

Who are we?

Company: Biosfer Teslab is an innovative SME biotech company created as a spin-off of Rovira i Virgili University (URV) and Pere Virgili Health Research Institute (IISPV), established in 2013 (Reus, Spain)

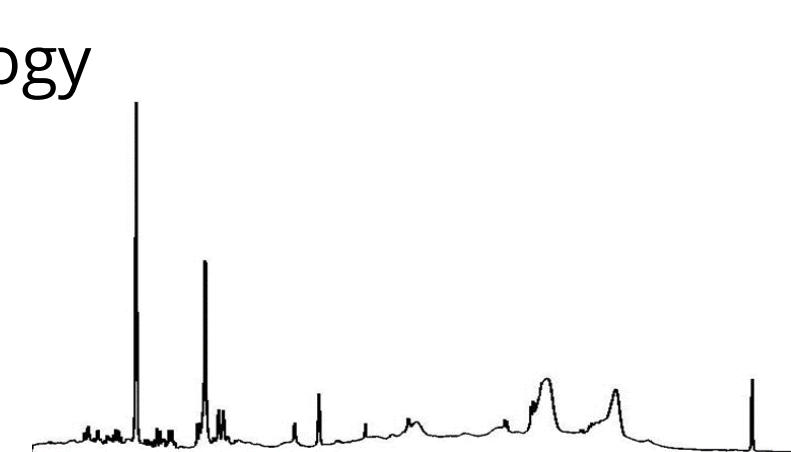
Mission: To provide services for the analysis of biological fluids and tissues by Nuclear Magnetic Resonance (NMR) and to develop medical software, to help and facilitate health professionals and the scientific community to study, diagnose and treat metabolic alterations in order to advance knowledge and improve the health of people.

Vision: To be a reference biotechnology company, well connected with the main actors that form the international biomedical research network and to be committed to innovation and continuous improvement.

Values: Transparency, Collaboration, Professionalism, Territoriality and Multidisciplinarity.

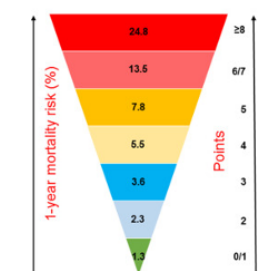
NMR Metabolomics

- High throughput screening technology
- Competitive
- Quantitative
- Robust & scalable
- Automated
- Fast
- Discovery / targeted approach simultaneously



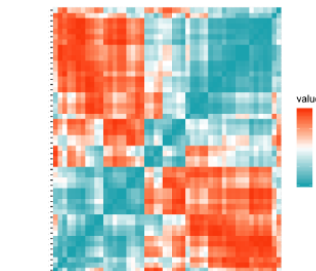
Metabolomics Applications

Regressions



Risk Stratification

Clustering



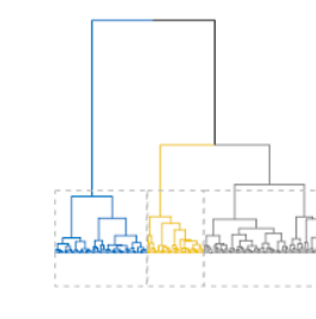
Pattern recognition

Classification models

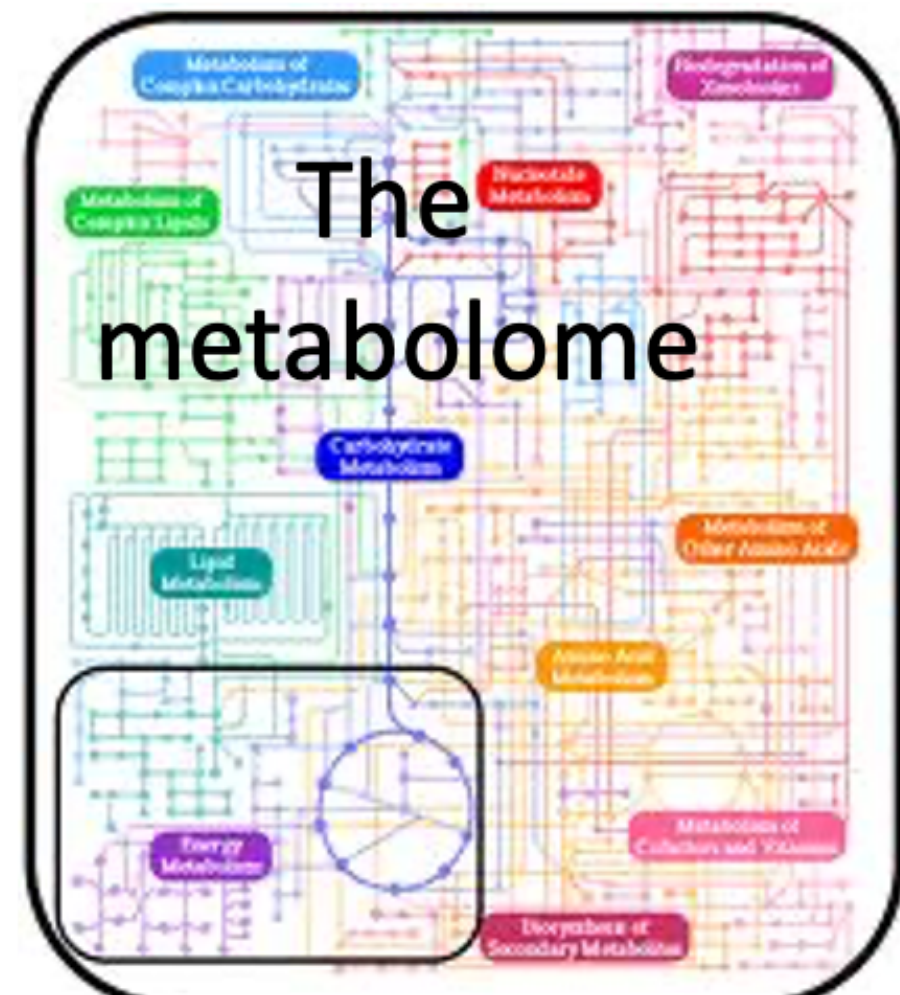


Diagnostic test

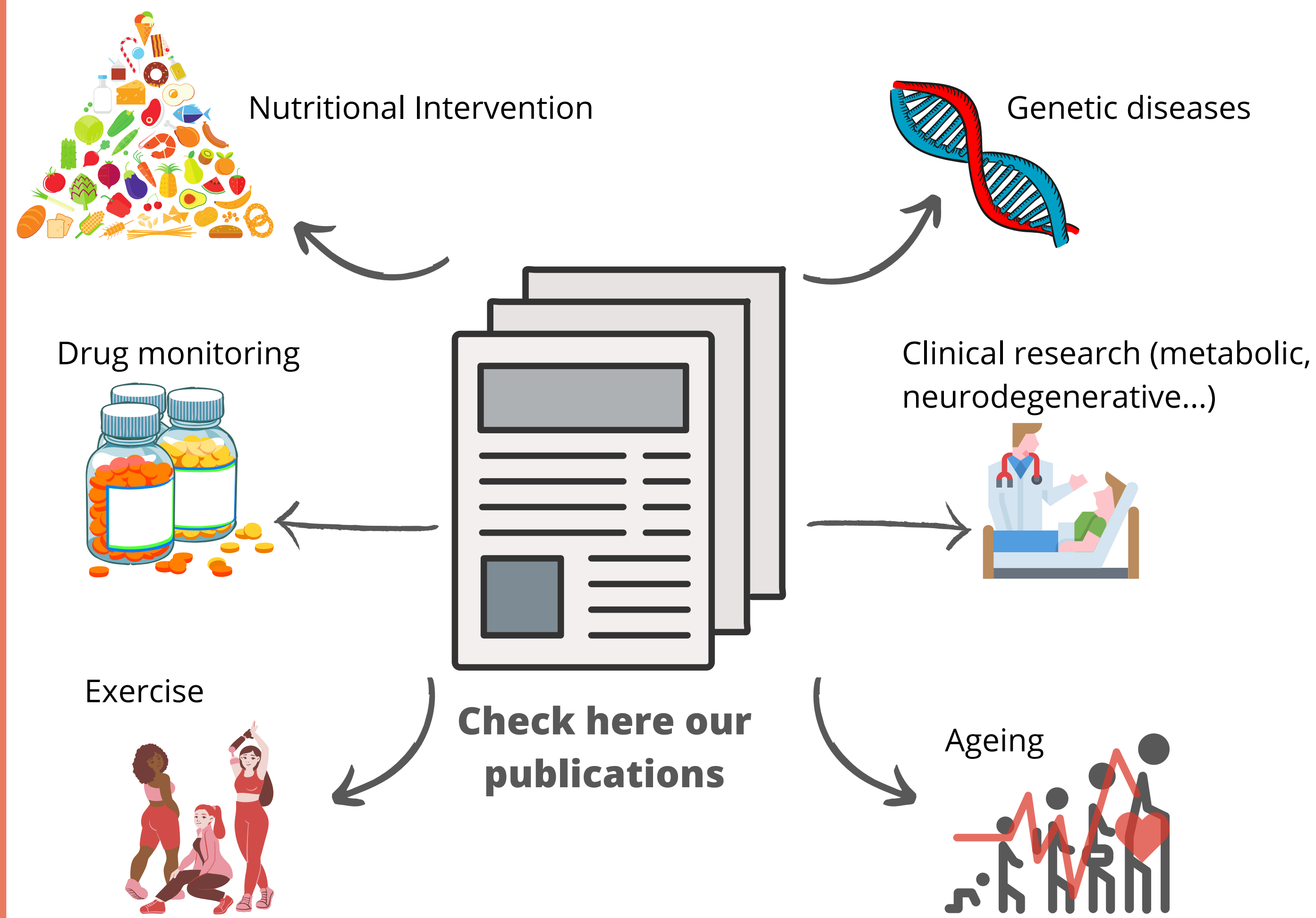
Predictive models



Response & prognosis test

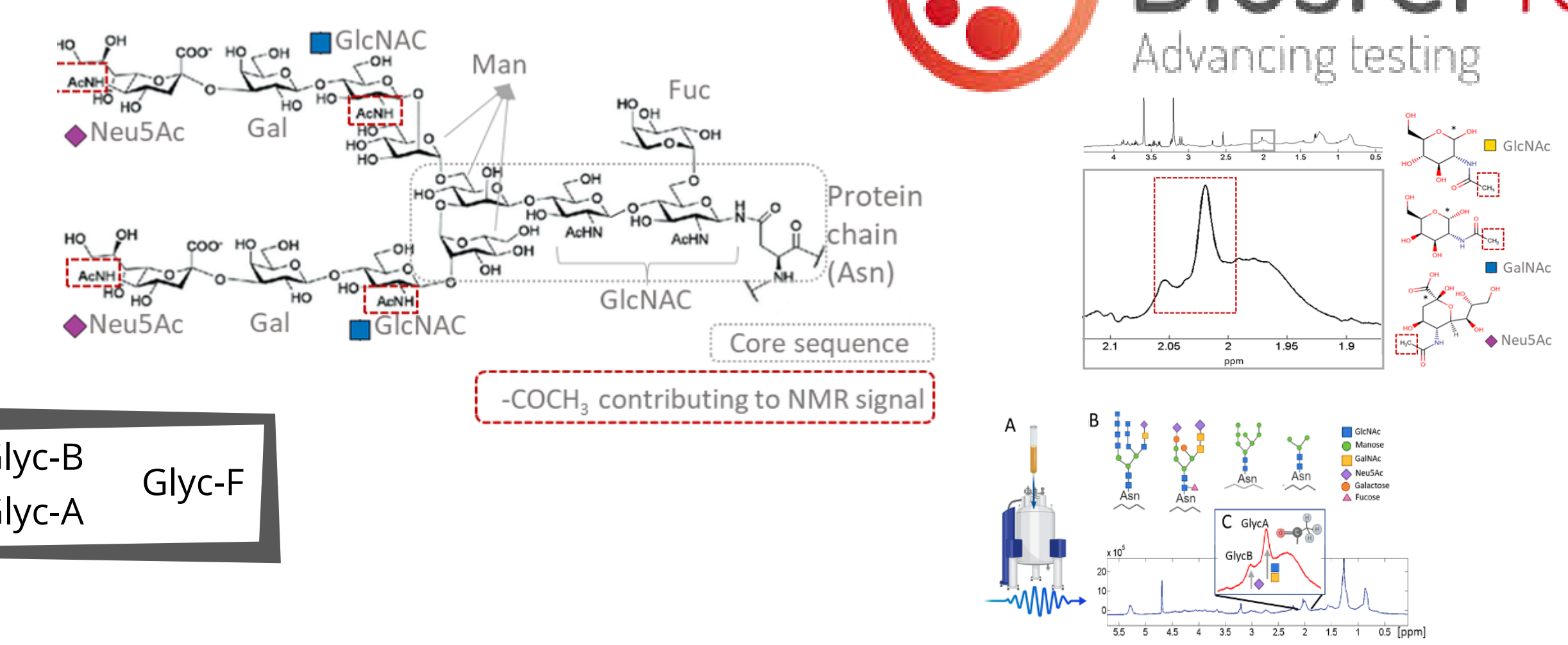
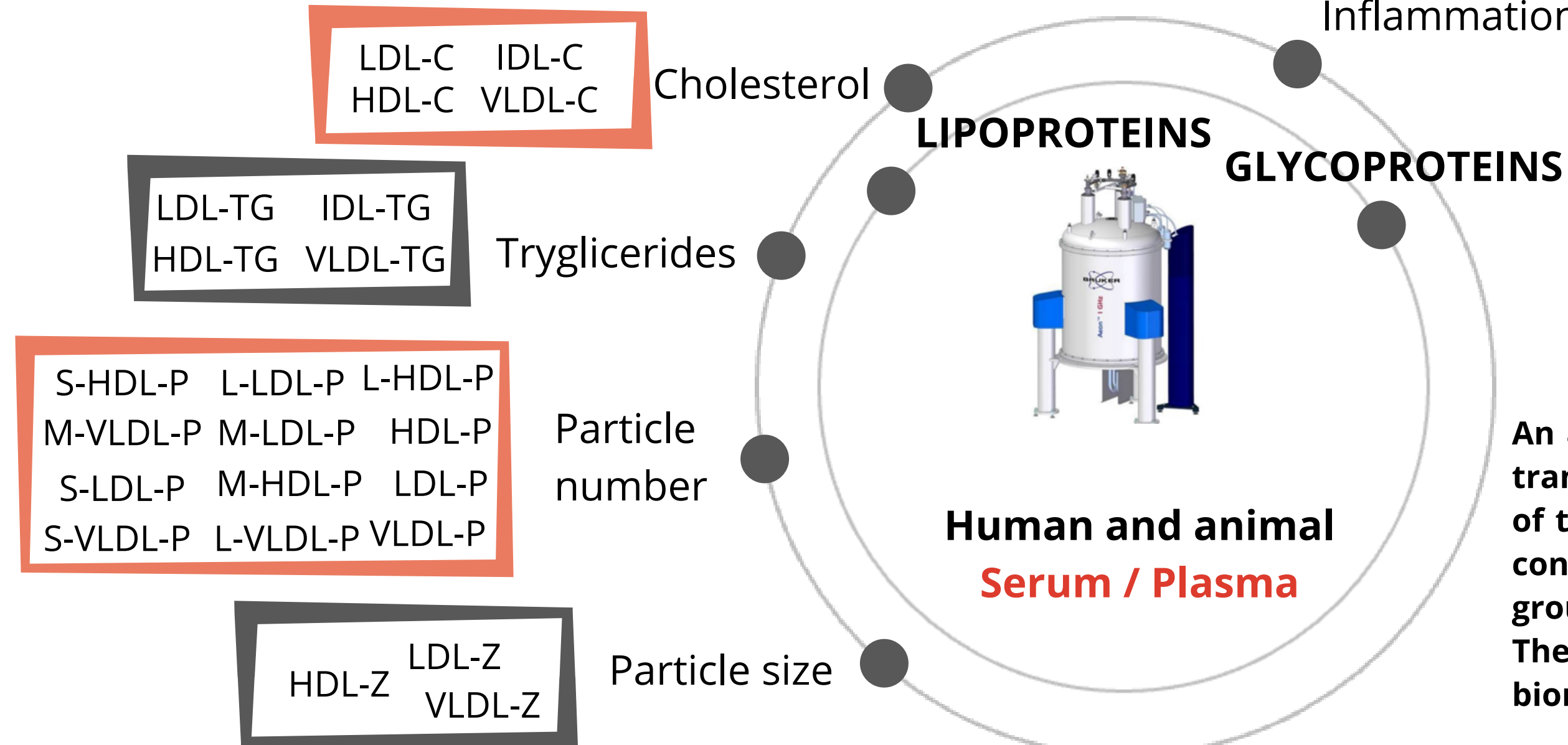


Global Bio-Screening Tool

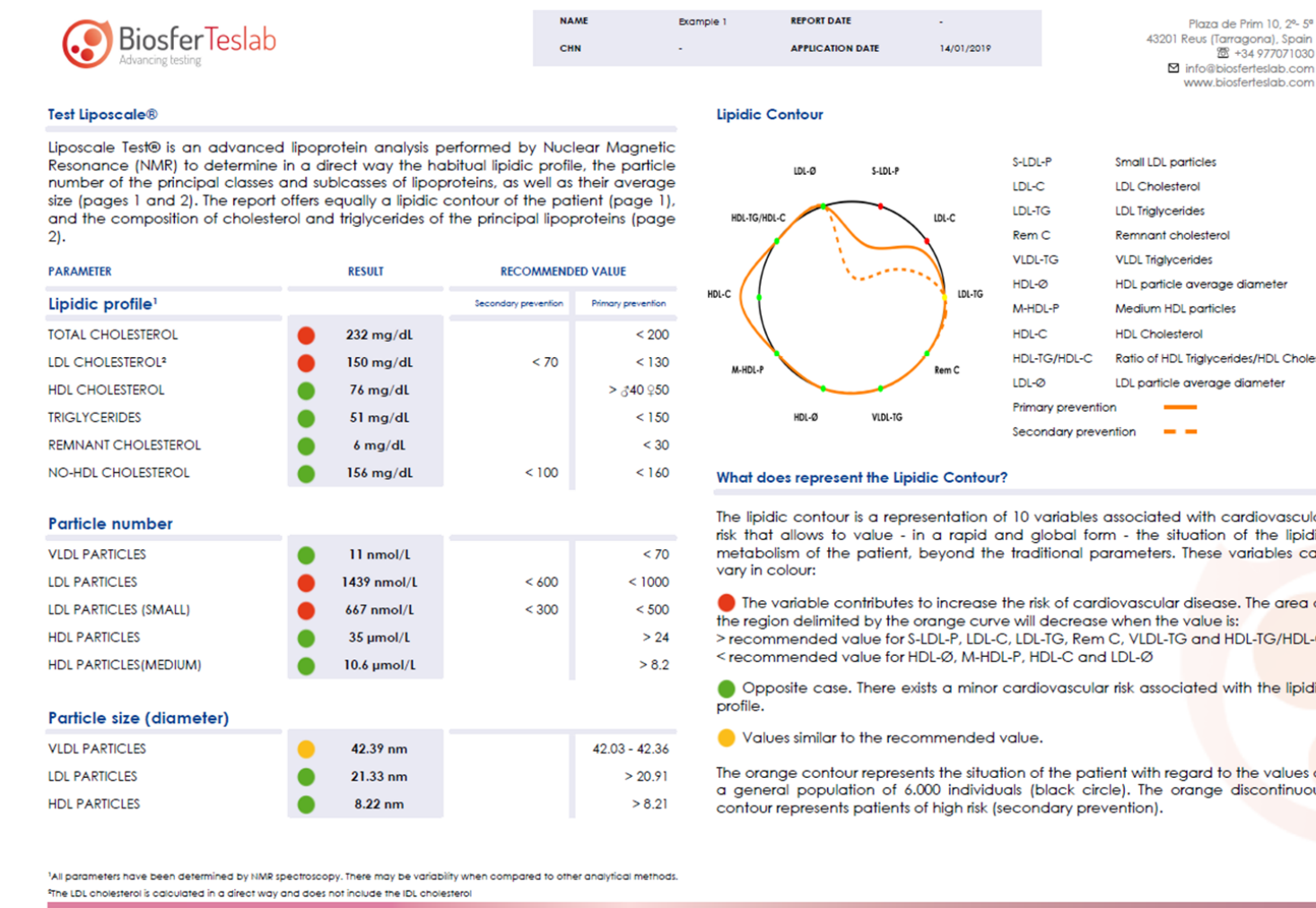


What do we offer?

Characterisation of macromolecular complexes



An altered protein glycosylation pattern has been described as a significant event that occurs during the transition from healthy to diseased tissue. From the NMR spectra, we characterize a general measurement of the circulating glycoproteins by quantifying the area of its respective NMR signals, proportional to the concentration of the acetyl groups of N-acetylglucosamine and N-acetyl galactosamine (GlycA) and acetyl groups of N-acetylneuraminic acid (GlycB) bond to plasmatic proteins. These composite NMR derived glycoprotein profiling has been recently established as a novel inflammatory biomarker, independently associated with CVD, low degree inflammatory processes and death.

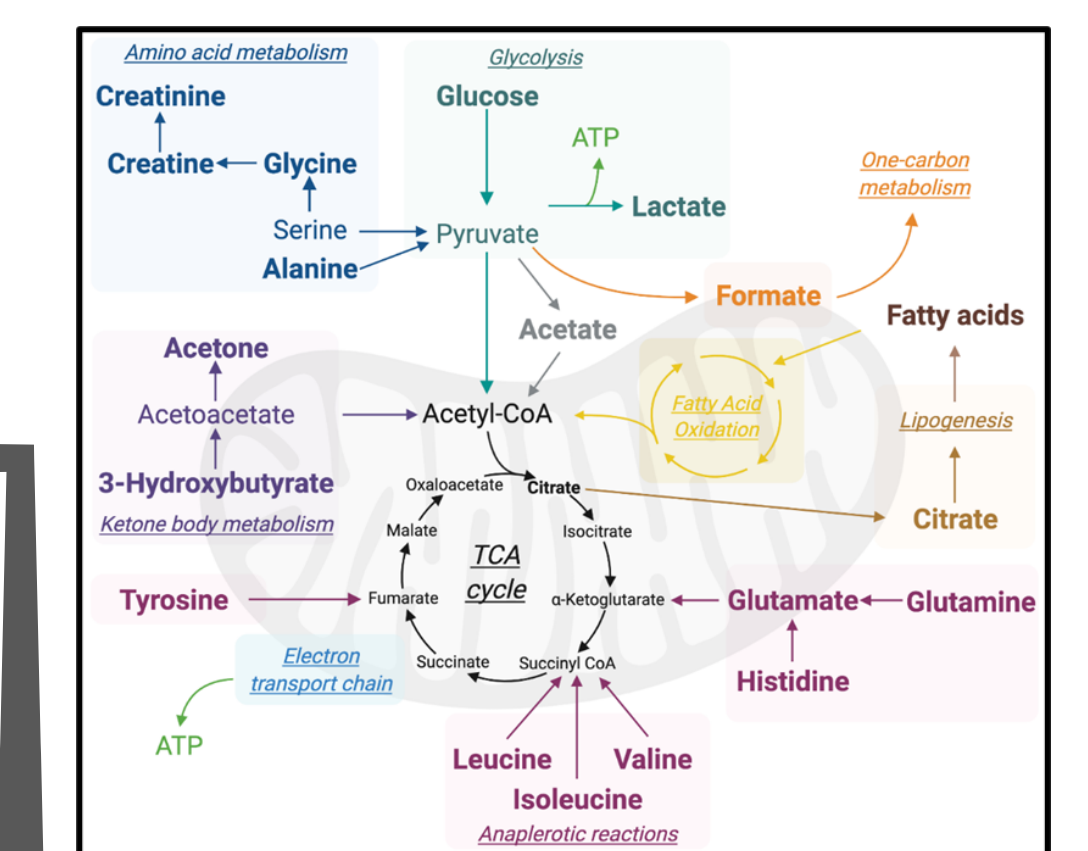
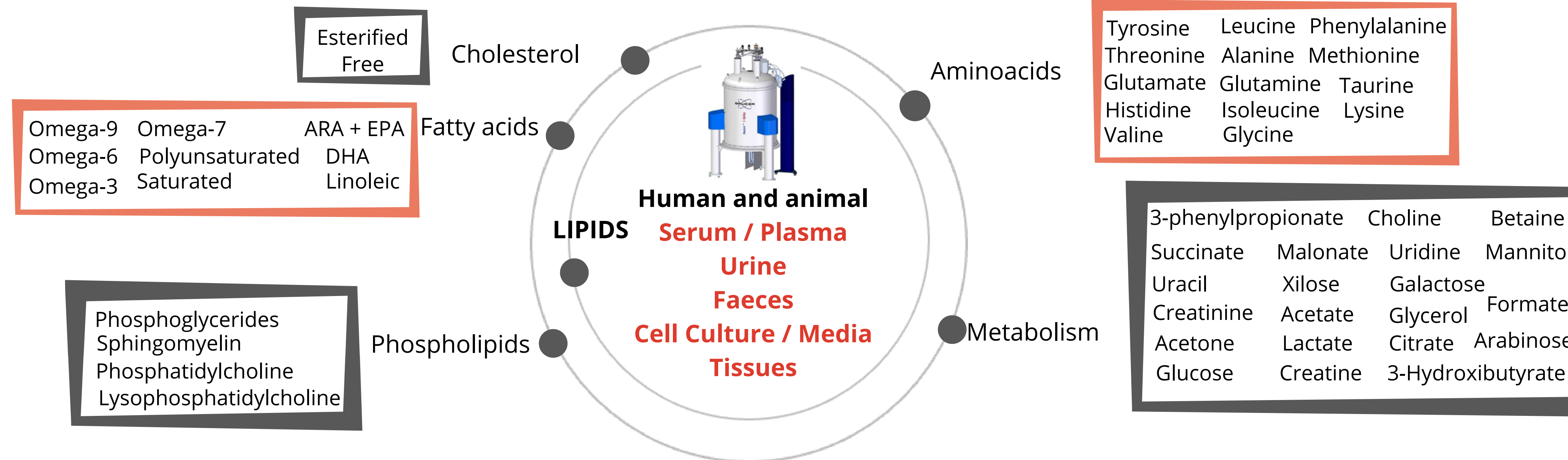


Clinical Study Topic	QC	Main findings
Tumors and cancer	CSCC, BC, LC, CRC	Increased circulating N-acetyl glycoproteins levels and increased GlcNAc-branching of N-glycans.
Obesity		Association between GlycA and the leptin/adiponectin ratio Correlation between GlycB and TG and lipids Correlation GlycA and branched chain amino acids Strong relationship of CRP, GlycA, and GlycB and insulin resistance
Diabetes Mellitus		α 1-acid glycoprotein as a predictor of future glycaemia Associations of GlycA with higher HbA1c and CRP
Healthy individuals		GlycA had a more robust correlation with CRP, plasma glucose, and measures of adiposity and insulin resistance than GlycB Increased levels of glycosylated acute-phase proteins (GlycA) associated with MetS GlycA/ α 1-acid glycoproteins or baseline circulating glycoprotein N-acetyl methyl groups are associated with CVD and longitudinal risk of all-cause mortality.
High-risk individuals		GlycA and hsCRP were statistically significant for the outcome of death GlycA, and small and medium-size HDL particles proved to be independent predictors of cardiac death.
Life expectancy		Higher GlycA levels had lower life expectancy. Positive association between α 1-antitrypsin and increased risk of liver diseases, heart failure, and COPD, and significant association between α 1-acid glycoprotein and heart failure and chronic lower respiratory diseases
All-cause mortality		GlycA related to increased risk of alcoholic liver disease, chronic renal failure, glomerular diseases, COPD, inflammatory polyarthropathies, and hypertension
HIV-infection		Higher GlycA levels in HIV-infected patients

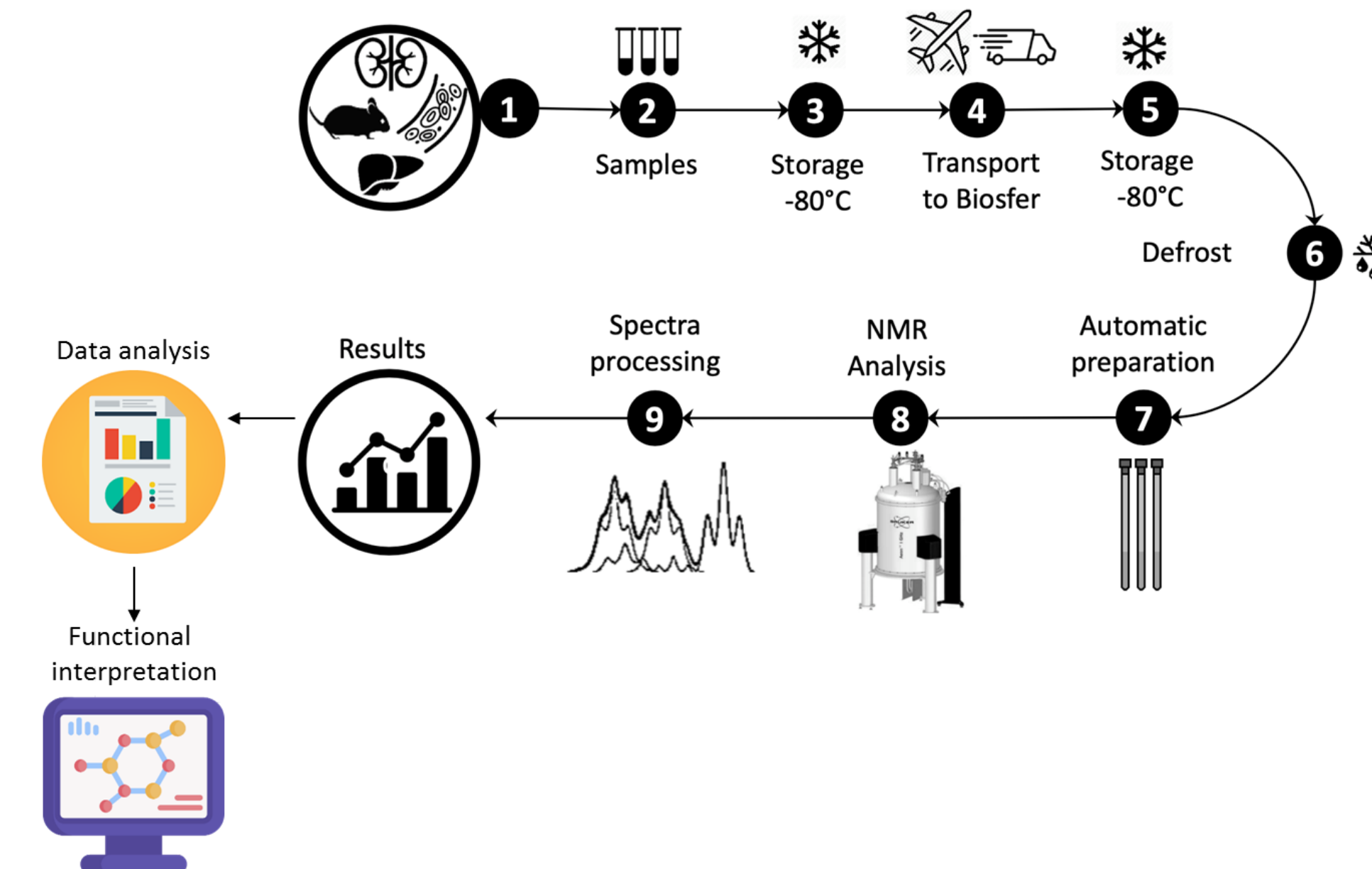
Chronic inflammatory diseases	RA	SLE	Psoriasis	IBD	CKD
	GlycA is higher in RA patients than in controls.	GlycA levels increased with each unit increase in SELDAP.	GlycA has been shown to be a good marker of systemic inflammation in lupus-nephritis.	GlycA is increased in psoriasis.	GlycA was independently associated with albuminuria and inversely related to eGFR.
Cognitive function and psychological health	AD				
Rare vascular diseases	Takayasu arteritis				
Pregnancy					

Check the review: Human Serum/Plasma Glycoprotein Analysis by 1 H-NMR, an Emerging Method of Inflammatory Assessment, for more information

Characterisation of Lipid species and Aqueous metabolome:



Our workflow



Application fields

- Biomarker discovery
- Epidemiological studies
- Pharmacological studies
- Disease prediction
- Disease prevention
- Disease diagnosis
- Cardiovascular risk assessment

I+D Experience and funding entities

- More than 80 publications
- widely fund raising experience
- Participation in more than 100 projects
- More than 30.000 samples analysed.

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Partners & Key Collaborators

