

FWF Data Management Plan (DMP)
Project SLOT P32193
Template (last Update 05.7.2024)

I General Information	
I.1 Administrative information	<p><i>Rainer Kurmayer</i> <i>University of Innsbruck</i> <i>Research Department for Limnology</i> <i>Deputy Institute Head</i></p> <p><i>Mondseestrasse 9</i> <i>5310 Mondsee</i> <i>Austria</i></p> <p><i>Tel: 0043-512-507-50242</i> <i>mobile: 0043-650-8657122</i></p> <p><i>e-mail: rainer.kurmayer@uibk.ac.at</i> <i>http://www.uibk.ac.at/limno/personnel/kurmayer/</i></p>
I.2 Data management responsibilities and resources	<p>As above, Resources have included the upload of raw images to OA repositories during the publication process usually by the first author, eg. Rainer Kurmayer or Ruben Moron Asensio, PhD student (Kurmayer et al. 2020, Sci Rep., or submitted to journal Toxins, MDPI and Moron et al. 2021, Micoorganisms, MDPI).</p>
II Data Characteristics	
II.1 Data description and collection or re-use of existing data	<ul style="list-style-type: none"> +) Imaging has been performed using high resolution microscopy (SP8) together with collaboration partner, Martin Offerdinger +) Raw Images have been processed for deconvolution using the Huygens software. In relation to publication such images have been uploaded to repository such as the BiImage Archive of Biostudies (https://www.ebi.ac.uk/biostudies/). +) Using such type of OA archive and following the upload structure data provenance is documented by individual accession numbers, e.g. AccessionS-BSST332.

	<ul style="list-style-type: none"> +) mostly raw and high resolution images (from laser scanning microscope SP8), the R code used for generating the figures in Moron et al. (Microorganisms) has been deposited at GitHub (https://github.com/RubenMoronAsensio/Chem_modif_peptides) +) data format include for raw images: epifluorescence microscopy (.jpg or .jp2); high resolution laser scanning microscopy (.ids/.ics, Imaris); or .png +) justification: the images data format are widely used and can be imported using OA image processing software, e.g. ICY or imageJ +) preferred format is .ids/.ics +) typically one sample has been documented using 20 images, triplicate samples result in 60 individual images, individual experiments contain hundreds of images requiring 1-4 gigabytes (GB) of storage space
III Documentation and Data Quality	
III.1 Metadata and documentation	<ul style="list-style-type: none"> +) Using the repository of BiImage Archive of Biostudies (https://www.ebi.ac.uk/biostudies/) metadata describing individual experiment are routinely collected, i.e. The BiImage Archive implemented MIFA metadata guidelines to further support FAIR sharing. +) such metadata include Dataset Name, Image File No, Source Name, Characteristics [Organism], NCBITaxon, char. Cell line, growth protocol, treatment protocol, image acquisition and feature extraction protocol, name for the imaging assay, experimental condition, whether raw image or derived, the names of the channels and what was labeled in each channel, data analysis protocol, name of the file with the results in, etc. +) other documentation such as detailed protocols is given in the corresponding publications (Kurmayer et al. 2020, Sci Rep., or submitted to journal Toxins, MDPI and Moron et al. 2021, Micoorganisms, MDPI).
III.2 Data quality control	<ul style="list-style-type: none"> +) in general during raw imaging acquisition at the laser scanning microscope care was taken to prevent oversaturation conditions i.e., the power of the white light laser (WLL) was adjusted prior image acquisition. Additionally, the motion correction collar was adjusted independently for each microscopic slide to increase image quality. +) Cells for imaging were randomly selected and random selection was partly tested using flow cytometry analysis (eg Kurmayer et al. 221, Sci. Rep. and Toxins, MDPI, submitted) +) For each experiment controls made from cells grown and processed under identical conditions but without treatment (= feeding substrate of unnatural amino acid) have been included. In addition as shown in Moron et al. (2021), Microorganisms, MDPI controls were included by imaging cells from all treatments but without fluorophore addition. +) total signal intensity obtained from cells was statistically compared to control cells +) colocalization analysis was only applied if signal intensity differed significantly from controls
IV Data Storage, Sharing, and Long-Term Preservation	
IV.1 Data storage and backup during the research process	<ul style="list-style-type: none"> +) copies of raw images have been stored using several hard drives used by different person (PL Rainer Kurmayer, PhD student Ruben Moron Asensio) +) since the shared University storage space has been always severely limited only the images which are currently processed can be stored using the University system +) as soon as results have been published raw images can be obtained from the EBI BioArchive which is considered sustainable

	+) access to the data is limited to the students and coworkers performing the analysis until publication
IV.2 Data sharing and long-term preservation	<p>+) Preferred Resources: BioStudies – one package for all the data supporting a study, https://www.ebi.ac.uk/biostudies/ , Deposition of data to BioStudies and data access are free of charge.</p> <p>+) in general all raw images have become available after publication during the peer-review process.</p> <p>+) After the project final report submission to the FWF (31 July 2024), all unpublished raw images will be deposited using the Bioarchive package with confidential state until three more years.</p> <p>+) since all publications have been or will be published open access under the Creative Commons License CC BY 4.0 the use of data will be always in relation to the respective citation</p>
V Legal and Ethical Aspects	
V.1 Legal aspects	<p>+) since no intellectual property rights have been claimed the Creative Commons License CC BY 4.0 will be relevant</p> <p>+) personal data are not used (images have been taken from microorganisms, i.e. cyanobacteria strains isolated from surface water)</p>
V.2 Ethical aspects	+) not applicable