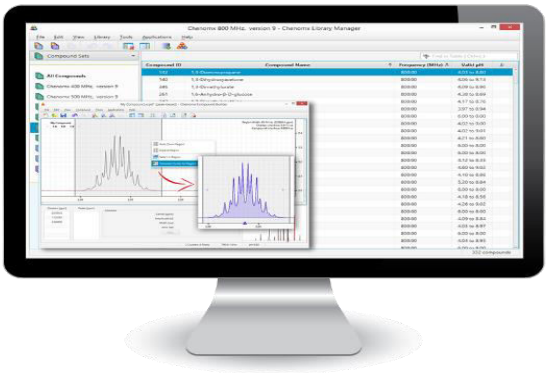
Chenomx specializes in mixture analysis for applications in life sciences such as metabolomics, food/nutrition, and cell culture research.

Chenomx is used by Metabolomics researchers world-wide, Chenomx NMR Analysis Software works with comprehensive Spectral Reference Libraries to both identify and measure concentrations of compounds visible in the NMR spectra, all in one integrated workflow. This patented software offers best-in-class concentration measurement, identification, and advanced de-convolution of spectra.

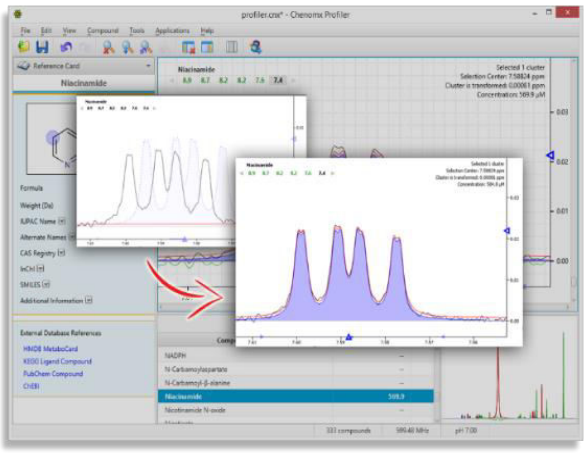
The Chenomx Library



The Chenomx Spectral Reference Libraries are developed from thousands of reference spectra obtained through NMR analysis and used for identification and comparison purposes. The Reference Libraries are available from pH 4 through 9 and NMR field strengths from 400 MHz through 800 MHz.

Additional Reference Libraries have been created from the Human Metabolome Database (HMDB.ca) and are also available for download (Chenomx cannot certify these entries, but they can be used for ID purposes).

'Fitting' The Signatures To The Spectrum



Chenomx NMR Analysis Software functions by 'fitting' the Spectral Reference Library to the appropriate signals within the experimental spectrum. The software automatically adjusts the Reference Library to reflect the sample and acquisition conditions (pH, NMR field strength, spectra line width) and allows the used to adjust peak intensity and location for fine-tuned concentration values.

After the experimental signal has been fit, the spectrum's residual line is exposed. The profiling software will compare more compounds from the Spectral Reference Library to isolate and identify the remaining signals.

Applications

Cell Culture

Metabolite analysis has proven to be an invaluable tool in observing and understanding the metabolic phenotype of cells in culture. In large bioreactor conditions, there are many challenges such as optimizing growth media, growth feeding strategies, and other engineering parameters that are vital not only for the growth of the cells but to produce your products. With Chenomx's Profiling technology, getting reliable and quantitative data is key to overcoming many of these challenges.

Food And Nutrition

From essential amino acids to various sugars and other important components of food such as antioxidants, quantitative measurements of nutritional content of food are key to understanding the differences between food products. Understanding diet related diseases or growth factors, and their correlation to food intake is vital in our strive for better health. Earlier nutritional intervention can possibly prevent the onset of diseases that may require pharmaceutical aid in the future.

Drug Metabolism

As drug development costs skyrocket, it is ever so vital to fully understand your drug targets. Metabolomics can be a critical tool in drug discovery. From early detection of toxicity to mechanisms of action at a cellular level, positively identifying and quantifying metabolites in relevant biofluids can bridge the gap of understanding of your compounds. From preclinical to clinical stages of drug development pipeline, extra quantitative metabolite data will add real value to your drug submissions. Chenomx has years of experience with serum, plasma, urine, CSF, saliva, tissues, and cell-based models.

Biomarker Discovery

Discovering new biomarkers has been a goal for clinical researchers to understand disease mechanisms and aid in the treatment of these diseases. Not only does NMR offer an analytical method to encompass a wide range of molecule types, but coupled with Chenomx technology, this technique becomes even more valuable as identification and quantification of the components in the samples are discovered. Chenomx has years of experience designing experiments, building diagnostic models, and validating them with clinical trial data.

Processor

The 'Processor' module lets you import a wide variety of NMR spectra into Chenomx NMR Suite. It also provides the standard processing tools needed to clean up and calibrate those spectra, so that you can more easily and accurately analyze them using the Profiler module.

Profiler

The 'Profiler' module lets you identify and quantify the contents of your mixture spectrum by comparing it to a compound library with hundreds of reference signatures.

Library Manager

The 'Library Manager' module lets you manage sets of compounds that are available to all other modules in Chenomx NMR Suite. This includes any custom compounds that you've created with Compound Builder, as well as all of the standard Chenomx Reference Compounds.

Spin Simulator

The 'Spin Simulator' module allows you to simulate an entire compound signature based on a few theoretical details. Just set a magnet frequency, then start solving coupling relationships and measuring j-value constants while your simulation updates itself in real time!

MODULE	Chenomx NMR Suite STANDARD	Chenomx NMR Suite PRO
Processor	INCLUDED	INCLUDED
Profiler	INCLUDED	INCLUDED
Spin Simulator	INCLUDED	INCLUDED
Compound Builder		INCLUDED
COMPLETE Autofit		INCLUDED
Batching		INCLUDED
Binning		INCLUDED
Complete 338 Compound high-frequency (400MHz, 500MHz, 600MHz, 700MHz, 800MHz) Spectral Reference Library	INCLUDED	INCLUDED
Complete 338 Compound low-frequency (60MHz, 80MHz, 90MHz, 100MHz, 125MHz) Spectral Reference Library	INCLUDED	INCLUDED