



Nightingale Cord Blood Biomarker Analysis Service

Explore the underlying
mechanisms of pregnancy
and early life course health.

Powerful platform enabled by NMR

Unique combination of biomarkers

Biomarkers include clinically validated routine markers, emerging biomarkers with strong medical relevance and promising, new biomarkers.

Robust and highly reproducible results

Our fully automated analysis process is constantly monitored under a certified quality management system. And the NMR technology allows high reproducibility which ensures consistent and reliable results across all sample sets.

Fast, cost-efficient and scalable technology

We use a high-throughput NMR technology which ensures efficient analysis for sample sets of all sizes without batch effects.

Accurate and fully quantified metabolic data

Not only our analysis, but even our quantification process of the NMR spectral data is fully

automated, which provides precise and accurate metabolite results in absolute concentration units.

Comprehensive overview of an individual's health

Biomarkers in our panel provide a physiologically meaningful picture of the overall health making it possible to explore novel connections between metabolites and an individual's health status.

Certified quality management system

Nightingale Health operates under a certified quality management system in accordance with EN ISO 13485:2016 and SFS-EN ISO/IEC 17025.

APPLICATION EXAMPLES

Early risk detection and prognostics of type 1 and type 2 diabetes as well as diabetic complications, especially for diabetic kidney disease

Molecular understanding of cardiometabolic risk factors such as adiposity and body fat distribution, and what role they play in the disease etiology

Genetic regulation of urine metabolism and further implications to disease etiology

Exploring metabolic effects of an individual's diet and lifestyle on health

TECH SPECIFICATIONS

Technology	¹ H NMR Spectroscopy, Nightingale Health's proprietary analysis
Specimen type	Human umbilical cord serum and plasma
Sample volume	100 µL
Number of biomarkers	110
Result units	Absolute biomarker quantification (mmol/l or g/l)
Sample storage	Long-term storage -70°C or below

List of all biomarkers

Cholesterol

Total cholesterol	mmol/l
Total cholesterol minus HDL-C	mmol/l
Remnant cholesterol (non-HDL, non-LDL -cholesterol)	mmol/l
VLDL cholesterol	mmol/l
Clinical LDL cholesterol	mmol/l
LDL cholesterol	mmol/l
HDL cholesterol	mmol/l

Triglycerides

Total triglycerides	mmol/l
Triglycerides in VLDL	mmol/l
Triglycerides in LDL	mmol/l
Triglycerides in HDL	mmol/l

Phospholipids

Total phospholipids in lipoprotein particles	mmol/l
Phospholipids in VLDL	mmol/l
Phospholipids in LDL	mmol/l
Phospholipids in HDL	mmol/l

Cholesteryl esters

Total esterified cholesterol	mmol/l
Cholesteryl esters in VLDL	mmol/l
Cholesteryl esters in LDL	mmol/l
Cholesteryl esters in HDL	mmol/l

Free cholesterol

Total free cholesterol	mmol/l
Free cholesterol in VLDL	mmol/l
Free cholesterol in LDL	mmol/l
Free cholesterol in HDL	mmol/l

Total lipids

Total lipids in lipoprotein particles	mmol/l
Total lipids in VLDL	mmol/l
Total lipids in LDL	mmol/l
Total lipids in HDL	mmol/l

Lipoprotein particle concentrations

Total concentration of lipoprotein particles	mmol/l
Concentration of VLDL particles	mmol/l
Concentration of LDL particles	mmol/l
Concentration of HDL particles	mmol/l

Lipoprotein particle sizes

Average diameter for VLDL particles	nm
Average diameter for LDL particles	nm
Average diameter for HDL particles	nm

Other lipids

Phosphoglycerides	mmol/l
Ratio of triglycerides to phosphoglycerides	ratio
Total cholines	mmol/l
Phosphatidylcholines	mmol/l
Sphingomyelins	mmol/l

Apolipoproteins

Apolipoprotein B	g/l
Apolipoprotein A1	g/l
Ratio of apolipoprotein B to apolipoprotein A1	ratio

Fatty acids

Total fatty acids	mmol/l
Degree of unsaturation	degree
Omega-3 fatty acids	mmol/l
Omega-6 fatty acids	mmol/l
Polyunsaturated fatty acids	mmol/l
Monounsaturated fatty acids	mmol/l
Saturated fatty acids	mmol/l
Linoleic acid	mmol/l
Docosahexaenoic acid	mmol/l

Fatty acid ratios

Ratio of omega-3 fatty acids to total fatty acids	%
Ratio of omega-6 fatty acids to total fatty acids	%
Ratio of polyunsaturated fatty acids to total fatty acids	%
Ratio of monounsaturated fatty acids to total fatty acids	%
Ratio of saturated fatty acids to total fatty acids	%
Ratio of linoleic acid to total fatty acids	%
Ratio of docosahexaenoic acid to total fatty acids	%
Ratio of polyunsaturated fatty acids to monounsaturated fatty acids	ratio
Ratio of omega-6 fatty acids to omega-3 fatty acids	ratio

Amino acids

Alanine	mmol/l
Glutamine	mmol/l
Glycine	mmol/l
Histidine	mmol/l

Branched-chain amino acids

Total concentration of branched-chain amino acids (leucine + isoleucine + valine)	mmol/l
Isoleucine	mmol/l
Leucine	mmol/l
Valine	mmol/l

Aromatic amino acids

Phenylalanine	mmol/l
Tyrosine	mmol/l

Glycolysis related metabolites

Glucose	mmol/l
Lactate	mmol/l
Pyruvate	mmol/l
Citrate **	mmol/l
Glycerol *	mmol/l

Ketone bodies

3-Hydroxybutyrate	mmol/l
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Acetate	mmol/l
Acetoacetate	mmol/l
Acetone	mmol/l

Fluid balance

Creatinine	mmol/l
Albumin	signal area

Inflammation

Glycoprotein acetyls (GlycA)	mmol/l
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Lipoprotein subclasses

Chylomicrons and extremely large VLDL (particle diameters from 75 nm upwards)

Concentration of chylomicrons and extremely large VLDL particles	mmol/l
Total lipids in chylomicrons and extremely large VLDL	mmol/l

Very large VLDL (average size 64 nm)

Concentration of very large VLDL particles	mmol/l
Total lipids in very large VLDL	mmol/l

Large VLDL (average size 53.6 nm)

Concentration of large VLDL particles	mmol/l
Total lipids in large VLDL	mmol/l

Medium VLDL (average size 44.5 nm)

Concentration of medium VLDL particles	mmol/l
Total lipids in medium VLDL	mmol/l

Small VLDL (average size 36.8 nm)

Concentration of small VLDL particles	mmol/l
Total lipids in small VLDL	mmol/l

Very small VLDL (average size 31.3 nm)

Concentration of very small VLDL particles	mmol/l
Total lipids in very small VLDL	mmol/l

IDL (average size 28.6 nm)

Concentration of IDL particles	mmol/l
Total lipids in IDL	mmol/l

Large LDL (average size 25.5 nm)

Concentration of large LDL particles	mmol/l
Total lipids in large LDL	mmol/l

Medium LDL (average size 23 nm)

Concentration of medium LDL particles	mmol/l
Total lipids in medium LDL	mmol/l

Small LDL (average size 18.7 nm)

Concentration of small LDL particles	mmol/l
Total lipids in small LDL	mmol/l

Very large HDL (average size 14.3 nm)

Concentration of very large HDL particles	mmol/l
Total lipids in very large HDL	mmol/l

Large HDL (average size 12.1 nm)

Concentration of large HDL particles	mmol/l
Total lipids in very large HDL	mmol/l

Medium HDL (average size 10.9 nm)

Concentration of medium HDL particles	mmol/l
Total lipids in medium HDL	mmol/l

Small HDL (average size of 8.7 nm)

Concentration of small HDL particle	mmol/l
Total lipids in small HDL	mmol/l

SEE ALSO

Nightingale Blood Analysis Service
Nightingale CSF Biomarker Analysis Service
Nightingale Urine Biomarker Analysis Service