

# BILE ACID PROFILING IN BIOLOGICAL SAMPLES

## BILE ACIDS

Bile acids (BA) are a group of chemically-related cholesterol-derived acids recognized as regulatory molecules in cells in the liver and gastrointestinal tract, with profiles that can change in different physio-pathological situations.

## BILE ACIDS PROFILING

Physiological concentrations of circulating BA in healthy subjects are low. Various conditions, including hepatobiliary and intestinal diseases or drug-induced liver injury can alter homeostasis and lead to increased BAs levels.

## UPLC-MS/MS ANALYSIS

An UPLC-MS/MS method able to detect 31 conjugated and non-conjugated BA in biological matrices (serum, plasma, cells and tissue) from human, rats and mouse has been developed and fully validated with LoQ ranging between 2,5-20 nM (1).

*Determination of BA profiling is a valuable tool when searching for biomarkers and understanding liver or other tissue damage mechanisms*

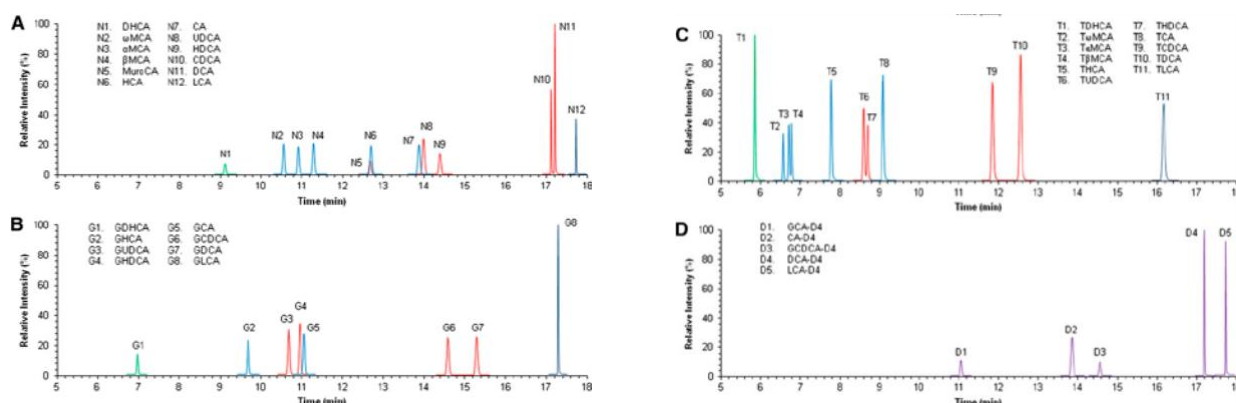


Figure. MRM chromatograms obtained from a standard mixed solution containing BA metabolites (1)

	Non-conjugated	Glycine-conjugated	Taurine-conjugated
<b>3OH-CA</b>	Cholic acid	Glycocholic acid	Taurocholic acid
	$\omega$ -Muricholic acid		Tauro- $\alpha$ -muricholic acid
	$\alpha$ -Muricholic acid		Tauro- $\alpha$ -muricholic acid
	$\beta$ -Muricholic acid		Tauro- $\beta$ -muricholic acid
	Hyocholic acid	Glycohyocholic acid	Taurohyocholic acid
<b>2OH-CA</b>	Chenodeoxycholic acid	Glycochenodeoxycholic acid	Taurochenodeoxycholic acid
	Deoxycholic acid	Glycodeoxycholic acid	Taurodeoxycholic acid
	Ursodeoxycholic acid	Glycoursodeoxycholic acid	Tauroursodeoxycholic acid
	Hyodeoxycholic acid	Glycohyodeoxycholic acid	Taurohyodeoxycholic acid
	Murocholic acid		
<b>1 OH-CA</b>	Lithocholic acid	Glycolithocholic acid	Tauroolithocholic acid
<b>3 O-CA</b>	Dehydrocholic acid	Glycodehydrocholic acid	Taurodehydrocholic acid

## REFERENCES

- (1) J.C. García-Cañaveras, M.T. Donato, J.V. Castell and A. Lahoz (2012). Journal Lipid Research, 53:2231-2241