instrument manufacturer Bruker Biospin and with a network of partners supplying authentic samples, the Proton Nuclear Magnetic Resonance Profiling (^1H -NMR) Wine Screener provides a comprehensive authenticity and quality control screening test in only one processing step.

Analysis principle

^1H -NMR analysis generates a spectrum representing the unique fingerprint of the tested wine. The obtained profile allows to obtain a large range of information, which are both:

- Targeted, for quantification of interest compounds
- Untargeted, that might indicate contaminations or reveal anomalies in the assayed sample

Advantages of the method

This screening method :

- Covers a large scope of potential issues
- Detects counterfeiting, mislabelling or quality deviation
- Provides a quick response even when a large number of samples has to be analyzed

Grape variety control

Available models for discrimination of :

- Pinot Noir
- Tempranillo
- Garnacha Tinta
- Syrah
- Merlot Noir
- Cabernet Sauvignon
- Sangiovese
- Nebbiolo
- Montepulciano
- Primitivo
- Dornfelder
- Portugieser Blau
- Zweigeltrebe Blau



- Chardonnay Blanc
- Sauvignon Blanc
- Riesling
- Pinot Blanc/Gris
- Silvaner
- Verdejo
- Mueller Thurgau
- Veltliner
- Moscatel
- Welschriesling



Geographical origins control

Countries	Regions	Appellation
France	Bordeaux, Burgundy, Languedoc, Rhône Valley, Loire Valley	Chablis
Italy	Piemonte, Toscana, Sicilia, Puglia	Valpolicella
Spain	La Rioja, Ribera del Duero	
Germany		
Austria		
Chile		

Quantified parameters

Standard Parameters	<ul style="list-style-type: none"> • Total Alcohol Vol% • Ethanol • Glycerol • Glucose • Fructose • Sucrose • Arabinose • Total sugar • Tarttric acid • Malic acid • Lactic acid • Citric acid • Energy value
Degradation Parameters	<ul style="list-style-type: none"> • Acetic acid • Acetoin • Ethylacetate • Ethyllactate • Formic acid • Fumaric acid • Gluconic acid • Putrescine • Cadaverine • HMF • Furfural
Higher Alcohols/ Fermentation Products	<ul style="list-style-type: none"> • Methanol • 1,3-propanediol • 2,3-butanediol • 2-methyl-propanol • 3-methyl-butanol • Acetaldehyde • Pyruvic acid • Galacturonic acid • Succinic acid

Stabilizing Agents	<ul style="list-style-type: none"> • Benzoic acid • Sorbic acid • Salicylic acid
(Poly-)phenols	<ul style="list-style-type: none"> • Catearic acid • Epicatechin • Gallic acid • Shikimic acid • Trigonelline
Amino Acids	<ul style="list-style-type: none"> • 4-aminobutanoic acid • Alanine • Arginine • Proline

Verification of vintage

Available for white wines from the three previous years at the time of measurement

Analytical reports include

- Quantification of more than 50 compositional characteristic parameters of wines and their comparison with standard values
- Confirmation of grape variety for single variety wine listed
- Confirmation of geographical origin for listed countries and region
- Detection of dilution with water
- Verification of vintage
- An interpretation by our experts including, in case of discrepancy, recommendations for follow-up actions after this screening step

