Interview

Developing A Novel Disease-Modifying Therapeutic for the Treatment of Alzheimer's Disease

Tord Labuda, Ph.D., CEO of Alzinova

Headquartered in Mölndal, Sweden, Alzinova AB is a clinical-stage biopharma company. It is dedicated to developing both active and passive immunotherapies to treat Alzheimer's disease through an innovative technology platform that stabilizes oligomers and enables the development of disease-modifying therapeutics. We spoke with Dr. Labuda, CEO of Alzinova, to find out more about the company's innovative technology platform and their ongoing programs that leverage it.

Could you please provide some background on the establishment of Alzinova?

Labuda: Alzinova is a Swedish biotech company that was founded in 2011 as a spin out from the University of Gothenburg. Our founder, Dr. Anders Sandberg, serves as our CSO. Our work is based on the discoveries he made together with his professor during his Ph.D. studies.

In these studies, they, among others, discovered that the most toxic part of the amyloid beta pathway is oligomers. There is a type of oligomer that seems to be the most toxic for the neurons. The problem with these oligomers, however, is that, in addition to being very toxic, they are also unstable and sparse in the brain. So, Dr. Sandberg took on the enormous challenge of figuring out how to stabilize them in a form where they can be used for drug discovery and development.

What is the key difference between ALZ-101's oligomer-specific approach and other amyloid-targeting therapies? Please share with us the advantages of using an oligomer-specific approach.

Labuda: First, there are currently two approved treatments for Alzheimer's disease that are disease-modifying on the market, Kisunla from Lilly and Leqembi from Biogen.

Their common approach is to primarily target plaques, as the antibodies they infuse or induce bind to the N-terminal part of the amyloid beta peptide, and bind to all forms of amyloid beta 42. But the issue with that is that the plaques are very abundant in the brain, so most of the antibodies that will enter through the blood-brain barrier will bind to the plaques.

For the last 10 to 15 years, it has been widely known that oligomers are what is most toxic to the neurons. The problem has been to stabilize them, and we have succeeded there. So, what differentiates our treatment is that it does not target plaques, fibrils, protofibrils, or monomers. We are, instead, specifically targeting the toxic oligomers.

We are doing this by targeting a different part of the peptide. Instead of the N-terminal part, we are targeting something called the central loop. The advantage of this is that, since the oligomers are very sparse, we do not have an absorbance from plaques of the antibodies that we get through the blood-brain barrier. They will just bind to these oligomers, and nothing else.

Another advantage that sets our approach apart is that it has active immunization. While the other treatments use passive immunizations, ours triggers the body's immune response to generate the antibodies by using active immunization or, if you will, a vaccine approach.

In addition, our treatment method means that it can be delivered via a simple intramuscular injection

like any other vaccine. It will only require three to four doses per year, as opposed to the biweekly infusions that other treatments would require.

One more thing worth mentioning is that, in our studies, there were no indications that we would have a limitation in the patient population. The currently available treatments have limitations and cannot be used to treat patients that have ApoE4 homozygotes, which has been a challenge for them. We do not have that, and feel confident that we will be able to treat the whole population.

Since we are working with a vaccine approach for the first round we are currently doing, we are treating patients that already have developed Alzheimer's disease. But, considering where the field has recently been going with looking at patients that will develop the disease in time, we believe that we will have a huge advantage with our vaccine.

Your planned Phase II study includes a cognitive test as a primary endpoint. What specific cognitive changes or improvements are you hoping to see in patients, and over what timeframe?

Labuda: We plan to start the Phase II study by the end of the year. We will treat 240 patients in three arms, with one placebo and two active arms. We believe that the study will last for over three years, with a 12-to-16-month recruitment period and then a treatment period of about two years.

We will have ADCOMS as the primary readout. The change that we hope to see, which we have already received indications of in our Phase 1b study, is that our treatment is able to halt the progression of the disease.

Tord Labuda, Ph.D.

ALZ-101 showed promising results in its Phase Ib trial. How does that position your company in the highly competitive landscape of Alzheimer's drug development?

Labuda: I think that most companies have their own theory about how to pursue drug development for the treatment of Alzheimer's disease now. I believe that many are targeting the plaques. There is also a lot of focus on targeting the tau pathway.

We have a different approach, as we are focusing on the toxic oligomer. We believe that it will be the most effective one going forward, but nobody knows for sure yet. The future will tell.

I think there has been some disappointment in the results for plaque treatments. But there is very little clinical data on the tau pathway, so it remains to be seen if that is effective.

We have very little competition in the space. There is one other company, but they are behind us as far as we know. There is also limited competition in in the vaccine space.

Please explain your partnership strategy. Are you currently seeking a large pharma partner, and if so, what kind of partner would be the ideal fit for you with ALZ-101?

Labuda: That is our primary goal here. I believe it is something that will be crucial for us to be successful with this Phase II study. Obviously, running a study in 240 patients is quite costly, so it would be beneficial for us to have a partner.

We are looking for a partner either globally, regionally, or locally. We could do any of the three. The partner we are looking for would preferably be someone with a strong interest and experience in the CNS field, and Alzheimer's disease as well. We would love to find someone that shares our vision of an active immunization approach or a vaccine approach.

There are quite a few companies in this space. We are in discussions with several, and we are hoping that we will find somebody that will be a good fit to work with us going forward.

Profiles

Tord Labuda, Ph.D.

Dr. Labuda has served as the CEO of Alzinova since 2024. He has over 15 years of extensive experience in senior leadership roles within the pharmaceutical industry. His expertise encompasses the entire pharmaceutical value chain, from initial discovery to regulatory approval and product launch. Prior to Alzinova, Dr. Labuda held various high-level positions at LEO Pharma, including Vice President & Head of Global Clinical Development, President and Japan Representative Director and Vice President of R&D Asia-Pacific. He received a Master of Science in Molecular Biology and subsequent Ph.D. in Tumor Immunology from Lund University.