

Following a compound from start to finish

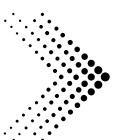
MALIN OTMANI - JULY 11, 2022



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Anders Findsen likes to be part of the different R&D aspects of an up-and-coming dynamic biotech company. As Research Scientist at NMD Pharma he gets to follow a compound from the beginning to hopefully going into the clinic in the end.

NMD Pharma is a small private biotech company with approximately 30 employees, located in Aarhus. It was founded in 2015 and originates from more than 15 years of research experience on muscle physiology at Aarhus University. The company's main focus is to develop treatments for neuromuscular diseases by improving the transmission between muscle and nerves.





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In their experimental platform NMD focuses on ion channel function and electrophysiology of skeletal muscle. The company develops small molecule inhibitors of skeletal muscle-specific C1C-1 ion channels that have a promising therapeutic potential in a range of neuromuscular diseases, for example myasthenia gravis and sarcopenia. It is currently running phase II studies on myasthenia gravis patients with their drug candidate NMD670.

Anders Findsen, Research Scientist, is primarily responsible for the screening at the company. He determines where in the screening cascade a compound should be tested and what to do next if a compound shows effects in one of the screening steps.

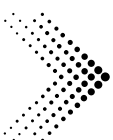
“I am also taking part in the screening as I work in the lab, so I am one of the first to have new compounds in my hands and test them,” he describes.

Three days in the lab, two at the office

Anders workweek usually comprises three days in the lab and two days at the office. When he is in the lab he generally starts the day by preparing the experimental setups together with his colleagues and making buffer solutions for the muscles to be placed in during experiments. They then euthanize the rats and dissect out the muscles for the experiments.

“A compound is tested at different concentrations to determine its effect and potency and an EC₅₀ [half maximal effective concentration] curve can be made from one experiment,” he explains.

When the experiments are done he analyzes the data and uploads it to the company’s chemists. “Furthermore, there are also reports and papers that are being written during the day,” he adds.



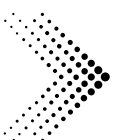
At the moment Anders and his colleagues are screening a lot of new compounds, to find backup compounds for their compounds in the clinic. “But we are also working on different animal disease models to be able to determine possible biomarkers and to gain knowledge about whether our compound could have an effect on that specific disease,” he says.

During the first wave of the COVID-19 pandemic, Anders and his colleagues had to stay at home and could not perform experiments. This was mainly a consequence of having their labs and offices at Aarhus University, and they had to stick to the university’s regulations and guidelines.

“During this time we did however begin to set up equipment at INCUBA Skejby Science Park, so we were able to run some experiments, and at the end of the year we made the final move there. We were then able to decide on our own regulations, for example whether we should stay at home or be less people at work. During the second wave we had a chance to maintain function in the labs and make the experiments needed to reach our goals. We did not experience any economic change during these periods, as we were able to maintain some production during the tough times,” says Anders.



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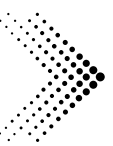
Opportunities to gain a broader knowledge

The best part of his job, according to Anders, is that he has a great opportunity to take part in many different aspects of a biotech company.

□ “So, all in all, it is a great pleasure to follow a compound through the different steps, from when it is made by our chemists, screened, moved forward to pharmacology, modified and maybe going into the clinic in the end.”

“When I am doing experiments, I am working with the biology and the physiology of the animals. At the same time I am collaborating with our chemists in decision making on new compounds, so there I get to know more about the chemistry and also IP. In addition, the screening team (which I am part of) has a close collaboration with the pharmacology team that works with live animals and animal disease models, and we have productive discussions on what to do with compounds that are hits in the screening and have to move into pharmacology to be tested further. So, all in all, it is a great pleasure to follow a compound through the different steps, from when it is made by our chemists, screened, moved forward to pharmacology, modified and maybe going into the clinic in the end,” he says.

Challenges include sometimes needing to operate quite fast, since he and his colleagues can receive many compounds at one time. “In addition, we are a company that is growing a lot at the moment, and it can sometimes be difficult to have an overview of what goes on in the different departments,” he says. “However, generally in our company there is not much distance between the different departments (pharmacology, development and medicinal chemistry), which makes it easier to have discussions on different tasks.”

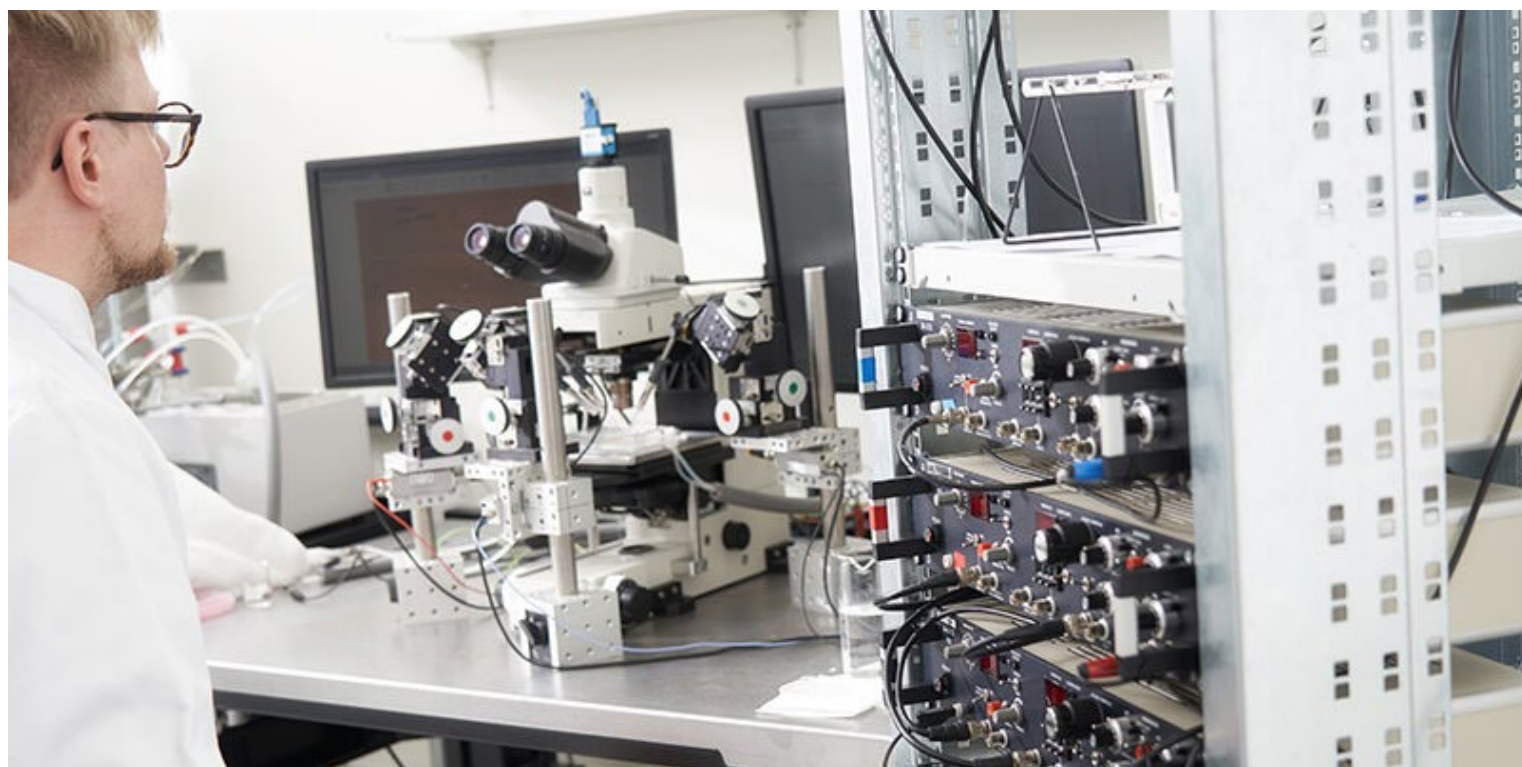


□ “I can become a specialist within the field of electrophysiology. Furthermore, since we are in touch with many different areas, such as chemistry, clinic, health and patenting, I have a chance to gain a broader knowledge within biotechnology and life sciences.”

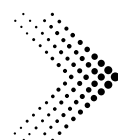
NMD Pharma offers many opportunities, continues Anders. “I can become a specialist within the field of electrophysiology. Furthermore, since we are in touch with many different areas, such as chemistry, clinic, health and patenting, I have a chance to gain a broader knowledge within biotechnology and life sciences. This knowledge can be useful in the future if I want to have another position within the company or at another biotech company.”

More and more biotech startups are also locating their businesses to the Aarhus and Middle Jutland area, notes Anders.

“Previously, a lot of biotech companies have been located, and felt that they had to be located, in the eastern parts (Zealand), where major companies like Lundbeck, LEO Pharma and Novo Nordisk are established. Many of the new companies originate from the university and are based on a strong research tradition, which is an important fundament of the companies,” he says.



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How drugs work and how to improve the function of them

Growing up, Anders always had a great interest in biology and life science. When he was younger he wanted to become a veterinarian but his grades were not good enough so he started studying biology instead. He obtained his Masters's degree from Aarhus University in 2011 and then earned a PhD in insect physiology in 2015. "Actually the CEO of NMD Pharma, Thomas Holm Pedersen, was my co-supervisor," he says.

After finishing his PhD Anders wanted to "get out of the university world" and worked for two years as a high school teacher, teaching biology and natural sciences, before he was hired by NMD Pharma.

Over the years Anders says that he has gained more and more interest in physiology, and especially animal physiology.

□ "Many of these channels can be affected with different drugs, and since NMD Pharma was in its startup phase during my PhD that sparked my interest about how drugs work and how to improve the function of them."

"That interest became more and more specifically muscle physiology and especially the functions of different channels in the muscle cells. Many of these channels can be affected with different drugs, and since NMD Pharma was in its startup phase during my PhD that sparked my interest about how drugs work and how to improve the function of them," he says.

Anders says that in life sciences in general there is a trend toward genome editing.

"It is a very interesting area which will probably grow bigger during the next couple of years. With that said, what we do within our field is still important. We are not going to be curative with the treatments we have, but we can give the patients a better and longer life with our treatment, which is an important supplement to the genome-based treatments. Many patients are not able to get the genome-based treatments, mainly because they are of a certain age, so we still need to develop drugs to help them."
