

FoodScreener

Wine-Profiling Module
 User Manual
 Version 001

Innovation with Integrity

NMR

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Contents

1	Introdu	iction	5			
2	Recom	mended Quality Control Procedures	7			
	2.1	Regular Quality Control of the FoodScreener System	7			
	2.1.1	Sucrose Sample	7			
	2.1.2	MeOD Sample	10			
	2.2	Quantitative Calibration and Validation of the NMR Spectrometer	11			
	2.2.1	ERETIC Calibration	11			
	2.2.2	ERETIC Validation	13			
	2.3	Daily Quality Control using a Wine Sample	16			
3	How to Setup and Run a Single Wine Sample					
	3.1	Accessing a Sample Status, Spectra and Report	21			
4	Steps f	or Re-Measurement, Re-Preparation or Re-Analysis	23			
	4.1	Re-Measurement (overwriting existing experiments)	23			
	4.2	Re-Measurement (adding of experiments)	23			
	4.3	Re-Analysis (without Re-measurement)	24			
5	Contac	.t	25			
	List of	Figures	27			

1 Introduction

With the Wine-Profiling[™] module for the FoodScreener[™] platform, Bruker provides a standardized analysis method for authenticity and quality control of wine samples. Standardized Operating Procedures (SOPs) for sample preparation and measurement guarantee highly reliable results. After the acquisition, data analysis is performed by Bruker's data analysis server applying the most recent version of wine profiling analysis.

This manual includes:

- Recommended procedures for quality control.
- Instructions on how to measure a single wine sample.
- Information on software services and programs.

2 Recommended Quality Control Procedures

It is recommended to validate the overall performance of the Wine-Profiling method on a regular basis. This includes the performance of the NMR-spectrometer (e.g. temperature, shimming, solvent suppression), the preparation and the measurement.

2.1 Regular Quality Control of the FoodScreener System

In this chapter, the regular quality control of the FoodScreener system is described. It is recommended to carry out these validations at least once per week.

2.1.1 Sucrose Sample

The sucrose sample is used to access information about the performance of the water suppression, the resolution, the signal to noise (S/N) ratio, the half width of the DSS signal, (second experiment: SUC_ZGPR_8) and the probe (first experiment: PROF_PROFIL).

For the sucrose measurement, SampleTrack[™] provides a work step template with the analysis experiment Sucrose. For the acquisition, the PROF_PROFIL parameter set and the SUC_ZGPR_8 parameter set will be used. To create an order for the sucrose sample, select in the Sample Orders view: **File** | **New** | **Profiler Setup Form**. This starts the general guide for creating samples:

- Select Enter Samples in Batch Mode.
- · Enter a Project Name, e.g. References.
- · Select Do Not Use Source Container Information.
- Enter a Sample-ID at position 1, e.g. Sucrose-[DATE].
- Select Use super method for all further steps, then Sucrose (NMR-SPECT).

These steps will setup the following Sample Order:

				• • • • • • • • • • • • • • • • • • •
🖮 👹 Sucrose-100016-F00D2-01-08-2016	158172	References	FOODSCREENER2	
🖻 🗁 NMB	158172	References		🛗 Queued(MANUPREP)
🖻 🔋 H2O+D2O Preparation	158172	References	MANUPREP	🖨 Verified
- & PROF_PROFIL	158172	References	FOODSCREENER2	🖌 Verified
- 4 SUC_ZGPR_8	158172	References	FOODSCREENER2	🖌 Verified
•			III	

Figure 2.1: The SampleTrack Sample Order

During the manual preparation step, you have to enter the pre-existing Tube-ID with which the sucrose sample is labeled (this Tube-ID will stay the same for each measurement of this sample).

The first experiment PROF_PROFIL demonstrates whether the probe is okay or not.



If there is no *dip* inside the profile, the probe and z-gradient are okay:

Figure 2.2: Profile Indicating the Probe and Z-Gradient are Okay.



A *dip* in the profile indicates problems, e.g. dust particles in the probe:

Figure 2.3: Profile Indicating There is a Problem with the Probe or Z-Gradient.

In this case:

- Take the probe out of the magnet.
- Turn it around.
- Put it back in.
- · Recheck the profile.

When it is okay you can start with the measurement, if not the probe has to be send to Bruker for repair.

The results of the second experiment are displayed in the title of the spectrum:

Start Acquire Process	Analyse Publish View Mar	age 🕜			
	A Pro <u>c</u> , Spectrum ▼	🔖 Adjust Phase 👻 🧥 Calib. Axis 👻 🎊 P	ck Peaks → ∫ Integrate → Ad	ivanced 🗸	
Image: Second	····································	CONA TR	XAUP HW TS		
1 Sucrose-100016-F0002-02-08-2016 12 1 Cr\Screening	g_FS2\data\References\data\SamTrack\nmr	Arau			
Water suppr.: 30.1/41.6 Hz Resolution: 12%, Sino bést: 188.2	uy reaks integrals sample structure riot ric	[wedo]			
whath at hair height : 0,47 Hz					
					- 8
					- 90
					-
					- 3
					Ğ
					-0
		L/L_			
γ · · · ·	10	5		0	[ppm]
		Amplifier Control Acquisition informati Name/Expno: B-SK-AN-0770 Scan: 11/16 m Residual time: 36s	Dn Fid Flash Lock Sampl	DIE POWCHK Sample Temperature Corr. 301.8 K On O Reg. State: O cres.	BSMS status message Lock Hold Autoshim Cocked C Error Aug 02

Figure 2.4: Results after the Second Experiment

The values which are reached during the installation are used as reference values. Tolerance criteria should be defined (typically 10%-20% of the reference values).

The sucrose sample is also used for 3D shimming. Refer to the TopSpin User and IconNMR User Manuals for detailed information.

C	5
r	٦
L	

Note: Never use a wine sample for 3D shimming.

2.1.2 MeOD Sample

The temperature is validated with the MeOD (99,8% methanol-d4) sample.

For this measurement, SampleTrack provides a work step template with the analysis experiment *Temp300*. For the acquisition, the PROF_WINE_TEMP parameter set is used. To create an order for the methanol-d4 sample, select in the Sample Orders view: **File** | **New** | **Profiler Setup Form**. This starts the general guide for creating samples:

- Select Enter Samples in Batch Mode.
- Enter a Project Name, e.g. References.
- Select Do Not Use Source Container Information.
- Enter a Sample-ID at position 1, e.g. MeOD-[DATE].
- · Select Use super method for all further steps, then Temp300 (NMR-SPECT).

These steps will setup the following Sample Order:

🖮 👹 MeOD-01-08-2016	158173	References	FOODSCREENER2	🖶 Queued
🖻 🗁 NMB	158173	References		🛗 Queued(MANUPREP)
🖻 🖷 🖥 MeOD Preparation	158173	References	MANUPREP	矿 Verified
- PROF_WINE_TEMP	158173	References	FOODSCREENER2	🖌 Verified
(III	

Figure 2.5: MeOD Sample Setup

During the manual preparation step, you have to enter the pre-existing Tube ID, with which the Methanol-d4-Sample is labeled (this Tube ID will stay the same for each measurement of this sample).

The temperature that is checked is the one which is used for the wine screening: 300 K. The temperature should be in the range of \pm 0.1 K. The result is displayed in the title of the spectrum.



Figure 2.6: MeOD Sample Experiment Results

If the result is out of range, the temperature correction has to be changed.

2.2 Quantitative Calibration and Validation of the NMR Spectrometer

For screening, each NMR system has to be calibrated to obtain quantitative results. The intensity (integrals) of the NMR signals is proportional to the respective concentrations and the instrumental factor of this relationship (e.g. integral of 1 mol/L of one proton) has to be obtained.

This calibration has to be done after each significant change/modification of the instrument, including e.g. change of probe or amplifiers.

A validation of this calibration should be done in a reasonable timeframe, e.g. once a day. Bruker provides a Reference-Sample which will be used for both, the calibration and the validation of the system (name: QuantRefA).

The software for the management of ERETIC calibrations is provided by Bruker and is located on the SampleTrack server (Bruker ERETIC Manager, C:\Bruker\ERETICDB\).

2.2.1 ERETIC Calibration

For the calibration of the system, SampleTrack provides a work step template with the analysis experiment Quant Calibration. For the acquisition, the QUANTREF_A parameter set is used. To create an order for the calibration sample, select in the Sample Orders view: **File** | **New** | **Profiler Setup Form**. This starts the general guide for creating samples:

- Select Enter Samples in Batch Mode.
- Enter a Project Name, e.g. References.
- Select Do Not Use Source Container Information.
- Enter a Sample-ID at position 1, e.g. QuantRefA-[DATE].
- · Select Use super method for all further steps, then Quant Calibration (NMR-SPECT).

These steps will setup the following sample order:

📥 👹 QuantRef-100004-01-08-2016	158171	References	FOODSCREENER2	🖶 Queued
🖻 🗁 NMR	158171	References		🛗 Queued(MANUPREP)
🖻 👩 QuantRef_A Preparation	158171	References	MANUPREP	🖨 Verified
- 🐥 QUANTREF_A	158171	References	FOODSCREENER2	🖌 Verified
- QuantRef Calibration	158171	References	REPORT	🚺 Waiting

Figure 2.7: ERETIC Calibration Setup

During the manual preparation step, you have to enter the pre-existing Tube ID with which the QuantRefA sample is labeled (this Tube ID will stay the same for each measurement of this sample).

The analysis is done on the SampleTrack server and will create the calibration file *ERETICdef.xml* and a PDF document which can be used for documentation and SOP (Standard Operation Procedures) processes.



Figure 2.8: Analysis Report

Both files will be copied to the calibration directory, C:\Bruker\ERETICDB\Calibrations, with the corresponding Analysis ID (Sample ID).

Once the operator has acknowledged the protocol for sample calibration, the calibration can be added with the ERETIC Manager for further usage:

- Open the ERETIC Manager from the SampleTrack server.
- Use **Browse** to select the calibration file, than press **Add Calibration** to add the calibration file to the ERETIC Manager.

lect the Spectrometer		\sim
ZC10661K1 👻		BRUKE
te: To create a new instrument, create a subdire Bruker\ERETICDB\ERETIC\BRUKER	ectory with the name in	(X)
TIC Database		
robe Head	Valid From	Valid Until
mm PASEI 1H/D-13C Z-GRD Z824701/0023	01-Sep-2011 09:46:26	28-Nov-2011 15:17:40
Close Definition		
ne a new Calibration		
libration file (ereticdef.xml)		

Figure 2.9: NMR ERETIC Manager for Screening

2.2.2 ERETIC Validation

Once the calibration is done the sample is used to validate the quantification. SampleTrack provides a work step template with the analysis experiment Quant Validation, which is also used for the validation of the system. The setup is the same as for the calibration.

To create an order for the validation sample, select **File** | **New** | **Profiler Setup Form** in the Sample Orders view. This starts the general guide for creating samples:

- Select Enter Samples in Batch Mode.
- Enter a Project Name, e.g. References.
- Select Do Not Use Source Container Information.
- Enter a Sample-ID at position 1, e.g. QuantReference-date.
- Select Use super method for all further steps, then Quant Validation (NMR-SPECT).

These steps will setup the following Sample Order:

🖮 👹 QuantRef-100004-01-08-2016	158171	References	FOODSCREENER2	🖶 Queued
🖻 🗁 NMR	158171	References		🛗 Queued(MANUPREP)
🖻 📋 QuantRef_A Preparation	158171	References	MANUPREP	🕰 Verified
- 🐥 QUANTREF_A	158171	References	F00DSCREENER2	🕰 Verified
🛄 🦺 QuantRef Validation	158171	References	REPORT	🔢 Waiting
•			m	

Figure 2.10: Sample Setup for ERETIC Validation

The analysis is done on the SampleTrack server and will create a PDF document which can be used for documentation.

If both quality indicators (quantitative calibration and maximum internal deviation) are inside the tolerance range, the quantitative calibration is still valid.



If one of the quality indicators is not inside the tolerance range, please first perform a new 3D-shim on the sucrose sample and measure the QuantRef sample again. If it is still outside the tolerance range, add a new calibration.

Bruker <mark>BioSpin</mark> Gm	ьн			BR	UKEF		
• Analys	is Report	t					
Quantifica	tion Reference	- Validatio	on				
Sample ID, Analysis ID Date of Mea Name of Ins Tube Identif ERETIC Del Acquisition/F	Sample ID, ExpNoQuantRef-100004-14-07-2016, 10Analysis IDQuantRef-100004-14-07-2016.100004.10rDate of Measurement14-Jul-2016 07:55:41Name of InstrumentFOODSCREENER2Tube IdentificationQuantRefJuice.19.01.2011.1ERETIC Definition23-Jun-2016 09:41:36						
	Parameter 0	Current Value	Reference Value	Confirm			
	P1 PL1 PL9 RG D1 D8 NS DS	11.72 -8.10 50.52 15.95 4 0.01 16 4	11.82 -8.10 50.45 15.95 4 0.01 16 4	000000000000000000000000000000000000000			
Confirm the f	ollowing parameters	and settings:	·				
	Paramete Tube "Qua Parameter Temperatu ATMA was LOCK on s TOPSHIM PULSECA Phase chee Baseline cl	r / Setting antRefJuice.19.0 set is PROF_JU ire $T = 301.8K$ s done solvent "Juice" I was done L was done cked hecked	Confirm 1.2011.1" 0 ICE_1D 0 0 0 0 0 0 0 0 0 0 0				
Validation Re	sult:						
[Para Quantitative Cali Maximum Internal De	ameter Valu ibration 103.39 eviation 1.29	e Reference Rang % 98% - 102% % max. 4%	ge Status			
Name of ope	rator:	Signature:					

2.3 Daily Quality Control using a Wine Sample

In addition to the standard quality control measurements using Sucrose, MeOD and the QuantRef-sample, it is recommended to monitor the quality of the complete process using a real wine sample. For this, select any wine and create several aliquots of it. On each day that the Wine-Profiling method is used, add one of the aliquots to the measurements.

Select a representative list of results from the quantification and statistical analyses and create a continuous quality control sheet.

3

How to Setup and Run a Single Wine Sample

In order to run the fully automated Wine-Profiling method under SampleTrack, the following software components need to be started:

- TopSpin and IconNMR at the spectrometer PC. IconNMR needs to be in automation with mode SampleTrack.
- The SampleTrack server PC, SampleTrack Communicator and SampleTrack Web service need to be running (symbols on desktop, if running on task-bar).
- For automated retrieving of the reports, the Bruker Analysis Instrument also has to be started (symbol on desktop).

Start the SampleTrack client and setup with a new order.

In the window, click on the empty page icon and select Wine Easy Dialog:



Figure 3.1: Selecting Wine Easy Dialog in SampleTrack

Wine Setup - Easy Diale	og			4	
ample Identification					-
Sample ID (unique) 🔲 A	uto Project ID	Customer	Customer	r Sample ID	(\mathbf{X})
Variety	Origin	Vintage	Ethanol C	Content [vol%]	BRUKER
dditional Information	Origin		Sample Info	Color	+ -
Grane Variety	Guntur				
undefined		_		Packaging	Amount
other:	other:				
Special / Cuvée	Local Origin / F	Region		Sugar Declara	ation Date Taken
undefined	-	-	Comment	undefined	▼ 5/ 4/2012
other:	other:			▲ Additions	
) Other	Add. Info				Â
				-	Ψ.
xcel-Import			Actions		
Location of the Excel File C:\tmp\	Brow	wse Load	Clear Fields	Add & Continue with New Order	Add & Continue with Similar Order
ample Overview & Sample	Track Import				
Nr Status	Sample ID	Project I	D Variety	Origin V	intage Customer
•					•
					Clear List
Workstep-Template	ECT) 💌		Submit	Samples to pleTrack Export to E	Excel Close
	SOAD	http://w7cttoct.appl	ik bruker de:1024/soan/		Version: 1.0.1.26

The Wine Easy Dialog window will open:

Figure 3.2: Wine Setup – Easy Dialog

The minimum information needed for a setup of a sample is a unique sample ID. As an option, unique Sample IDs can be generated by activating the box **Auto**. To enable variety dependent **verification** models, the grape variety must be defined as well (e.g. Riesling).

As an example, the following figures and steps demonstrate how to setup a wine sample with Sample ID *120504005* (the numbers in the brackets [] correspond to the figures):

• Select the Grape Variety (e.g. *Riesling*), Origin (e.g. *Germany - Rheinhessen*), and the Vintage (e.g. 2011) [1].

You can collapse or expand the additional information with the "+" and "-" buttons.

- Add the new sample to the Sample Overview & SampleTrack Import table by selecting Add & Continue with New Order [2].
- Select the new sample from the table with your mouse [3].
- Submit the sample to SampleTrack by selecting Submit Samples to SampleTrack [4].

Wine Setup - Easy Dialog	
Sample Identification	
Sample ID (unique) 📝 Auto Project ID Customer	Customer Sample ID
120504005 Wine Project Company ABC	1234 BRUKER
Variety Origin Vintage	Ethanol Content [vol%]
Riesling Germany, Rheinhessen 2011	12.0
Additional Information Variety Origin Sa © Grape Variety Country	ample Info Color Color Collapse/Expand
Riesling Germany other: other:	Packageng Laboration 11
Special / Cuvée Local Origin / Region Rheinhessen	Sugar Dedaration Date Taken omment dry 5/ 4/2012 T
other:	Additions ditric acid 500 mg/
Other Add. Info	· · · · · · · · · · · · · · · · · · ·
Excel-Import Location of the Excel File C:\tmp\ Browse Load Sample Overview & SampleTrack Import	Clear Fields Add & Continue with New Order Similar Order
Nr. Statue Sample TO Project ID Variaty	Origin Vintage Customer Custor
1 Created 120504004 Wine Project Riesling	Germany, Rheinhessen 2011 Company ABC 1234
3	
<	•
	Clear List
Workstep-Template	
Wine Profiling (NMR-SPECT)	4 SampleTrack Export to Excel Close

Figure 3.3: Wine Setup - Easy Dialog

After this step, the sample is registered in SampleTrack in the Sample Orders Overview **[5]**. You can use filters to select the samples of interest (refer to the SampleTrack manual for further information). The sample order now contains the method NMR, the preparation Wine Preparation and the NMR-Experiments WINE_PREP, WINE_NOESY, WINE_JRES and WINE_QUANT. In addition, there is now a report-work step Wine Analysis which is responsible for the data transfer to Bruker, and finally for retrieving the analysis report.

SampleTRACK Client		and the second second	-				
<u>File Edit View Extras Adn</u>	<u>File Edit View Extras Administration Help</u>						
SampleTrack Overview 5	Filter 🕵 Custom Search	👻 🔽 View 🥵 W	ine Profiling	- 1			
Sample Orders] D 🛩 🛍 🛼 🖤 🖬 🖊 🧉	3) 🕅 🗉 📩 隆					
Manual Preparations	Worksteps	Project	Tube ID	Status			
	🖃 😻 120504005	Wine Project	113552	🏪 Queued			
Approve Sample Orders	🖻 🗁 NMB	Wine Project	113552	🛗 Queued(MANUPREP)			
- Instrument Status	🖻 👩 Wine Preparation	Wine Project	113552	🖌 Verified			
Environment Setup	Sector WINE_PREP	Wine Project	113552	🖌 Verified			
	- & WINE_NOESY	Wine Project	113552	🖌 Verified			
	Sector United Sector - United	Wine Project	113552	🖌 Verified			
	- 🐥 WINE_QUANT	Wine Project	113552	🖌 Verified			
	🚽 🐥 🛛 Wine Analysis	Wine Project	113552	📕 Waiting			

Figure 3.4: SampleTrack Sample Order Overview

The next step is the preparation of the sample.

• In the view Manual Preparations [6] all samples which are waiting for preparation are listed [7]. Select the sample and click **Preparation Guide** [8].

SampleTRACK Client				
<u>File Edit View Extras Adm</u>	inistration <u>H</u> elp			
SampleTrack Overview	D 📽 🛍 🛛 😫 🖬 🎒			
Sample Orders Selected Sample Orders Manual Preparations Instrument Orders Approve Sample Orders Instrument Status	Sample Order Information Sample ID T20504005 Sample Title Riesling, Germany, Rheinhessen Client ID UNKNDWN	Preparation Info Preparation Result Experiments Preparation Preparation Name Wine Preparation		
Instrument Status Instrument Name Last Activi Instrument Name Last Activi Instrument Name Junce I Instrument Name Junce I Instrument Name Junce I Instrument Name Junce I Instrument Name Last Acces Instrument Name I III I I	Tube Information Method Name NMR Journal Number pH Value Plot Title Iube ID [113552	Solution Setup Solvent Setup Solution Method Solvent Setup Solution Duration Solvent Quantity Solution Temperature HD Exchange Kelvin HD Exchange Preparation Guide 8		
Connected to database W7sttest as sampletracl Logged in as BISC Records: 1 master item(s) Auto refresh disabled				

Figure 3.5: Sample Preparation in SampleTrack

You can now start the preparation of the wine sample (refer to the Standard Operating Procedure for wine).

- If available, enter parameters obtained by preparation (e.g. density, added volumes of acid and base) into the form of preparation guide.
- Click Finish to print a barcode for this tube [9].

Bruker Wine	Preparation G	uide	-	×
Preparation for Wine-S	n Guide creening	E	SRU	KER
Sample Informa	tion			
Sample ID testwine			Tube ID 157549	Method MR
rel. Density	ameters / pH-Ad	(leave empty, if n djustment	ot available)
- Take 900ul - Measure re - Adjust the - Report at le	of wine sample, ference pH-valu oH-value of the ast added acid	add 100ul wine bu e of pHRef3. 1-Sar prepared sample v or base volume [ul	iffer nple vith acid or I]	base
Original pH	Final pH	Reference pH		
Acid volume [u	l] Base volume	[ul] Prep volume (i	[]	9
Cancel				Finish

Figure 3.6: Wine Preparation Guide

• After this step, put the barcode on the NMR tube and insert this tube into the sample changer (ensure that the upper end of the barcode-label is 15 mm below the top of the tube).



Figure 3.7: Placing the Barcode on the NMR Tube

3.1 Accessing a Sample Status, Spectra and Report

In SampleTrack, the status of the sample can be checked in the SampleTrack client window, click on **Sample Order** and look at the status field.

The overall order and the NMR method are registered as *Queued*, the wine preparation is listed as *Finished*, and as long as the tube has not been taken into the magnet, the NMR experiments are listed as *Verified*.

The wine analysis has a status *Waiting* until data is available for the sample.

SampleTRACK Client				
<u>File Edit View Extras Adm</u>	ninistration <u>H</u> elp			
SampleTrack Overview	Filter 🕵 Custom Search	👻 🔽 View 🧟 W	ine Profiling	- 1
Sample Orders] D 🛩 🛍 🛼 🖤 🖬 🔺 🧉	3 🖻 🗉 📩 📴		
Manual Preparations	Worksteps	Project	Tube ID	Status
- 🕂 Instrument Orders	🖃 👹 120504005	Wine Project	113552	🛗 Queued(NMR)
Approve Sample Orders	🖻 🗁 NMB	Wine Project	113552	🛗 Queued(INCA400XP)
Instrument Status	🖮 👩 Wine Preparation	Wine Project	113552	Finished
	- & WINE_PREP	Wine Project	113552	🖨 Verified
	- 🐥 WINE_NOESY	Wine Project	113552	🕰 Verified
	- 🕹 WINE_JRES	Wine Project	113552	🖌 Verified
	- 🐥 WINE_QUANT	Wine Project	113552	🖌 Verified
	🚽 🦺 Wine Analysis	Wine Project	113552	🔢 Waiting

Figure 3.8: Sample Status in SampleTrack

Once, the wine screening is completed, all the status items switch to *Finished*. Now, spectra can be displayed by:

- 1. Right-clicking with the mouse on the respective experiment (blue in the figure below).
- 2. Selecting View Spectrum.
- 3. Selecting the viewer, i.e. either AMIX or TopSpin.



Figure 3.9: Accessing the Sample Status, Spectra and Report

The spectrum is then displayed in the respective program.

Using the same steps, a PDF report summarizing the wine analysis results can be displayed:

- Select Wine Analysis under step 1.
- Select the Adobe Reader under step 3.

4 Steps for Re-Measurement, Re-Preparation or Re-Analysis

In the case that a sample needs to be re-measured or re-prepared and re-measured, respective work steps can be used in SampleTrack.

4.1 **Re-Measurement (overwriting existing experiments)**

To re-measure a sample and overwrite the existing data:

- In the Sample Orders select View the corresponding experiments (PROF_WINE_PREP, PROF_WINE_NOESY, PROF_WINE_JRES and PROF_WINE_QUANT).
- Right click on the sample order and select **Reset Experiments**. This will reset the experiments and will set the status to *Created*.
- To verify this process, select the sample order, then **Submit Sample** (e.g. with a right mouse click or **Submit Icon** on the Icon bar).

4.2 Re-Measurement (adding of experiments)

To re-measure sample without overwriting existing data:

- Select the corresponding sample order in the Sample Orders View.
- Right click on the sample order and select Add Work steps.

This will open a dialog for selecting the work step template.

 Select the work steps PROF_WINE_PREP, PROF_WINE_NOESY, PROF_WINE_JRES and PROF_WINE_QUANT and Wine Analysis for the template wine profiling (NMR-SPECT) and commit with OK.

Select Workstep List For Selected Sample Orders			l	x
App/Template Name/Method/Workstep I Description	Instrument Name	Status	WS Pos	
🖃 🔲 Wine Profiling (INCA)				~
Ė ■ NMR				
··· D Wine Preparation	MANUPREP	🖌 Verified	100	
WINE_PREP	INCA400XP	🖌 Verified	200	
WINE_NOESY	INCA400XP	🖌 Verified	300	=
WINE_JRES	INCA400XP	🖌 Verified	400	-
WINE_QUANT	INCA400XP	🖌 Verified	500	
Wine Analysis	REPORT	Waiting	600	-
OK Cancel				

Figure 4.1: Selecting the Work step List for Selected Sample Orders

Now, there will be five additional work steps listed for this sample, whereas you can perform these steps as often as you want.

4.3 Re-Analysis (without Re-measurement)

For a new generation of the PDF report, it is not necessary to re-measure the sample. You just have to reset the wine analysis-work step to re-submit the sample (both are done in the context-menu by performing a right mouse-click on the **Juice Analysis** work step).

5 Contact

Manufacturer

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WEEE DE43181702

NMR Hotlines

Contact our NMR service centers.

Bruker BioSpin NMR provides dedicated hotlines and service centers, so that our specialists can respond as quickly as possible to all your service requests, applications questions, software or technical needs.

Please select the NMR service center or hotline you wish to contact from our list available at:

https://www.bruker.com/service/information-communication/helpdesk.html

Phone: +49 721-5161-6155 E-mail: nmr-support@bruker.com

List of Figures

Figure 2.1:	The SampleTrack Sample Order	7
Figure 2.2:	Profile Indicating the Probe and Z-Gradient are Okay	8
Figure 2.3:	Profile Indicating There is a Problem with the Probe or Z-Gradient.	8
Figure 2.4:	Results after the Second Experiment	9
Figure 2.5:	MeOD Sample Setup	10
Figure 2.6:	MeOD Sample Experiment Results	10
Figure 2.7:	ERETIC Calibration Setup	11
Figure 2.8:	Analysis Report	12
Figure 2.9:	NMR ERETIC Manager for Screening	13
Figure 2.10:	Sample Setup for ERETIC Validation	13
Figure 3.1:	Selecting Wine Easy Dialog in SampleTrack	17
Figure 3.2:	Wine Setup – Easy Dialog	18
Figure 3.3:	Wine Setup - Easy Dialog	19
Figure 3.4:	SampleTrack Sample Order Overview	20
Figure 3.5:	Sample Preparation in SampleTrack	20
Figure 3.6:	Wine Preparation Guide	21
Figure 3.7:	Placing the Barcode on the NMR Tube	21
Figure 3.8:	Sample Status in SampleTrack	22
Figure 3.9:	Accessing the Sample Status, Spectra and Report	22
Figure 4.1:	Selecting the Work step List for Selected Sample Orders	23

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