

## Master projects in RNA biology

The Vinther Lab studies RNA based mechanisms involved in the control of cellular processes. In particular, we are interested in a novel type of RNA modification on the 5' end of RNA and recently we discovered that Hepatitis C Virus (HCV) RNA is 5'FAD capped and thereby able to avoid detection by the immune system<sup>1</sup>. RNA capping with cellular metabolites such as FAD and NAD is likely to play many other important roles, especially for viruses and bacteria, which we want to investigate in the coming years.

Currently, we focus answering the following questions:

- Which other viruses use 5'-metabolite RNA capping?
- Which types of 5'-metabolite RNA capping take place in bacteria and what is its function?
- What is the molecular mechanism of HCV RNA 5'FAD capping?
- Can 5'-metabolite capping of viral RNAs be used as a target for antiviral drugs?

We answer these questions using molecular and biochemical methods, such as protein purification, enzymatic assays, RNA gels as well as sequencing-based methods.

Master and bachelor projects are available within the topics listed above. If you are interested in doing a project in Vinther Lab, contact Associate Professor Jeppe Vinther on [jvinther@bio.ku.dk](mailto:jvinther@bio.ku.dk) to hear more about the current project possibilities.

See more on the lab homepage: <http://vintherlab.dk/>

Reference:

- 1 Sherwood, A. V. *et al.* Hepatitis C virus RNA is 5'-capped with flavin adenine dinucleotide. *Nature* **619**, 811-818 (2023). <https://doi.org/10.1038/s41586-023-06301-3>, <https://rdcu.be/df8p5>