



# ROBIM M. RODRIGUES, PHD

## PROFILE

Assistant Professor  
Postdoctoral Researcher  
VUB (IVTD) – IC3Rs

## EDUCATION

**Ghent University**  
BSc Chemistry  
MSc Biotechnology

**Vrije Universiteit Brussel**  
PhD Pharmaceutical Sciences

## CONTACT

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## PROJECT OUTLINE

**Investigation of adipose tissue-derived factors in the development and resolution of metabolic-associated steatohepatitis (MASH) using *in vitro* models**

**2022–2023**

Metabolic dysfunction-associated steatotic liver disease (MASLD, previously referred to as NAFLD), encompasses a series of chronic liver disorders, ranging from asymptomatic simple steatosis to life-threatening metabolic-associated steatohepatitis (MASH, previously referred to as NASH). The latest meta-analysis estimates a global MASLD prevalence in the general population of 32%, and a staggering 75% in the obese population. In the latter group, the prevalence of MASH reaches 34%, while 'only' 5 % of the general population is affected. There are currently no drugs available to treat MASH. This is partially due to an incomplete understanding of the underlying (multifactorial) mechanisms driving the progression of relative harmless simple steatosis to MASH. Adipose tissue (AT) enlargement, dysregulation and inflammation during obesity are strongly associated with the progression and severity of MASLD. Yet, the mechanisms behind the interplay between AT and the liver are not fully elucidated. In this project we aim to (i) elucidate adipocyte-derived (epigenetic) factors that contribute to steatohepatitis, and (ii) investigate whether those factors could represent novel anti-MASH therapeutic targets. To this end we will develop and use a battery of human-based (stem) cell-based *in vitro* systems that can mimic the AT and hepatic microenvironment in healthy and disease conditions.

## RESEARCH OUTPUT:

**H-index: 23** <https://scholar.google.co.uk/citations?user=LMo2xmgAAAAJ&hl=en>

- # publications as 1st author: 12
- # publications as senior author: 11
- # publications as co-author: 38

Peer reviewed publications (2022-2023):

- (1) Buyl, K., Vrints, M., Fernando, R., Desmae, T., Van Eeckhoutte, T., Jans, M., Van Der Schueren, J., Boeckmans, J., **Rodrigues, R.M.**, De Boe, V., Rogiers, V., De Kock J., Beirinckx F., Vanhaecke T. (2023) Human skin stem cell-derived hepatic cells as *in vitro* drug discovery model for insulin-driven *de novo* lipogenesis. *European Journal of Pharmacology*: 175989. (e-pub ahead of printing) (IF<sub>2022</sub> 5.0)
- (2) Boeckmans, J., Gatzios, A., Schattenberg, J.M, **Rodrigues, R.M.**, Rogiers, V. and Vanhaecke, T. (2023) Pharmacogenetics in early drug development for non-alcoholic steatohepatitis: missed chances and future opportunities. *Archives of Toxicology*: 1-3. (e-pub ahead of printing) (IF<sub>2022</sub> 6.1)
- (3) Yang, L., Hao, Y., Boeckmans, J., **Rodrigues, R.M.\***, & He, Y.\* (2023). Immune cells and their derived microRNA-enriched extracellular vesicles in nonalcoholic fatty liver diseases: Novel therapeutic targets. *Pharmacology & Therapeutics*, 108353. (IF<sub>2022</sub> 13.5) (\*: corresponding author)
- (4) Wiczorek, E., Wolniakowska, A., Roszak, J., **Rodrigues, R. M.**, Vanhaecke, T., Reszka, E. (2023). Gene-occupation interactions: a review of the literature on bladder and prostate cancer. *Medycyna Pracy*, 74(1). (IF<sub>2022</sub> 1.0)
- (5) Ji, L., Li, Q., He, Y., Zhang, X., Zhou, Z., Gao, Y., Fang, M., Yu, Z., **Rodrigues, R.M.\***, Yueqiu Gao\*, Man Li\*. (2022). Therapeutic potential of traditional Chinese medicine for the treatment of NAFLD: a promising drug *Potentilla discolor* Bunge. *Acta pharmaceutica Sinica B*, 12(9), 3529-3547 (IF<sub>2022</sub> 14.5) (\*: corresponding author)

- (6) Boeckmans J., Gatzios A., Heymans A., Rombaut M., Rogiers V., De Kock J., Vanhaecke T., **Rodrigues RM.** (2022). Transcriptomics Reveals Discordant Lipid Metabolism Effects between In Vitro Models Exposed to Elafibranor and Liver Samples of NAFLD Patients after Bariatric Surgery. *Cells*, 11(5). (IF<sub>2022</sub> 6.0)
- (7) Boeckmans, J., Gatzios, A., Schattenberg, J. M., Koek, G. H., **Rodrigues, RM.**, Vanhaecke, T. PNPLA3 I148M and response to treatment for hepatic steatosis. A systematic review. (2022) *Liver international*, 43 (5), 975-988 (IF<sub>2022</sub> 6.7)
- (8) Wang, X., Kim, S. J., Guan, Y., Parker, R., **Rodrigues, RM.**, Feng, D, Lu SC, Gao B. (2022) Deletion of adipocyte prohibitin 1 exacerbates high-fat diet-induced steatosis but not liver inflammation and fibrosis. *Hepatology communications*, 6 (12), 3335-3348 (IF<sub>2022</sub> 5.1)

Bookchapter:

- (1) **Rodrigues, R. M.**, Stinckens, M., Ates, G., & Vanhaecke, T. (2023). Neutral Red Uptake Assay to Assess Cytotoxicity In Vitro. In *Cell Viability Assays: Methods and Protocols* (pp. 237-245). New York, NY: Springer US.

## EDUCATIONAL ASSIGNMENTS (2022-2023)

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- o Invited/guest lecture: *Empirische cyclus in de praktijk, wetenschappelijke lijn deel 1*; BSc BMS, VUB (2021-2023)
- o Teaching assignment: Elective Subject - *Alcohol: mechanisms behind its effects on the body*; MSc Pharmacy, VUB (2023)
- o Training course (organizer) "Best practices for hepatic *in vitro* models." - TWINALT - *Twining Towards Excellence In Alternative Methods For Toxicity Assessment* (2022)
- o Promotor/supervisor master students (MSc Pharmacy, MSc Biomedical Sciences) (2022 - 2023)

## AWARDS (2023)

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- o Benedict J. **Latteri Memorial Award** Excellence in Scientific Publication - National Institute on Alcohol Abuse and Alcoholism (**NIAAA**) (USA, **2023**)

## COMMISSIONS OF TRUST (2022-2023)

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- o **Reviewer of grant applications** Center for Alternatives to Animal Testing (CAAT), Johns Hopkins University, Bloomberg School of Public Health, Baltimore, USA. (2017-2023).
- o **Associate Editor** 'Frontiers in Pharmacology' specialty section 'Gastrointestinal and Hepatic Pharmacology' (2023)
- o **Member of Editorial Board** 'eGastroenterology' (2023)
- o **Member of council** Pharmaceutical and Pharmacological Sciences (FARM) (since 2022)
- o *Ad hoc jury member PhD and MSc theses* (VUB)
- o *Ad hoc reviewer* for multiple scientific journals, including *Stem Cells and Development*, *Frontiers in Pharmacology*, *PlosOne*, *Drug and Chemical Toxicology*, *BioMed Research International*, *Assay and Drug Development Technologies*, *Biotechniques*, *Journal of Controlled Release*, *Journal of Cellular Biochemistry*, *Journal of Cellular and Molecular Medicine*, ...