

Milica Ciric

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WORK EXPERIENCE

March 2014 – September 2015 **Postdoctoral Scientist** (*Ministry for Primary Industries*)

Developing workflow for sample collection and DNA extraction from the mid-intestines of farmed Chinook salmon and subsequent 16S rRNA amplicon sequencing to survey and identify the bacteria present in the salmon gut.

January 2014 – March 2014 **Chemical Inventory Administrator** (*Massey University*)

Reviewing and updating of chemical support systems at the University, including the current Safe Methods of Use.

October 2009 – December 2013 **PhD student** (*AgResearch Ltd*)

Developing experimental method for targeted sequencing of portion of metagenome encoding for secreted and surface proteins ('metasecretome'). It was used to mine metasecretome of a bovine rumen plant-adherent microbial community for proteins involved in degradation of the plant fibre.

February 2014 – June 2013 **Demonstrator in Biology of Cells and DNA Technology papers** (*Massey University*)

Helping undergraduate students gain practical experience with a range of molecular and cell biology techniques.

May 2008 - March 2009 **MSc student** (*IMGGE, Human Molecular Genetics*)

Analysing putative DNA sequence involved in the regulation of the expression of human *SOX18* gene.

TERTIARY EDUCATION

2014 **PhD in Biochemistry** (*Massey University, New Zealand*)

"Metasecretome phage display - a new approach for mining surface and secreted proteins from microbial communities"

2009 **MSc in Molecular Biology and Physiology, Genetic Engineering and Biotechnology major** (*University of Belgrade, Serbia*)

"Cloning and functional analysis of the GC-rich regulatory element involved in the regulation of the human *SOX18* gene expression"

SKILLS

Molecular biology techniques

- DNA extraction and enzymatic manipulation; agarose gel electrophoresis; cloning and recombinant DNA technology; shotgun library construction; PCR and primer design; preparation of highly competent *E. coli* cells and transformation; whole cell lysate preparation; Bradford protein assay; SDS-PAGE; Western blot; ELISA
- Phage display (native and disassembled phage gel electrophoresis; determining phage concentration by titration and densitometry; phage ELISA; secretome selection; building and affinity screening of phage display libraries)

In vitro cell cultures and microbiology techniques

- cultivation of HeLa cells; transient cell transfection (calcium phosphate and lipofectamine); reporter gene assays (β -gal and CAT)
- basic microbiology techniques; rumen microbiota sampling and fractionation

Sequencing and sequence analysis

- Sequencing (previous experience with Sanger sequencing, 454 Roche GS-FLX Titanium and Illumina MiSeq platforms)

- Assembly, annotation and taxonomic analysis of shotgun metagenomic datasets using various bioinformatic tools
- Prediction of signal sequences and protein localization and transcription factor binding sites

Other

- MS Office suite (Word, Excel, PowerPoint)
- Adobe Lightroom and quantitative imaging software
- Basic knowledge of Linux/Unix command line

LIST OF PUBLICATIONS

- **Ciric, M**, Draper, J, Waite, D, Jones, B. Characterisation of microbial gut flora of farmed New Zealand King salmon using next generation sequencing. 2018. bioRxiv preprint.
- **Ciric, M**, Ng, F, Rakonjac, J, Gagic, D. Metasecretome phage display. 2017. Springer Methods in Molecular Biology (book chapter).
- Gagic, D, **Ciric, M**, Wen, W, Ng, F., Rakonjac, J. Exploring the secretomes of microbes and microbial communities using filamentous phage display. 2016. *Frontiers in Microbiology*, 7:429.
- **Ciric, M**, Moon, CD, Leahy, SC, Creevey, CJ, Altermann, E, Attwood, GT, Rakonjac, J, Gagic, D. Metasecretome-selective phage display approach for mining the functional potential of a rumen microbial community. 2014. *BMC Genomics*, 15:356.
- Moon CD, Gagic, D, **Ciric, M**, Noel, S, Summers, EL, Atua, RML, Perry, R, Sang, C, Zhang, YL, Schofield, LR, Leahy, SC, Altermann, E, Janssen, PH, Arcus, VL, Kelly, WJ, Waghorn, GC, Rakonjac, J, Attwood, GT. Exploring rumen microbe-derived fibre-degrading activities for improving feed digestibility. 2014. *Proceedings of the 5th Australasian Dairy Science Symposium*.

REFERENCES

Available upon request.