

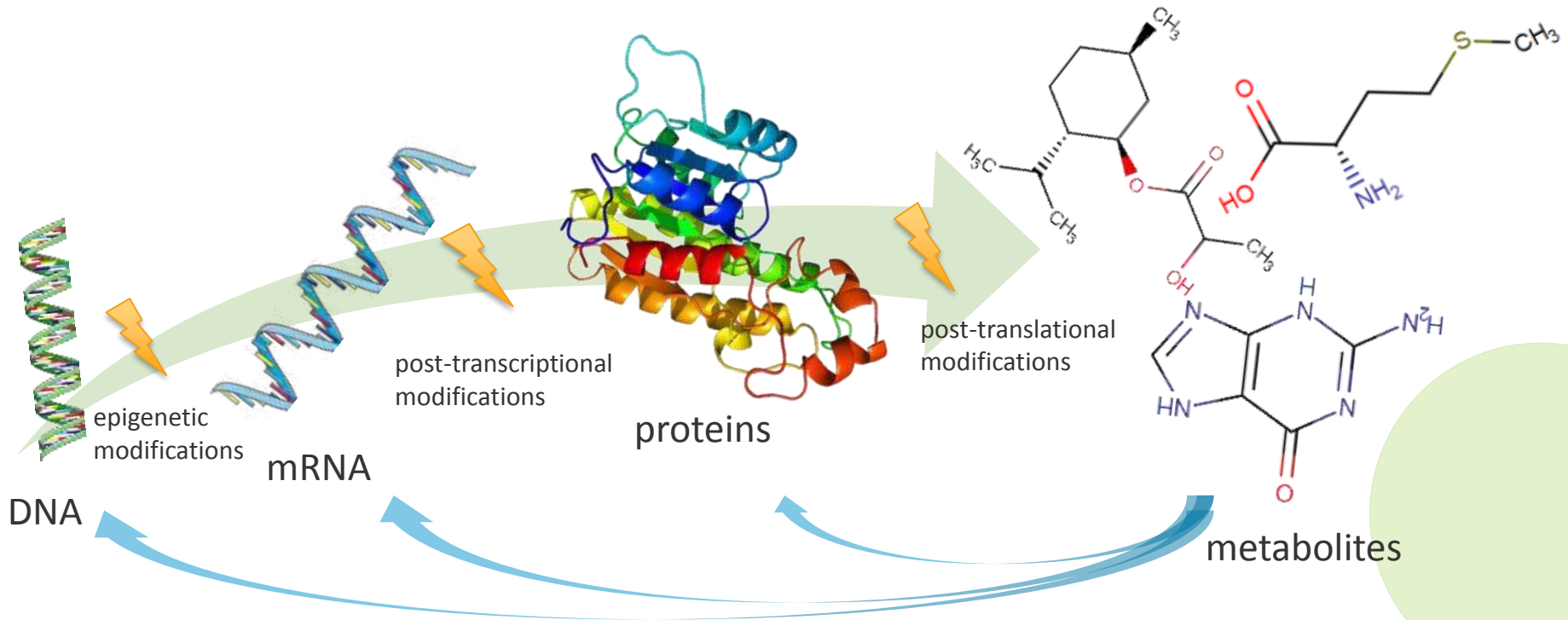
Integrative metabolomic approach in fish nutrition : concept & methodology

Simon Roques

Mini-symposium Phileo

ISFNF, Las Palmas, 2018

Metabolomics : direct assessment the metabolism



GENOTYPE

PHENOTYPE

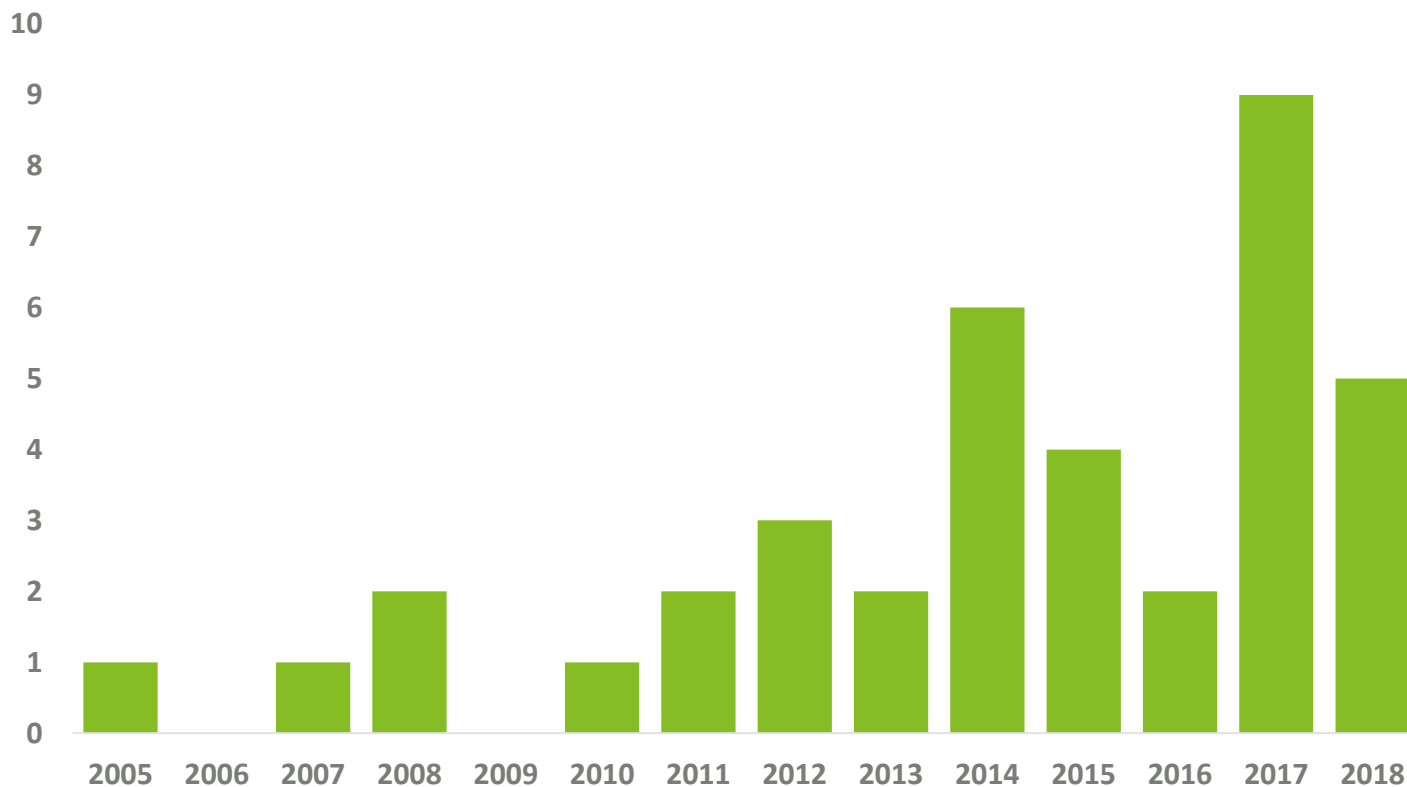
what could happen

what happen



Metabolomics : direct assessment the metabolism

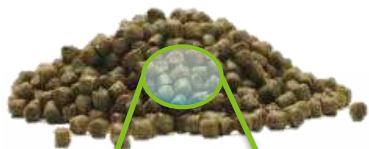
Publication per year in metabolomics in fish nutrition



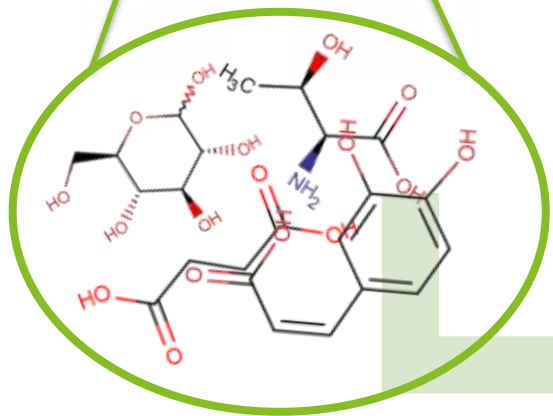


Integrate feed and metabolism

**FEED
(& FEEDSTUFF)**



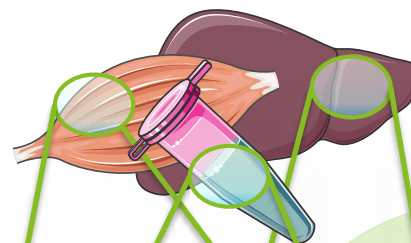
Metabolomics



**GROWTH
TRIAL**

RESULTS

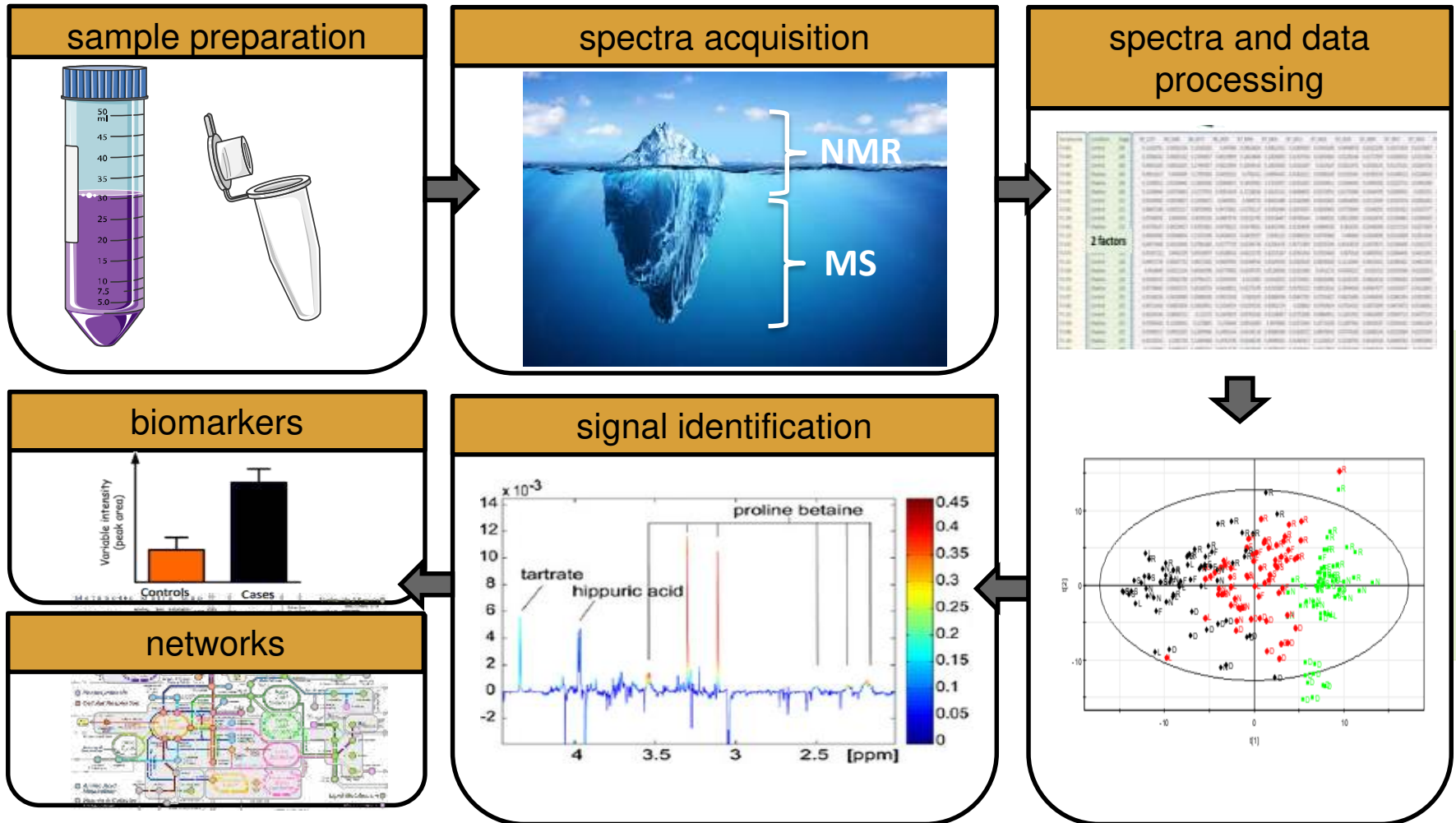
METABOLISM



Metabolomics



Metabolomic workflow



Sample preparation

FEED

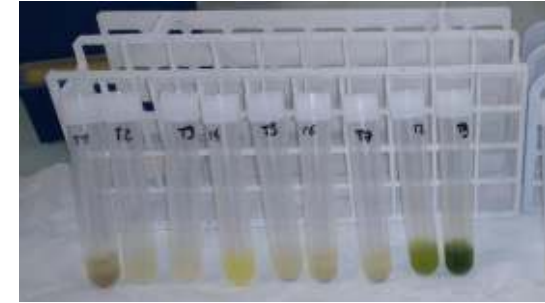


ethanolic extraction¹

EtOH/H₂O
80/20

EtOH/H₂O
80/20

H₂O



PLASMA



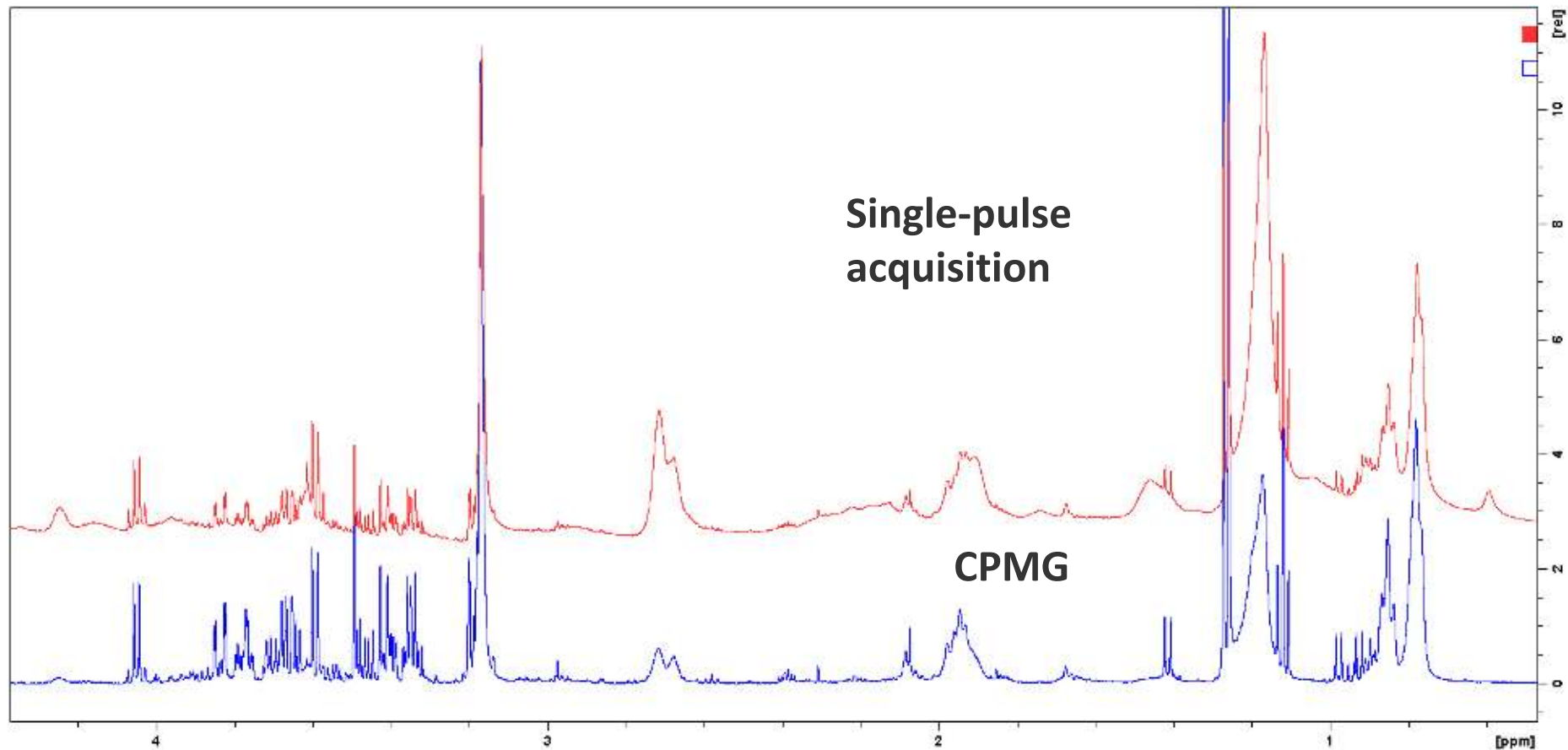
individually thawned



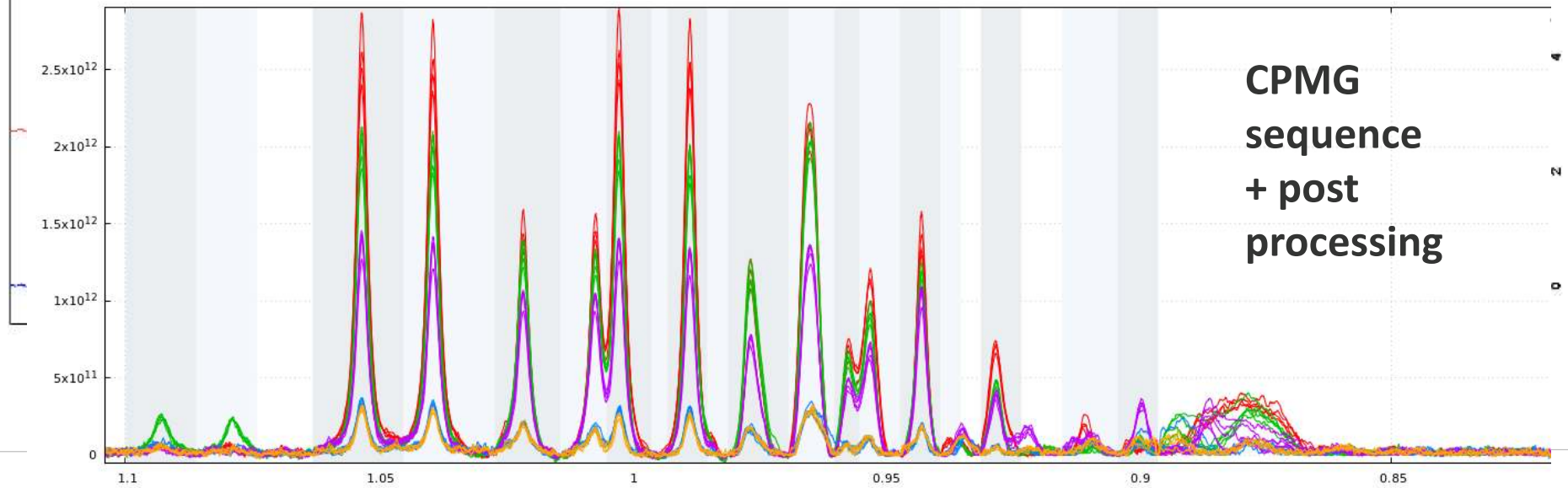
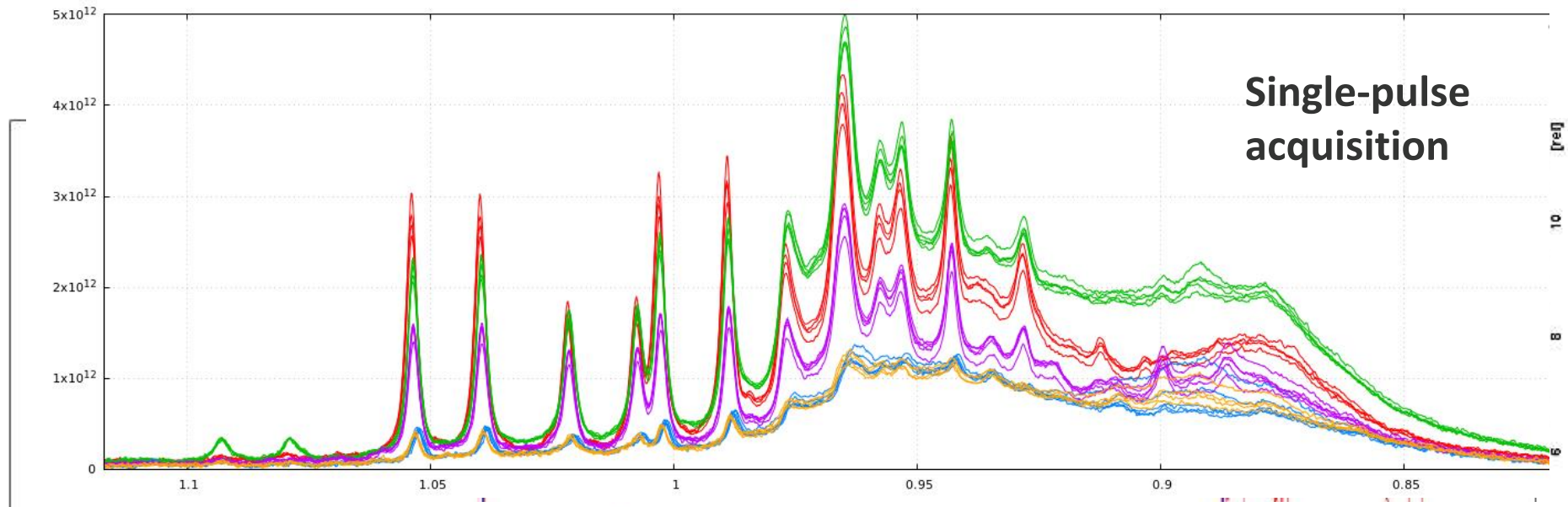
48h post-prandial
blood sampling



From extracts to data



From extracts to data



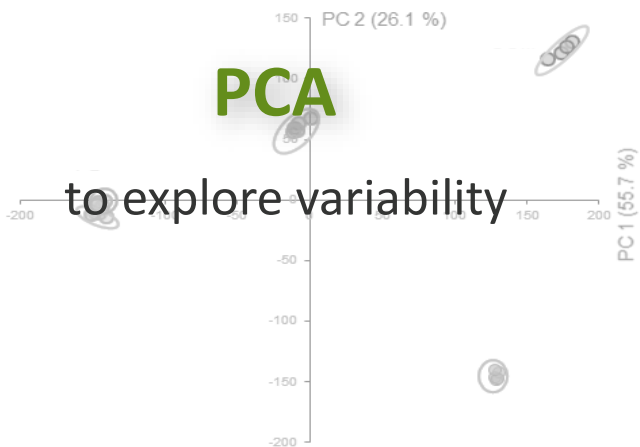


Which information in data ?

Multivariate

Feed & Plasma

PCA

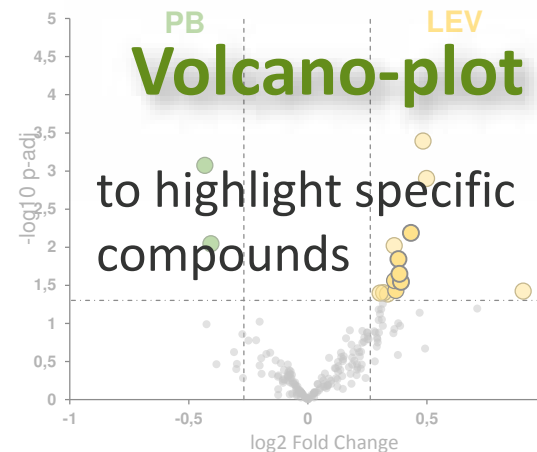


to explore variability



Univariate

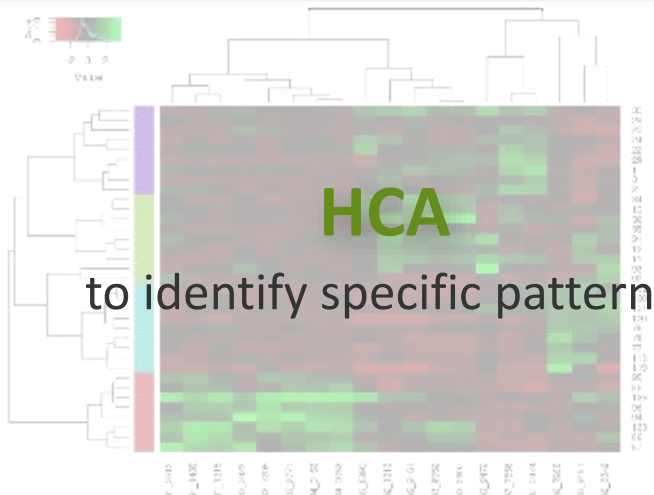
Volcano-plot



to highlight specific compounds

Plasma

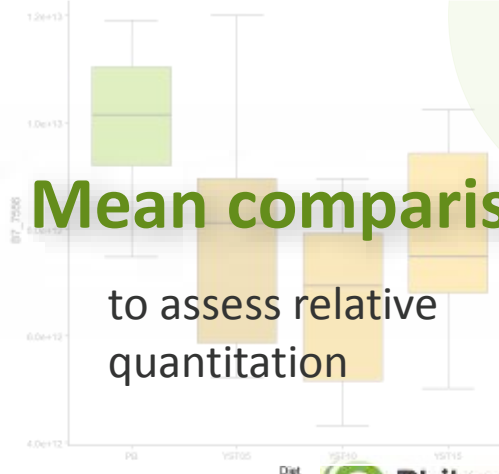
HCA



to identify specific pattern

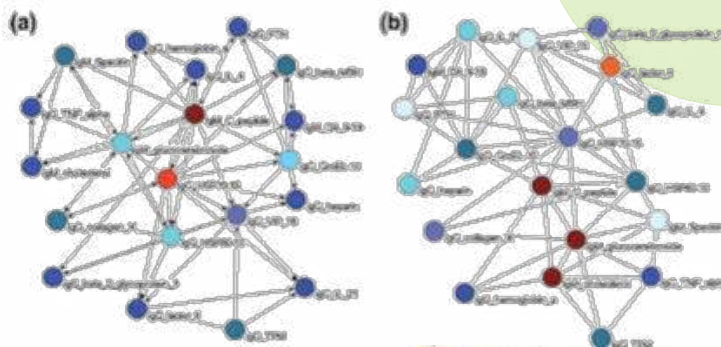
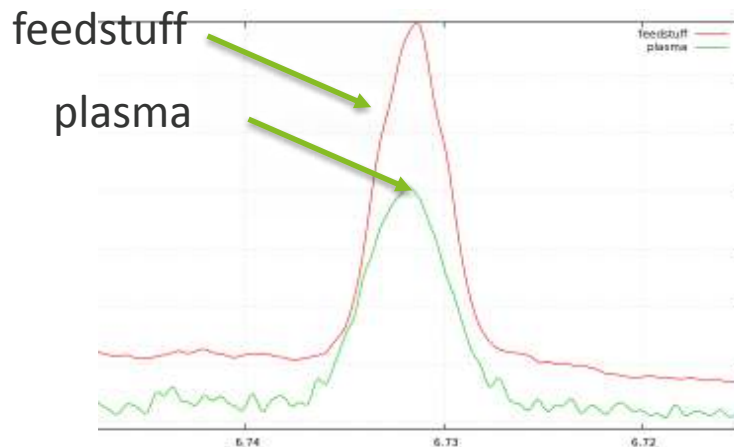
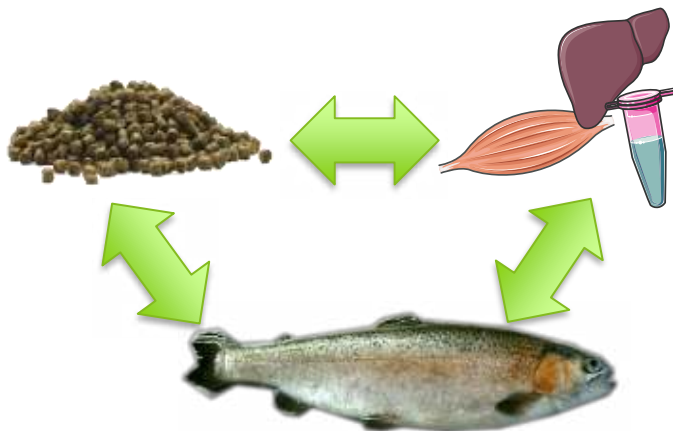
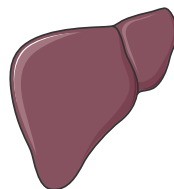
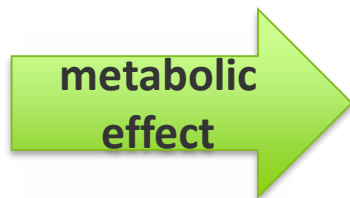


Mean comparison



to assess relative quantitation

Integrate the data



Integrative $^1\text{H-NMR}$ metabolomic investigation of the effect of alternative diets on rainbow trout plasma

Wednesday 6th, 13:15 Session 5: integrative tools

Acknowledgment



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Larroquet



MÉTABOLOME

Plate Forme
Metabolome
Bordeaux
Annick Moing
Catherine Deborde
Daniel Jacob



NINAqua

