

**PERSONAL
INFORMATION****João Heitor Colombelli Manfrão Netto****Current position:** Postdoctoral researcher at Chalmers University of Technology**Address:** Gibraltargatan 80, 412 79; Göteborg/Sweden**Phone number:** +46 0709-881793**E-mail address:** heitor@chalmers.se**Gender:** Male **Date of Birth:** 8/10/1990**Nationality:** Brazilian**Researcher identifier(s):** <https://orcid.org/0000-0001-5600-0219>**References**

- Magnus Carlquist (Lund University) – magnus.carlquist@tmb.lth.se
- Nádia Skorupa Parachin (University of Brasilia) – nadiasp@gmail.com
- Márcio José Poças Fonseca (University of Brasilia)- mpossas4@gmail.com

Education**Ph.D. (Molecular Biology): 2017-2021**

University of Brasilia (UnB)- Brasília, Brazil

- **Thesis title:** Metabolically engineered microorganisms for whole-cell biocatalysis

M.Sc (Molecular biology): 2014-2016

University of Brasilia (UnB)- Brasília, Brazil

Bachelor's degree in Biological Sciences: 2009-2013

University of Brasilia (UnB)- Brasília, Brazil

Technical skills

- DNA/RNA extraction
- PCR and RT-qPCR
- Gene insertion/disruption
- Plasmid construction
- Genetic manipulation of bacteria, yeasts and filamentous fungi
- Preparation and utilization of bench-scale bioreactors for fermentative processes (until 10 liters)
- Preparation of samples for Electron Microscopy analysis (Transmission and Scanning)
- Theoretical and practical experience in the development of CRISPR/Cas9 technology for the non-conventional yeast *Ogataea (Hansenula) polymorpha* and for the bacteria *Pseudomonas putida*

Languages

- First language: Portuguese
- English: Comprehends Well, Speaks Well, Writes Well, Reads Well

Additional information

Summary of own research

My research interest is the development of cell-factories for bio-based production of fine chemicals and the regulation of lignocellulose-degrading enzymes in filamentous fungi. My master thesis was dedicated to investigating the mechanisms involved in the regulation of hydrolases with an emphasis on epigenetics mechanisms and epigenetic modulators. During my PhD at the University of Brasilia, I worked developing metabolically engineered microorganisms for whole-cell biocatalysis.

The PhD thesis was divided into two parts: (1) Construction of metabolically engineered strains to produce Hyaluronic acid using non-conventional yeasts *Ogataea (Hansenula) polymorpha* as model and (2) Engineering *Pseudomonas putida* for production of amines from lignin monomers following the Twelve Principles of Green

Chemistry. The first part was held in Brazil under the supervision of Dra. Nádia Skorupa Parachin in the Laboratório de Engenharia de Biocatalizadores at the University of Brasilia, Brazil. The project relative to *P. putida* (bacteria) engineering aimed at the construction of biocatalysts for whole-cell transamination and it was part of my PhD exchange (CAPES/PrInt) at the Division of Applied Microbiology in Lund University, Sweden under the supervision of Dr. Magnus Carlquist.

Summary of publications

Total number of peer-reviewed publications: 6

First authorship: 4

Citation information (Google scholar, 2021.17.05): 29

h-index (Google scholar, 2020.12.07): 3

Published papers

1) Poças-Fonseca MJ, Cabral CG, **Manfrão-Netto JHC**. Epigenetic manipulation of filamentous fungi for biotechnological applications: a systematic review. *Biotechnol Lett.* 2020; 42:885–904.

Contribution: I contributed to write and design this study.

2) **Manfrão-Netto JHC**, Gomes AMV, Parachin NS. Advances in Using *Hansenula polymorpha* as Chassis for Recombinant Protein Production. *Front Bioeng Biotechnol.* 2019;7:1–13.

3) Gomes AMV, **Netto JHCM**, Carvalho LS, Parachin NS. Heterologous hyaluronic acid production in *Kluyveromyces lactis*. *Microorganisms.* 2019;7.

Contribution: I helped in the RT-qPCR experiments.

4) **Manfrão-Netto JHC**, Mello-de-Sousa TM, Mach-Aigner AR, Mach RL, Poças-Fonseca MJ. The DNA-methyltransferase inhibitor 5-aza-2-deoxycytidine affects

Humicola grisea enzyme activities and the glucose-mediated gene repression. J Basic Microbiol. 2018;58:144–53.

5) **Manfrão-Netto JHC.** et al. Evaluation of *Ogataea (Hansenula) polymorpha* for hyaluronic acid production. Microorganisms, v. 9, n. 2, p. 1–16, 2021.

Contribution: J.H.C.M.-N. constructed the strains, performed the growth curves, prepared the samples for scanning electron microscopy analysis, analyzed the data, and drafted the manuscript.

6) **Manfrão-Netto JHC.** et al. Metabolic engineering of *Pseudomonas putida* for production of vanillylamine from lignin-derived substrates. Microbial Biotechnology, 2021.

Contribution: J.H.C.M.N. contributed to the design of the study, performed the bioinformatics analysis, design and performed the experiments, analysed the data and drafted the manuscript.