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Quantification of bacterial lipids produced by the gut microbiota: role in visceral pain

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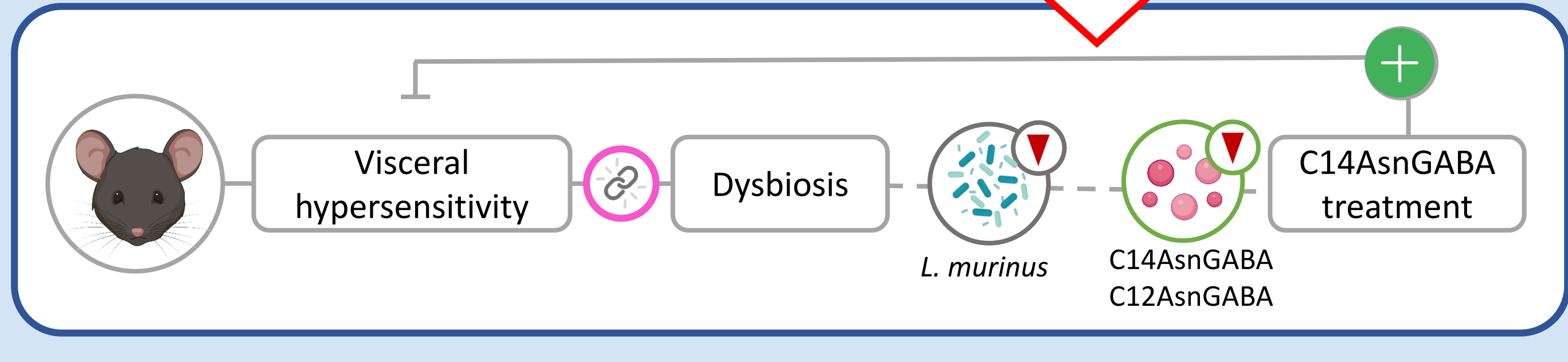
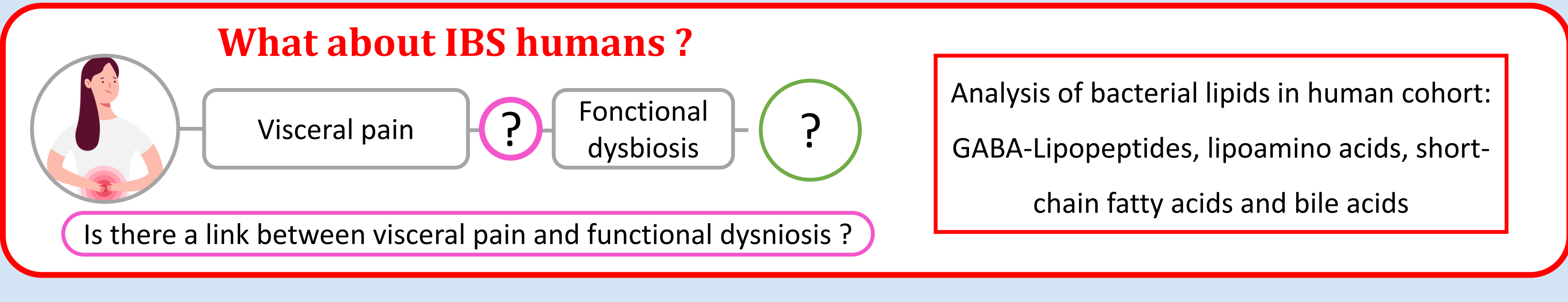
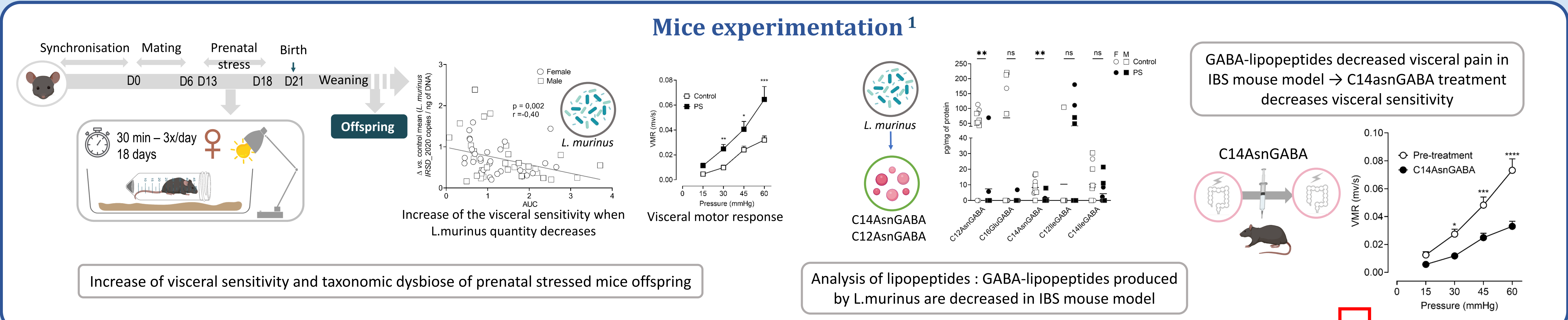
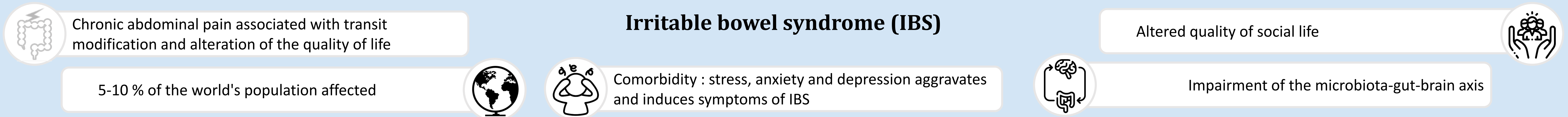
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Analysis workflow

Lipidic extraction in feces (SPE or dilution)

Lipoaminoacids and GABA-Lipopeptides analysis - UHPLC-MS/MS

Column: C18 CSH, Waters
Solvent A: H₂O, 0.1% formic acid
Solvent B: ACN, 0.1% formic acid
Flow rate: 100 µL/min

Nexera X2 - LCMS 8060, Shimadzu

Bile acids analysis - UHPLC-MS/MS

Column: BEH C18, Waters
Solvent A: H₂O, 0.1% formic acid
Solvent B: ACN, 0.1% formic acid
Flow rate: 500 µL/min

1290 Infinity - G6460 QqQ, Agilent

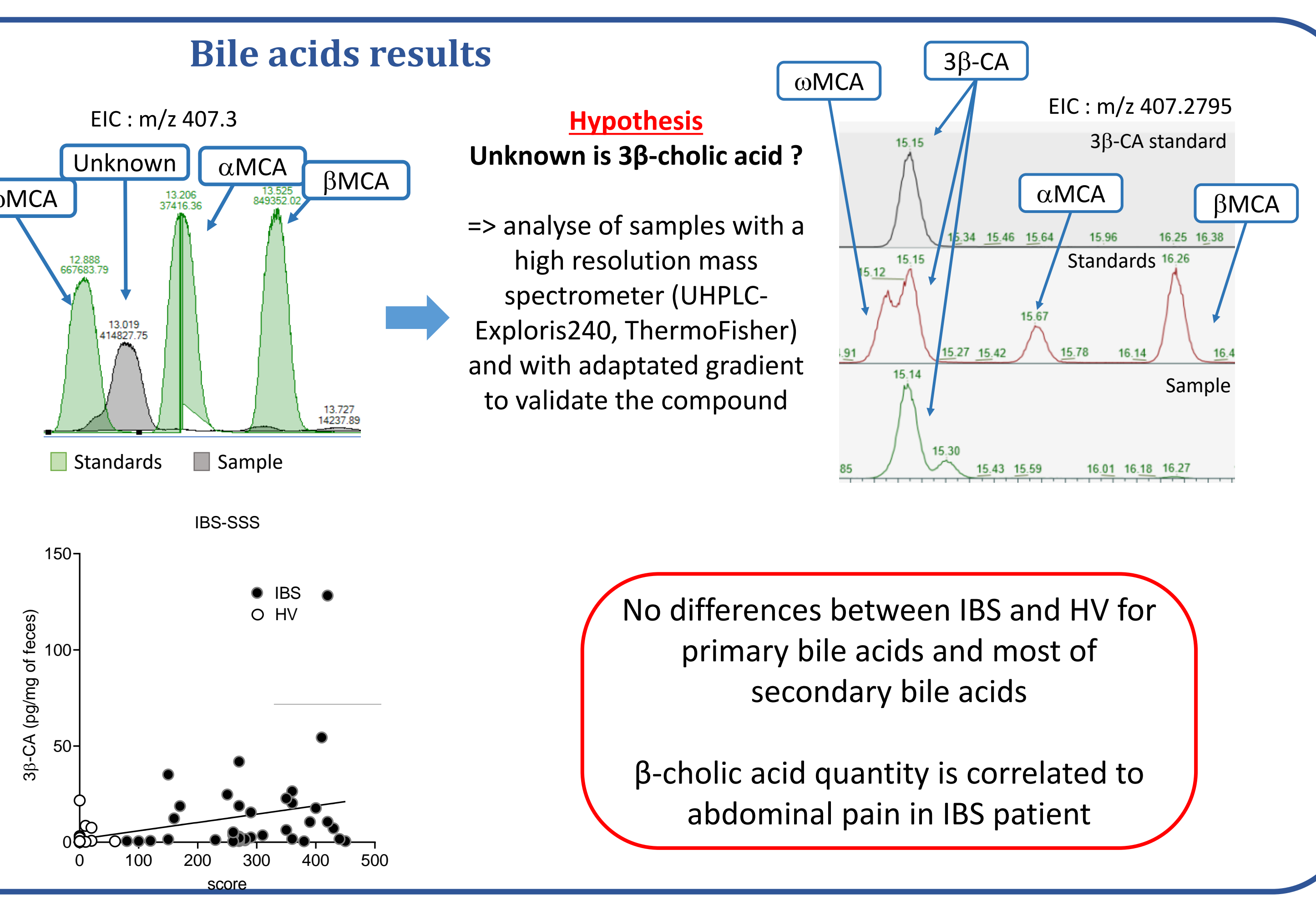
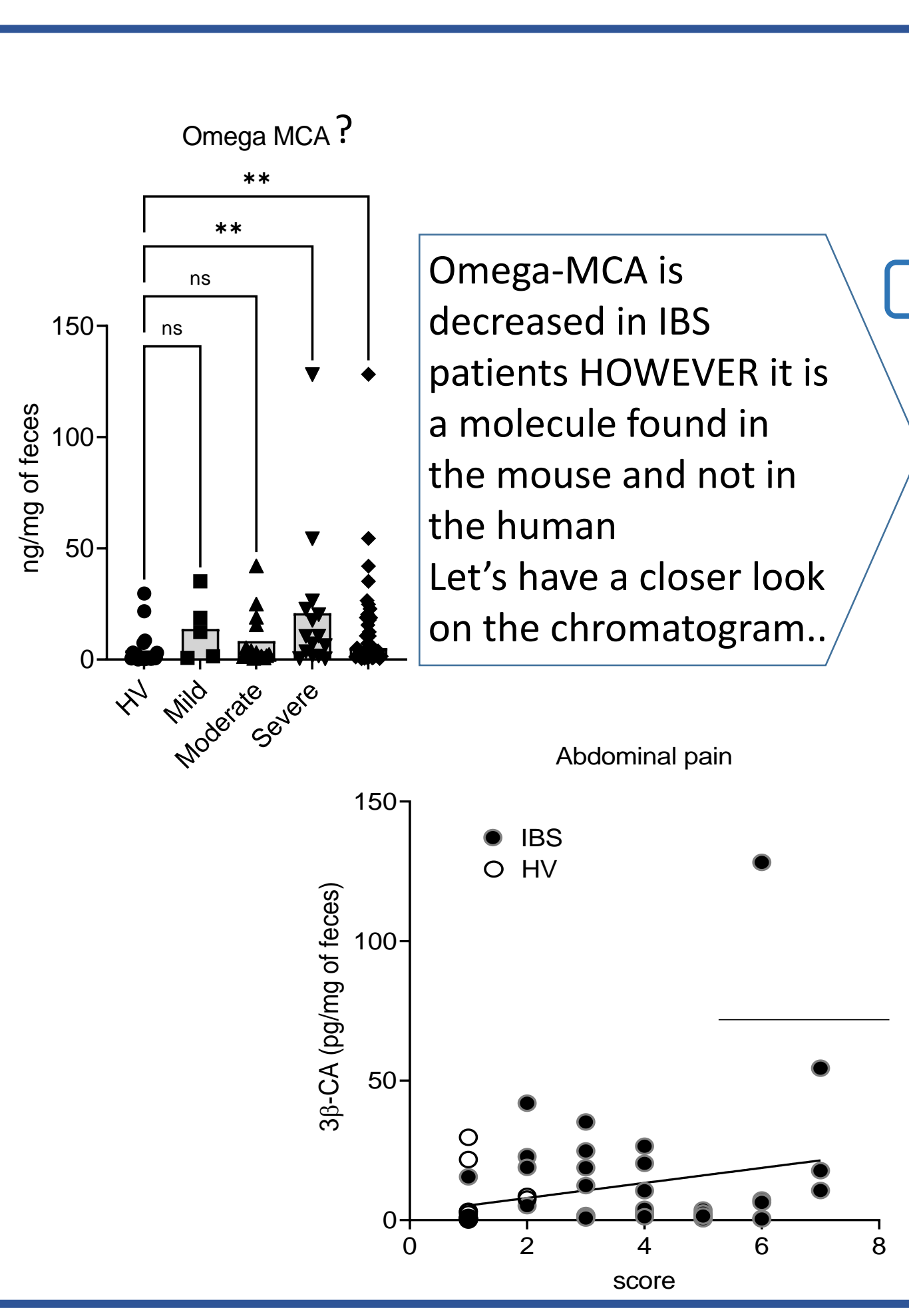
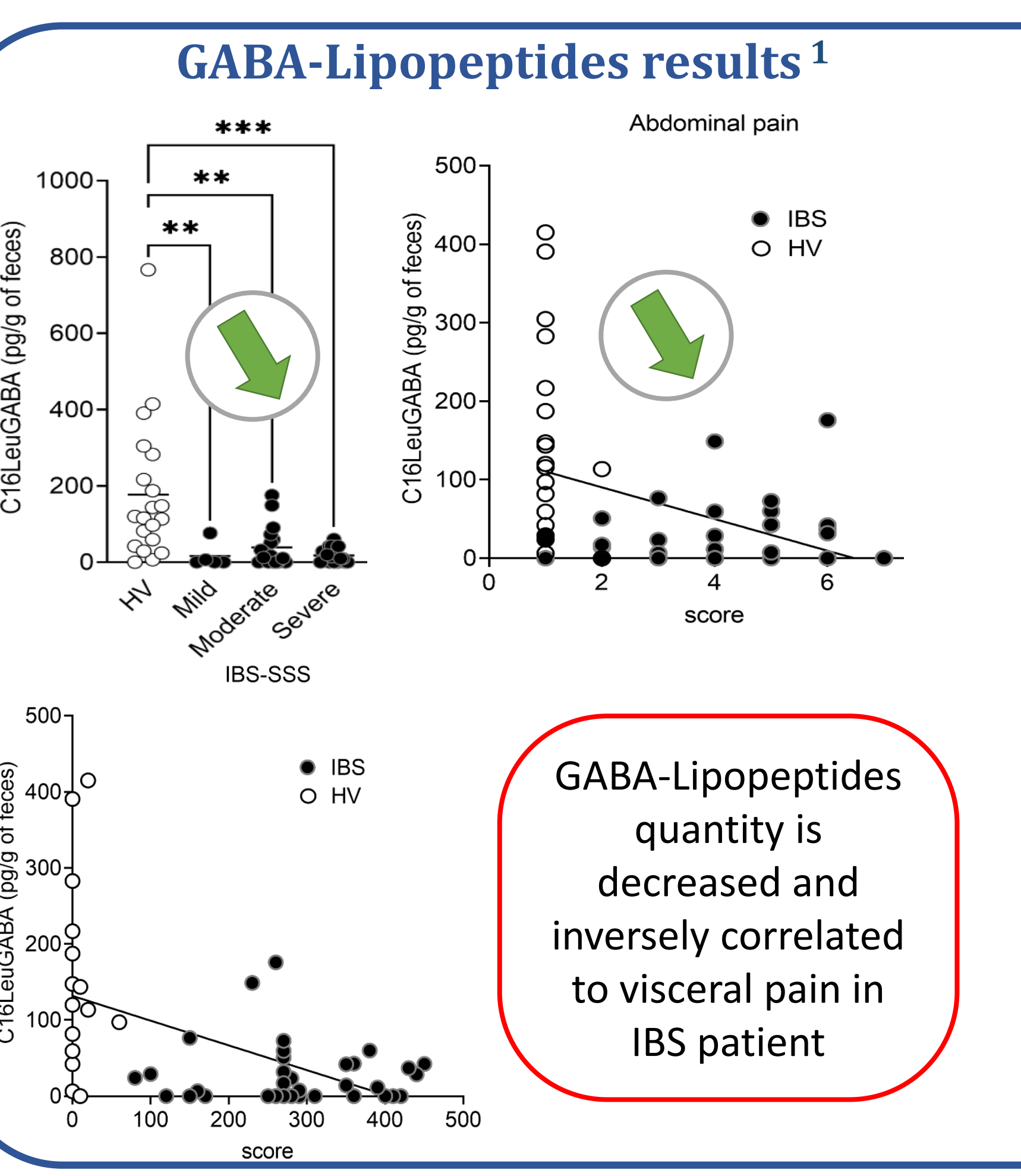
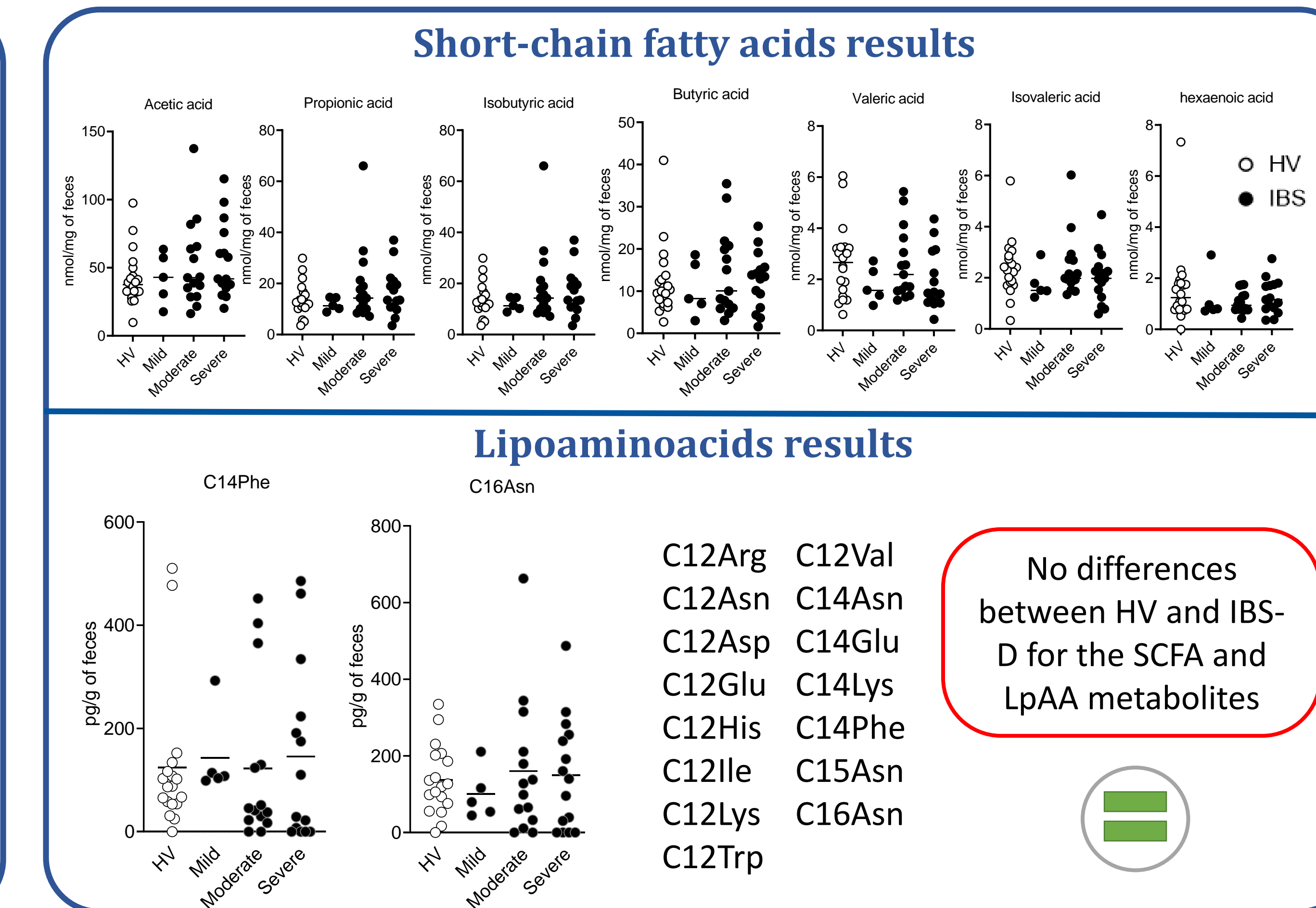
Short-chain fatty acids analysis - GC-FID

Column: Stabilwax-DA, Restek
Mobil phase: Hydrogen
Flow rate: 1,5 mL/min

Trace 1300, Thermo

18 HV	43 IBS-D	Female, N (%)
15 (75)	32 (78)	
31.9 ± 12.1	29.6 ± 8.6	Age, mean ± SD
	7 (16)	Mild IBS, N (%)
	18 (42)	75 < IBS-SSS < 149
	18 (42)	IBS-moderate, N (%)
		150 < IBS-SSS < 299
	18 (42)	IBS-severe, N (%)
		IBS-SSS > 300

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Conclusion and Perspectives

Visceral pain -> Fonctional dysbiosis of microbiota -> C16LeuGABA, SCFA, 3β-Cholic acid, LpAA

Largest cohort

20 HV 80 IBS (30D, 20M, 30C)

- Analysis of SCFA, LpAA, GABA-Lipopeptides, bile acids on diarrhea, constipated and mixed patients
- Addition of oxo-LCA to the bile acids quantification
- Study of the taxonomic dysbiosis