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# Identification of lipid species: potential biomarkers for early detection of hepatocellular carcinoma



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## Introduction

- Hepatocellular carcinoma (HCC) is the most common type of liver cancer.
- HCC is associated with cirrhosis.
- Poor survival rate of HCC is due to diagnosis of HCC at late stage.

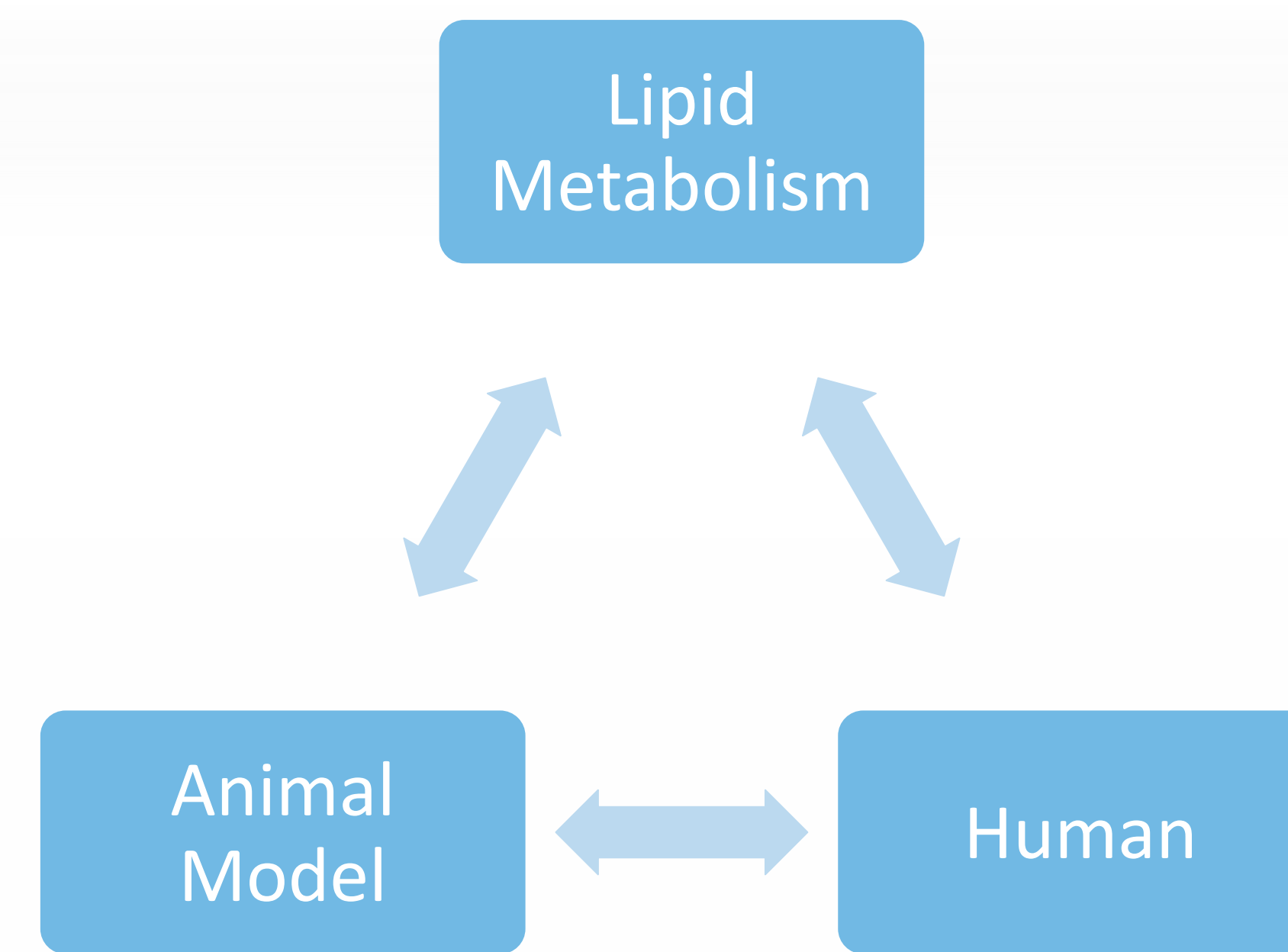
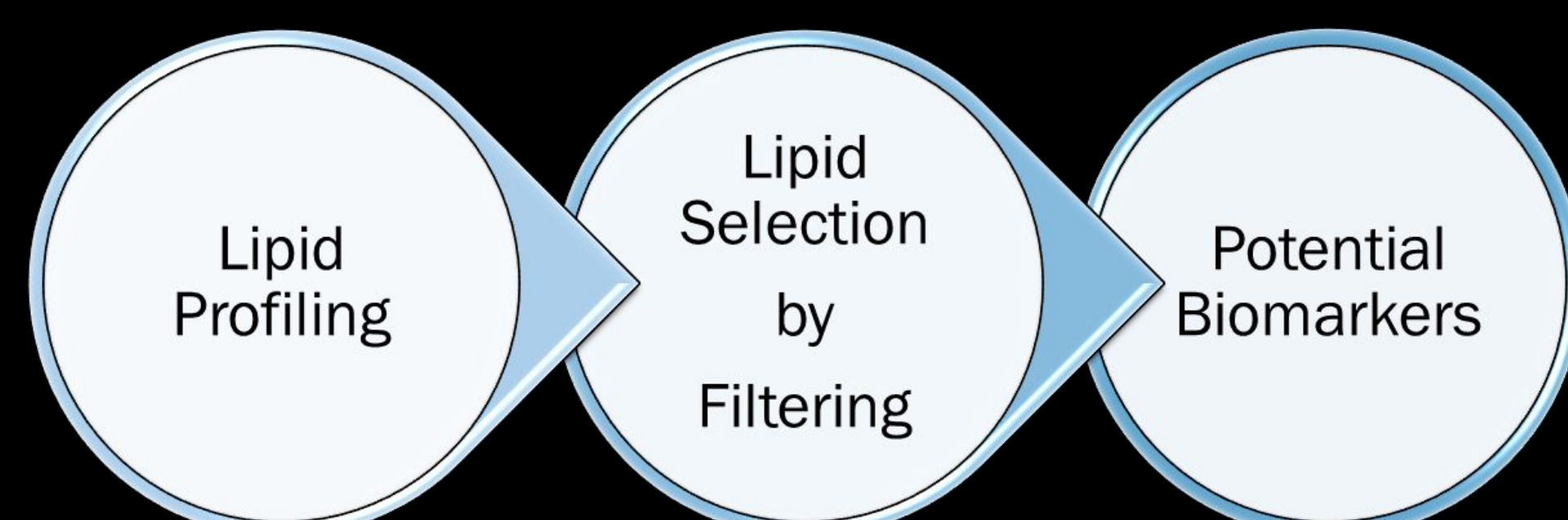
## Objective

To identify potential lipid species biomarkers for the advancement of the early detection of HCC, alterations in lipid metabolism during carcinogenesis from pre-tumor tissue towards HCC were investigated.

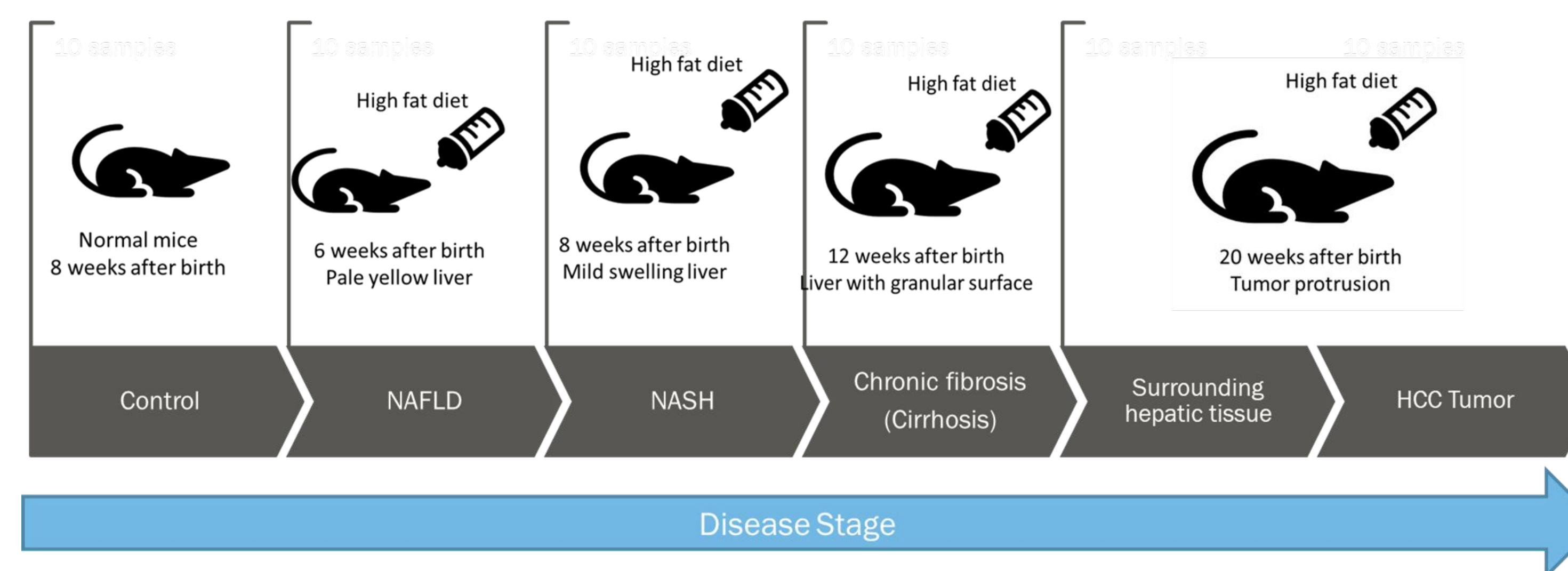


- False negative result due to low sensitivity of the test
- Discomfort from invasive method
- Higher accuracy
- Less discomfort

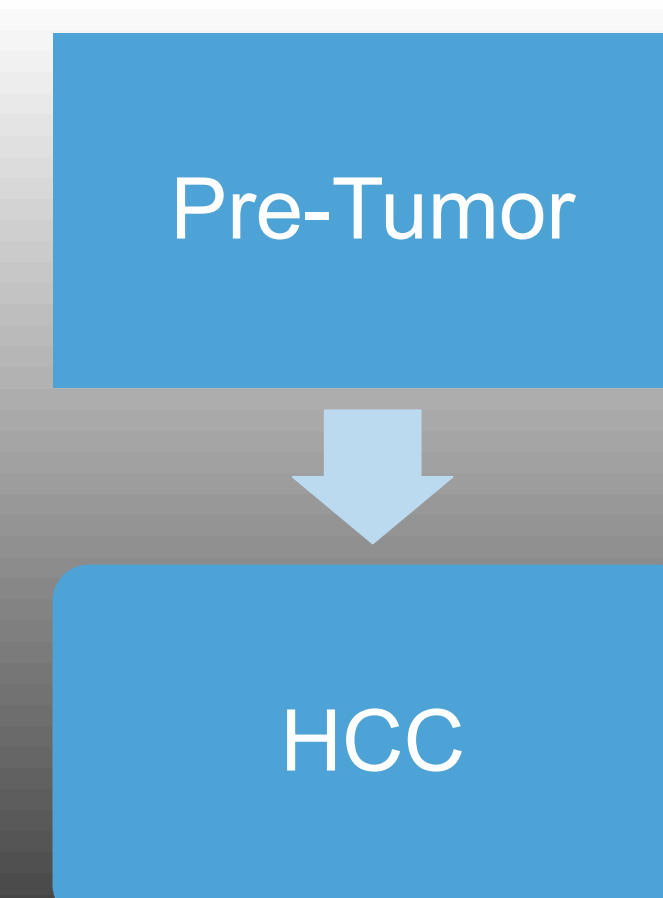
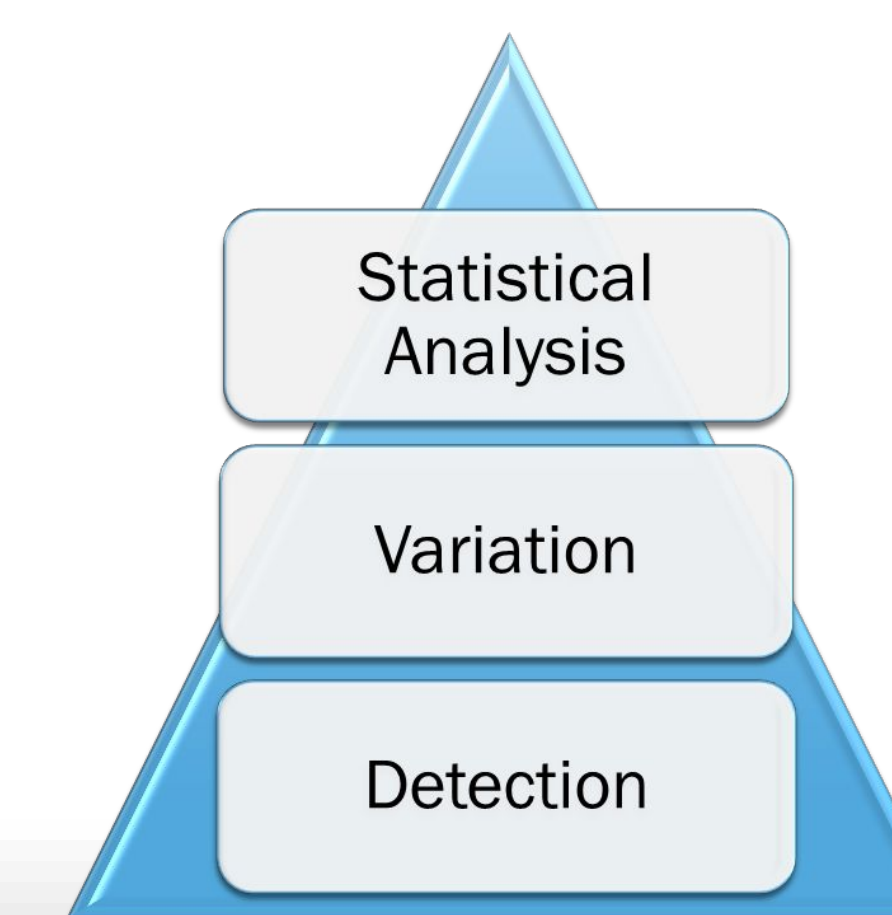
## Methods



## NAFLD-STAM Model



## Statistical Analysis



## Human Tissue Samples

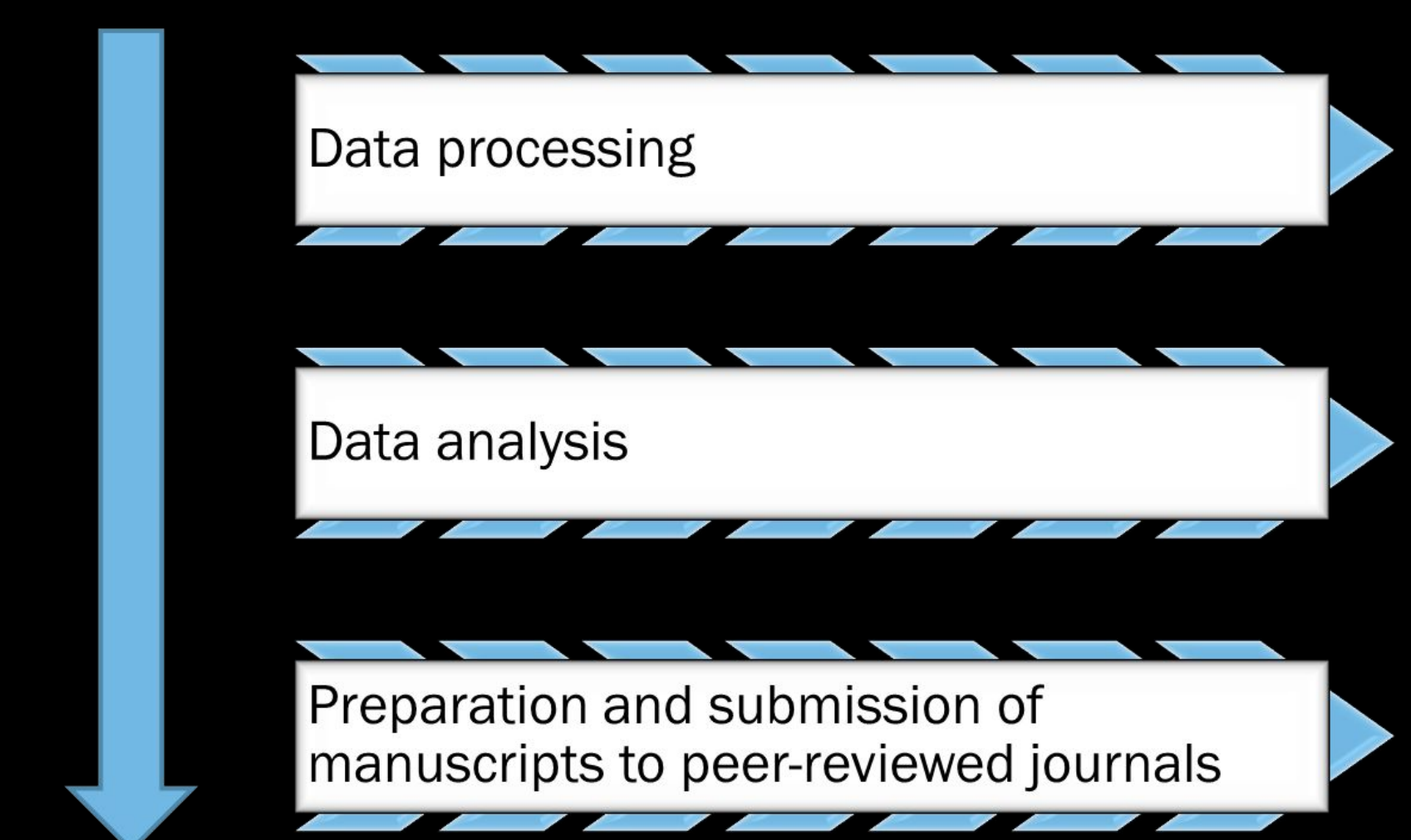
## Expected Results

- Alterations in lipid metabolism
- Significant difference in lipid distribution and composition between stages
- More significant change in lipid species from certain lipid classes

## Preliminary Findings

- Different lipids classes and their individual molecular species reflect the progression of HCC.
- Additional study is needed to understand the detailed mechanism of lipid alteration.

## Future Directions



## References

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