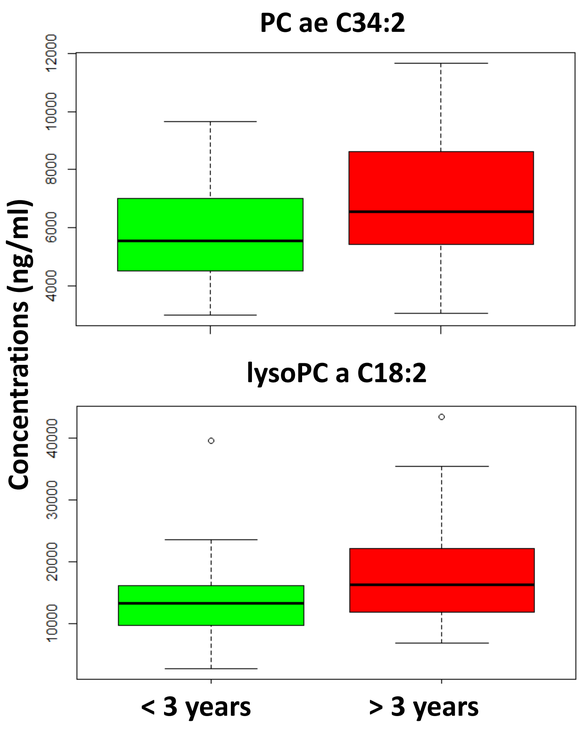
At least 12 metabolites may aid in the prediction of survival prognosis of HNSCC patients.

THE ROLE OF METABOLOMICS IN MSTARS (MULTIMODAL CLINICAL MASS SPECTROMETRY TO TARGET TREATMENT RESISTANCE). A STUDY FOCUSED ON HNSCC

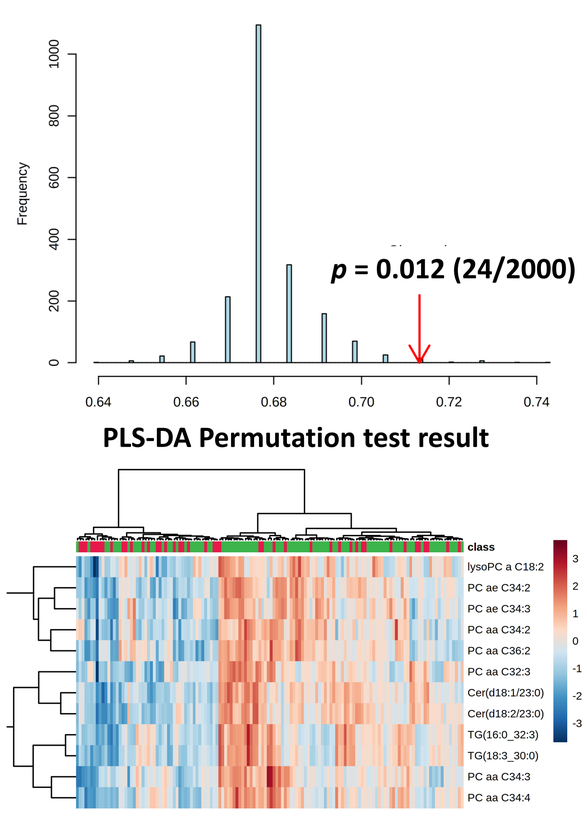
INTRODUCTION

- Head and neck squamous cell carcinoma (HNSCC) is the sixth most common cancer. 5-year survival was at 66% during 2002-2006[1].
- Risk factors: Lifestyle (e.g. smoking), viral infections (e.g. HPV), patient sex, age.
- AIM: HNSCC prognosis biomarker discovery.

PRELIMINARY RESULTS



Survival box plots for selected compounds.



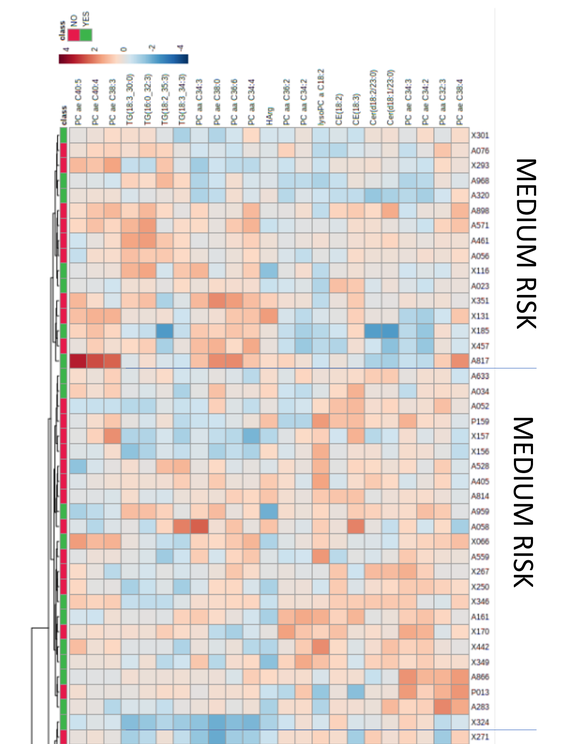
Heatmap depicting two separate clusters of patients, colored by survival <3 years (red) and > 3 years (green).

METHODOLOGY

1. Semi-targeted approach: Biocrates Quant500 kit[2]
2. Training set: N = 101
3. Validation set: N = 365
4. We investigated: N = 146
5. T-test for survival, PCA for overview[3]. HCA[4], PLS-DA[4], Survival analysis[5,6]

CONCLUSIONS

- 12 metabolites (lipids) validated as predictive of survival in subset of validation cohort from original 23
- Heatmap reveals similar clustering patterns in training & validation cohorts related to prognosis.
- Further modelling incorporating confounding factors and clinical covariates planned in larger cohort.



Heatmap of the 23 significant metabolites in the training cohort. Samples clustered in five clusters , with the last cluster having a notably higher mortality. This cluster indicates lower concentrations of key metabolites in these patients.

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