

Metabolomics Biomarker of Alcohol Intake and Alcoholic Liver Injury



STUDY QUESTION

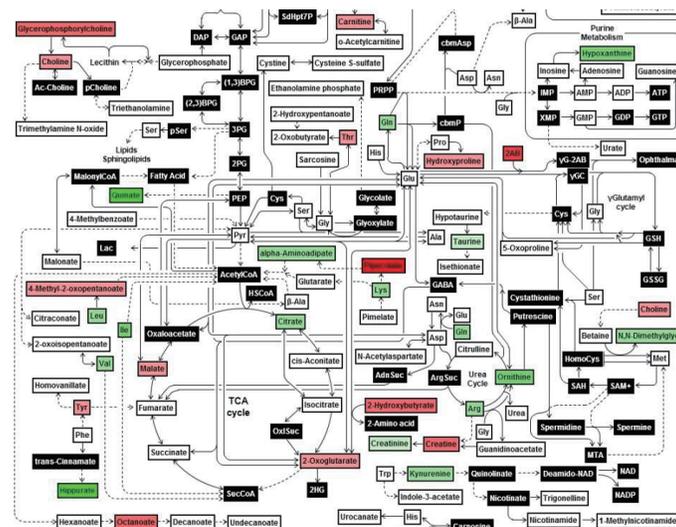
- How are plasma metabolomic profiles different between drinkers and non-drinkers?
- Which metabolite can be a biomarker of alcohol-induced liver injury?

896 + **193**
men men (replication)

from TMCS Wave 1.
(231 never, 220 low, 219 middle, 226 high alcohol intake)

115 plasma metabolites

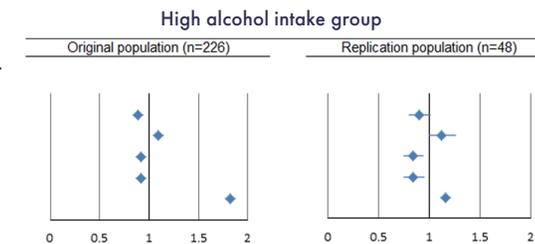
were profiled using CE-MS.



27 metabolites were associated with drinking.
19 were reconfirmed in replication.

Association with AST

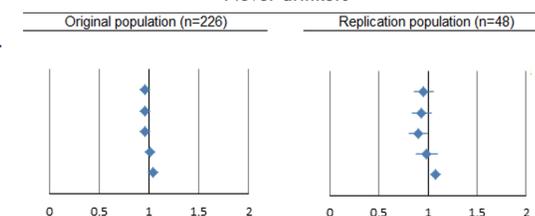
Gln
Thr
CSSG
Guanidinosuccinate
Glu/Gln ratio



Never drinkers

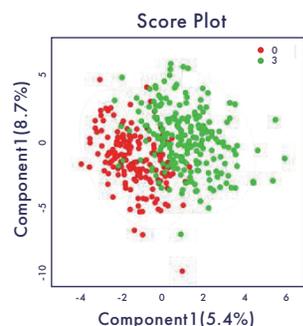
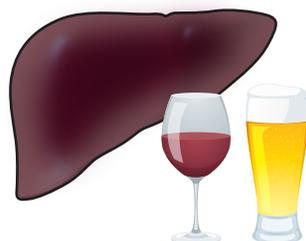
Association with AST

Gln
Thr
CSSG
Guanidinosuccinate
Glu/Gln ratio



Thr, Guanidinosuccinate, Gln and Glu/Gln ratio could be a good biomarker for alcoholic liver injury.

Alcoholic liver disease is a worldwide burden, with 493,300 (0.9%) deaths and 14,544,000 (0.6%) DALYs in 2010.



Green : High intake(n=226)
Red : Never drinkers(n=163)

CE-MS metabolomics is promising approach to find biomarkers of drinking and alcoholic liver diseases.



Daily drinking affects plasma metabolites widely, and three of them can be biomarkers of alcohol-induced liver injury.