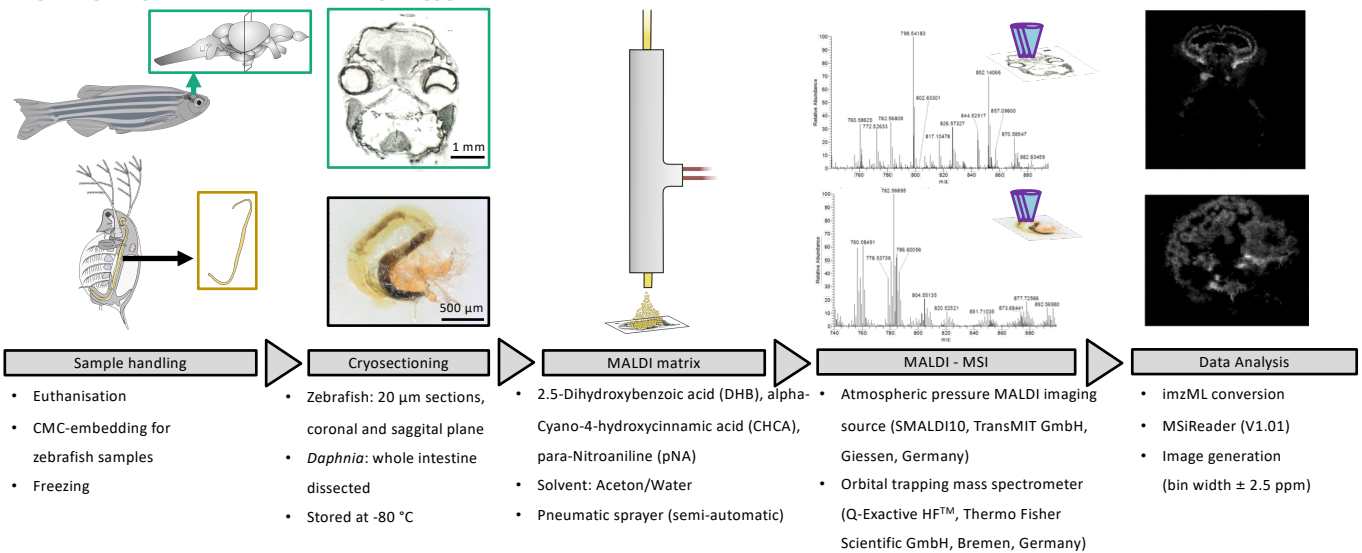




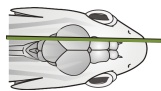
INTRODUCTION

The pollution not only in marine but also in freshwater ecosystems rises due to the increasing amount of chemicals in use today. Many substances, such as bisphenol A, are lipid soluble and can thereby affect the lipid content and distribution in tissue. Because of severe consequences for animal and human health, there is a need to develop a method to investigate the influence of environmental contaminants on the lipid distribution of different organs. MALDI imaging can provide detailed information on molecular changes in biological samples. For this reason, we develop a MALDI-MS imaging method for the aquatic model organisms zebrafish (*Danio rerio*) and waterflea (*Daphnia magna*). This is the first step for further studies on molecular effects of environmental pollutants in aquatic organisms.

WORKFLOW FOR DAPHNIA AND ZEBRAFISH TISSUE

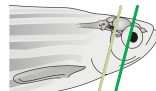


SAGGITAL PLANE OF ZEBRAFISH



m/z 850.6523
m/z 726.5603
m/z 803.6375

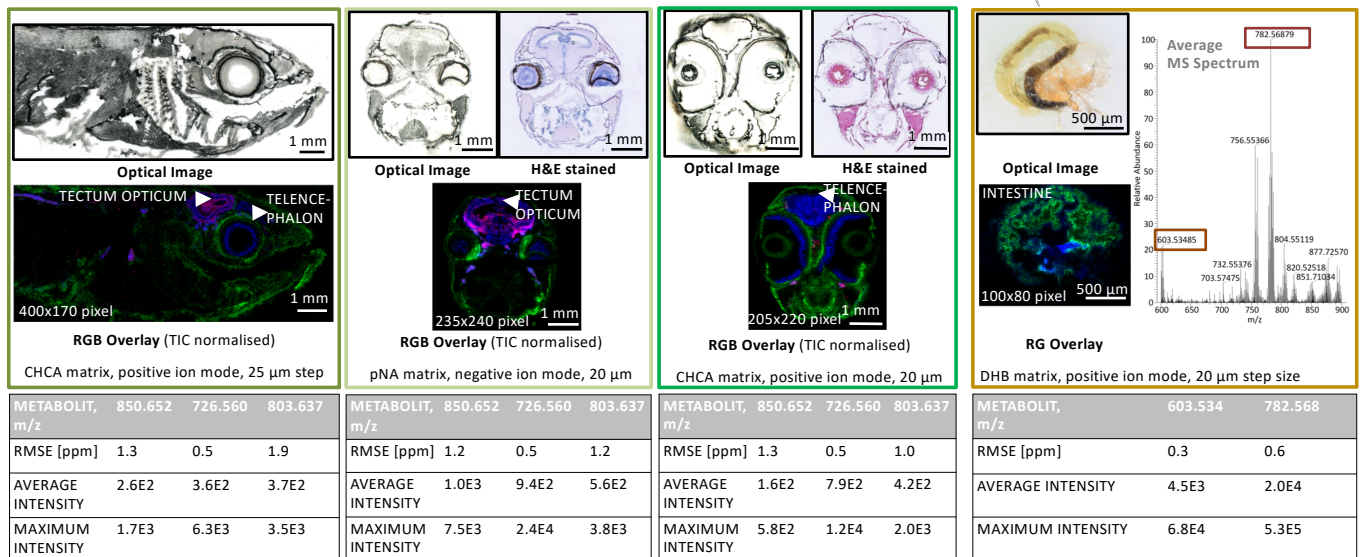
CORONAL PLANE OF ZEBRAFISH



INTESTINE OF DAPHNIA MAGNA



m/z 782.5687
m/z 603.5348



CONCLUSIONS AND OUTLOOK

- Sample preparation workflow for MALDI imaging of zebrafish established.
- Detailed phospholipid signatures in wide variety of organs, specifically neural tissue
- First results for MS imaging of *Daphnia magna*.
- Basis for the analysis of changes in lipid pattern caused by environmental contaminants.