

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

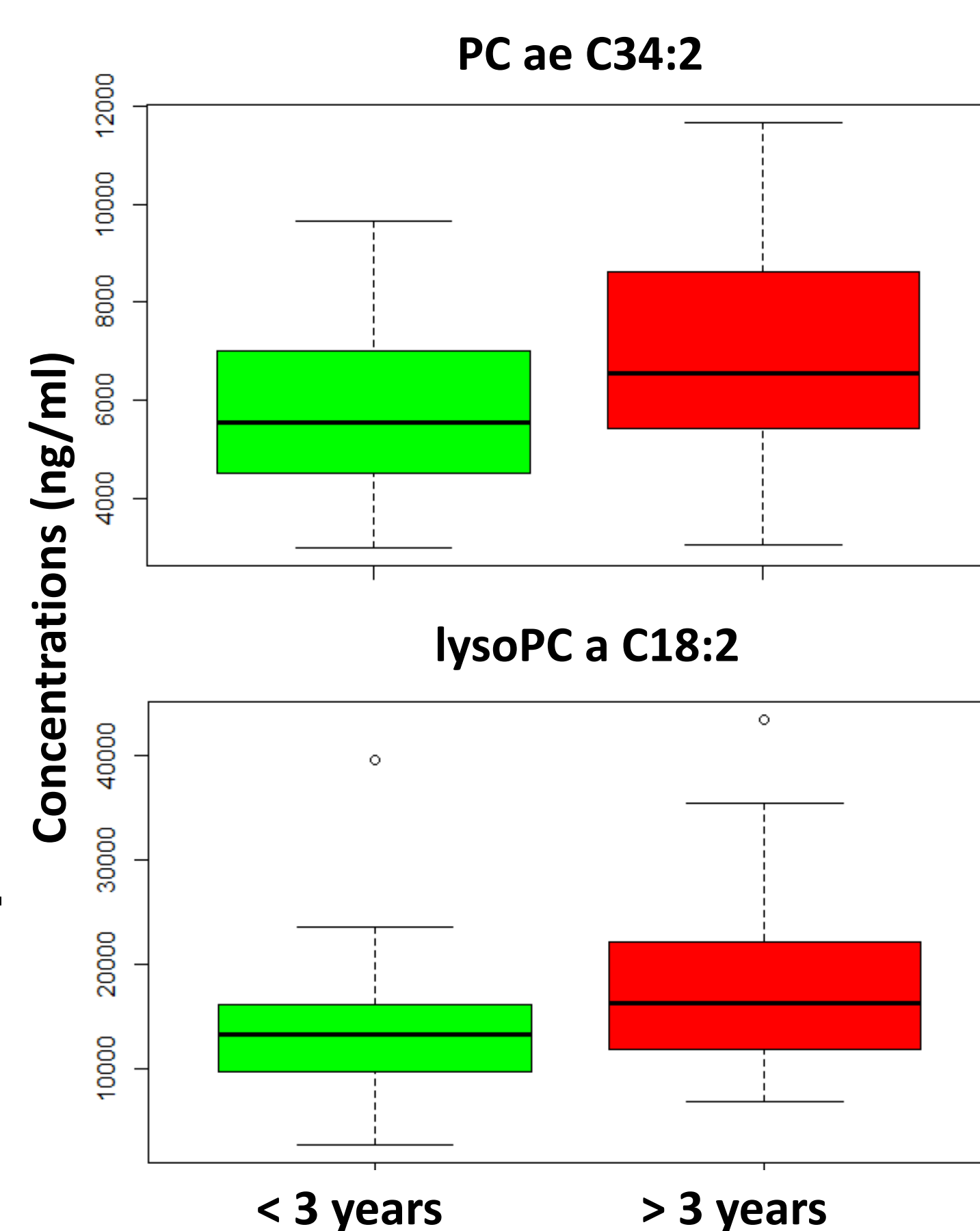


THE ROLE OF METABOLOMICS IN MSTARS (MULTIMODAL CLINICAL MASS SPECTROMETRY TO TARGET TREATMENT RESISTANCE). A STUDY FOCUSED ON HNSCC

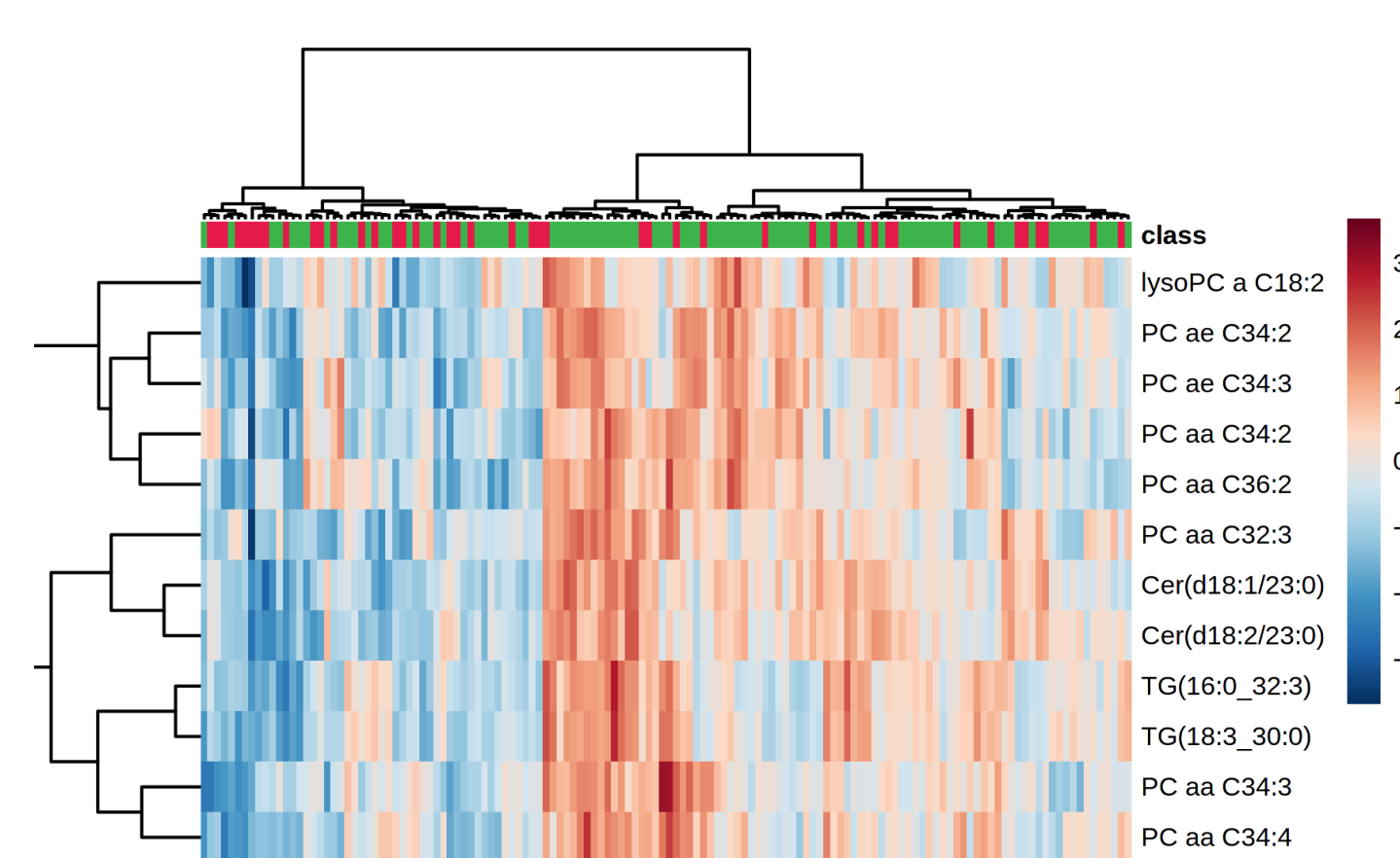
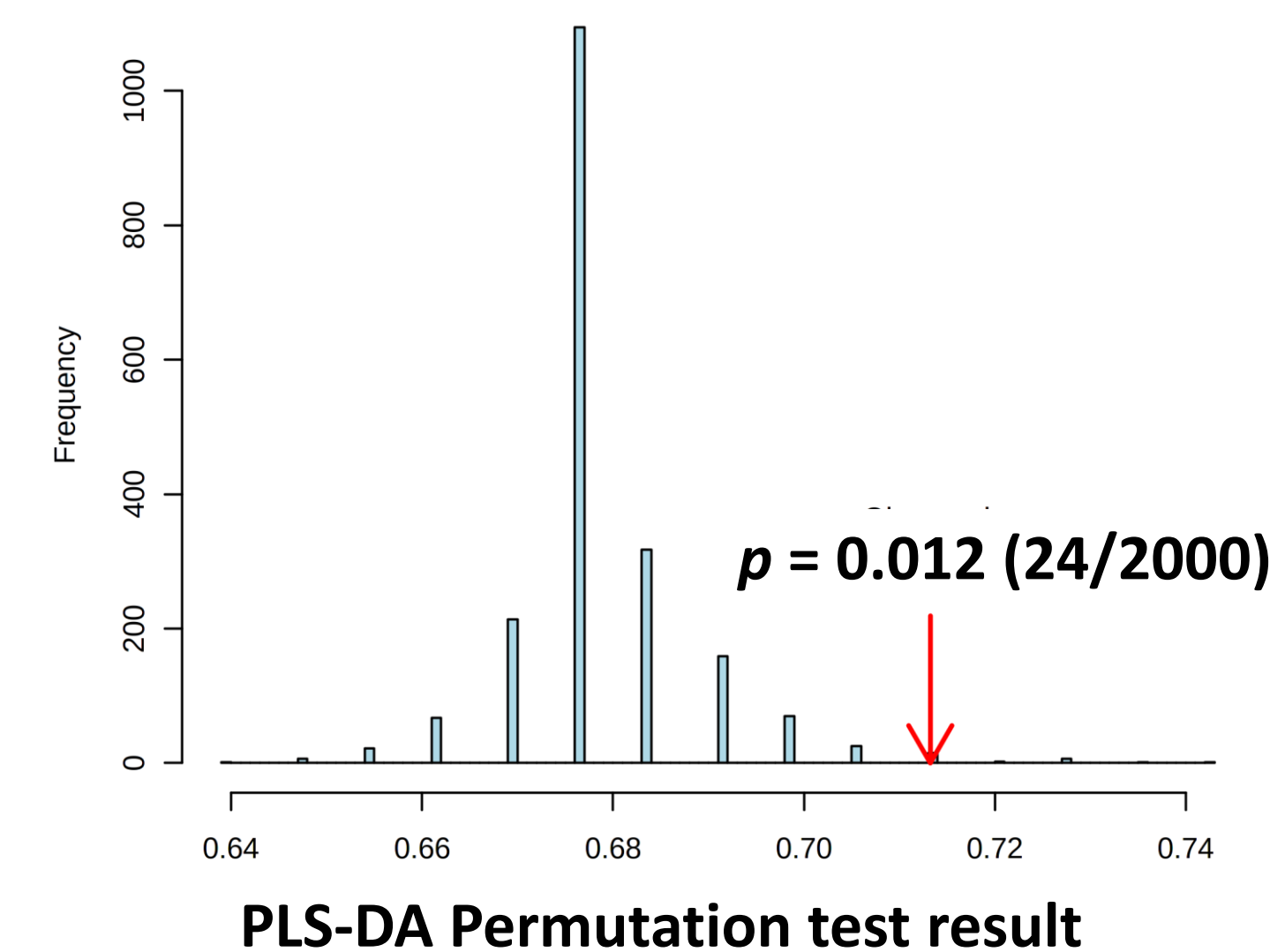
INTRODUCTION

- Head and neck squamous cell carcinoma (HNSCC) is the sixth most common cancer. 5-year survival was at 66% during 2002-2006¹.
- 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.



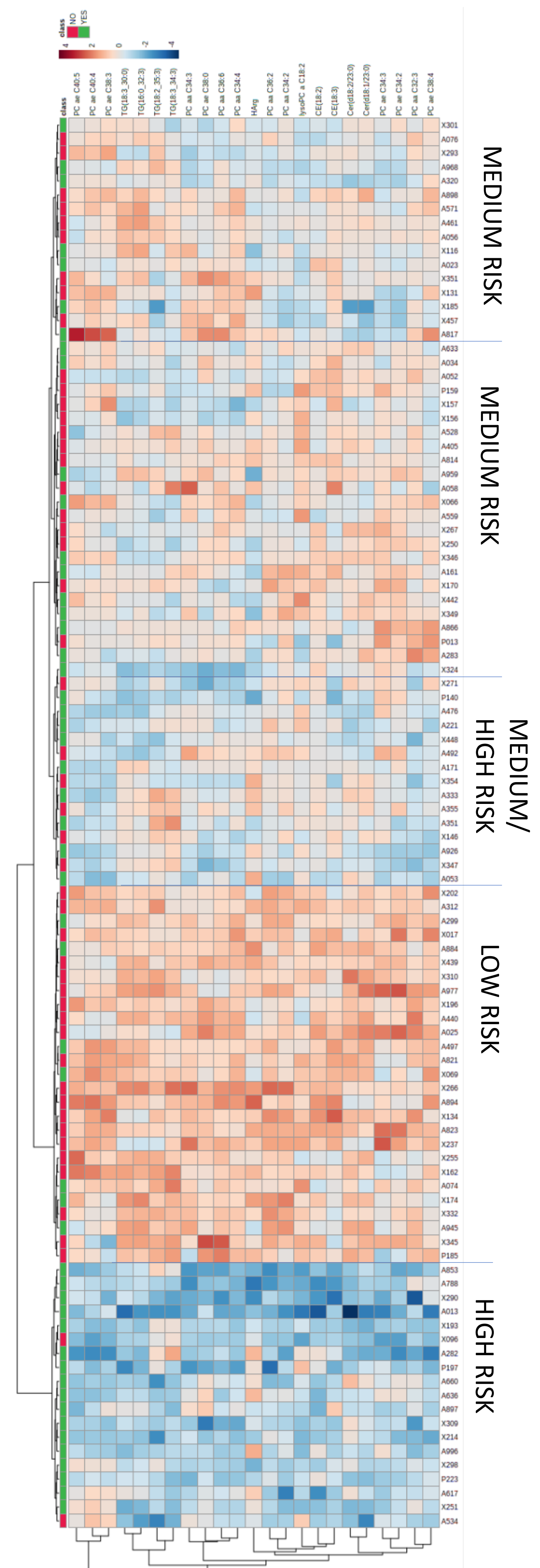
Heatmap depicting two separate clusters of patients, colored by survival < 3 years (red) and > 3 years (green).

METHODOLOGY


1. Semi-targeted approach: Biocrates Quant500 kit²
2. Training set: N = 101
3. Validation set: N = 365
4. We investigated: N = 146
5. T-test for survival, PCA for overview³. HCA⁴, PLS-DA⁴, 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.

 **Nikolaos Georgios Bliziotis¹**, Álvaro Fernández Ochoa², Friederike Gutmann^{1,3,4,5,6}, Jochen Kruppa³, Janine Wiebach³, Ingeborg Tinhofer-Keilholz³ and Jennifer Kirwan^{1, 4} on behalf of the MSTARS consortium

¹Max Delbrück Center for Molecular Medicine, MDC (Berlin, Germany), ²Department of Analytical Chemistry, University of Granada (Granada, Spain), ³Charité Universitätsmedizin Berlin (Berlin, Germany), ⁴Berlin Institute of Health@³Charité Universitätsmedizin, (BIH) (Berlin, Germany), ⁵Experimental and Clinical Research Center (ECRC), a cooperation between ¹Max Delbrück Center for Molecular Medicine, MDC (Berlin, Germany) and ³Charité Universitätsmedizin Berlin (Berlin, Germany), ⁶German Centre for Cardiovascular Research (DZHK) (Berlin, Germany)

