

Healthcare industry BW

TuCADD: Coaching for early drug candidates

The University of Tübingen is optimising its drug development pipeline. The TuCADD consortium provides professional help to people who want to take potential drug candidates to clinical application. The coaching involves assistance with the entire phase I drug development phase from industry experts.



Prof. Dr. Stefan Laufer is a pharmacist. He has been head of TuCADD since 2015 and chairman of the German Pharmaceutical Society (DPhG) since early 2016. © University of Tübingen

With the establishment of the Tübingen Center for Academic Drug Discovery (TuCADD), the University of Tübingen is giving its early drug development pipeline both structure and profile.

“The centre brings together different early drug discovery approaches. Our aim is to translate promising drug candidates into clinical application. We offer support for projects carried out at the University and the University Hospital in Tübingen rather than directly supporting specific individuals,” explains Prof. Dr. Stefan Laufer who has been director of the Department of Pharmaceutical Chemistry at the University of Tübingen since 1999, and head of TuCADD since September 2015.

There is high demand for early drug candidates since increasing cost pressure in the pharmaceutical industry has led to a worldwide reduction in early research activities among drug manufacturers. Large pharmaceutical companies are increasingly tending to work in cooperation with small, specialised start-ups and academic institutions. Both parties benefit from this cooperation. The large pharmaceutical companies gain quicker access to research results and thus to new and potentially more effective drug candidates, and academic researchers benefit from the alliance in terms of idea transfer, industrial support and new funding opportunities. And last but not least, up-and-coming researchers are able to make contact more easily with industrial networks, thus promoting mutual understanding between rather different value systems.

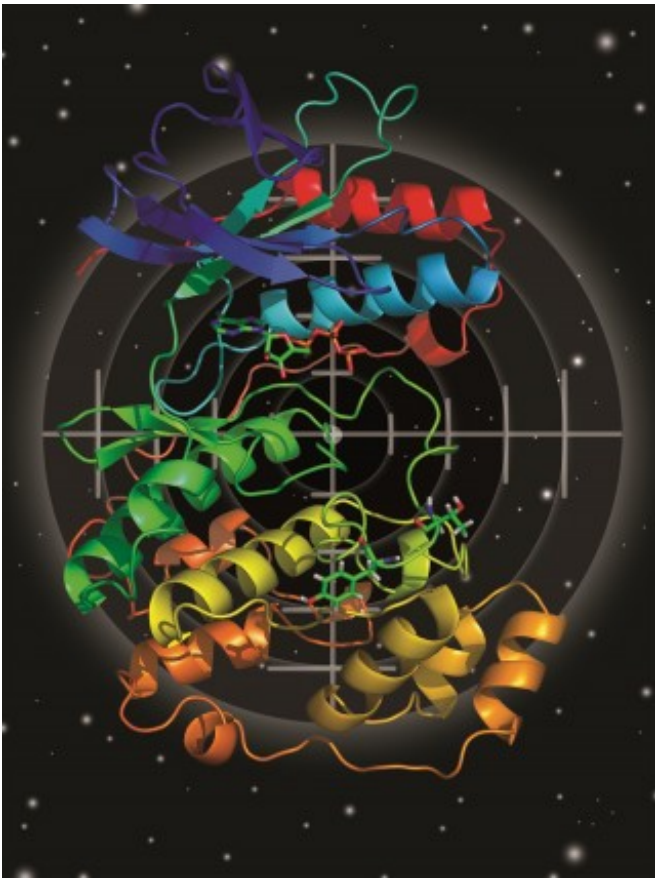
American universities have rapidly reacted to these changes in how drugs are developed. In the USA, a university network aiming to translate drug candidates into development candidates has developed within just a decade. This has led to the establishment of the international Academic Drug Discovery Consortium (ADDC) which to date has around 150 members. Vanderbilt University in Nashville and the University of North Carolina in Chapel Hill have been part of the consortium from the very start. The two universities have been in contact with the research groups from Tübingen for many years. TuCADD is one of three German consortia that have been accepted into the ADDC.

Expansion and professionalisation of the academic drug pipeline

TuCADD is not restricted to specific medical areas of indication. “Our projects can involve any of the specialist fields present in Tübingen. We are currently supporting ten projects, five of which deal with drugs for cancer treatment, three for treating infections and one each for treating cardiovascular diseases and application in regenerative medicine,” says Prof. Dr. Lars Zender from the Division of Molecular Oncology of Solid Tumours in the Department of Internal Medicine I at Tübingen University, and founder and board member of TuCADD.

The Tübingen approach to supporting projects through TuCADD includes a kind of drug development master plan that starts with project application. “The idea has to be new and interesting. We expect the project to have a solid scientific basis and lead to a first-class publication in high-ranking journals as a sign that the work being done has achieved scientific recognition, so to speak. Moreover, the project must involve more than a basic drug action mechanism and must be focused on a concrete, active substance,” said Laufer on the criteria required by TuCADD. TuCADD's board of directors consists of experienced researchers and clinicians from Tübingen University and the University Hospital of Tübingen as well as external experts who evaluate the project's suitability for a translational approach.

If applicants meet all the conditions, TuCADD will take the project under its wing. This means that the scientists involved will receive constant advice, not just on scientific issues, but also on suitable financing options. The coaches are leading academics, clinicians and industry experts.



Protein kinases are enzymes that are involved, inter alia, in signal processes in the cell, and represent important targets for new pharmaceutical agents. They are therefore becoming increasingly popular among researchers working on early drug discovery. © Stefan Laufer, University of Tübingen

The exact composition of the team depends on the project. “We have a range of contacts across the pharmaceutical sector, and are able to respond to requirements flexibly and bring on board the best in the respective fields,” said Laufer.

The goal: “proof of concept“

The coaching offered by TuCADD follows the principle “die early, die cheap”. This means that the advisory team starts off by defining the critical aspects that ideally need to be dealt with first. In the field of drug development, this is referred to as the “fail first” principle. If the proposed approach does not live up to expectations, development is stopped, thus avoiding further expenditure. If the drug candidate is promising, the TuCADD team discusses how to move the project forward as quickly as possible. The goal of all TuCADD projects is to successfully conclude phase I of drug development. “In the best case scenario, our work is done when the project partners have provided ‘proof of concept’,” says Laufer. The project partners themselves then have to decide how they wish to continue – whether they want to set up a start-up company or licence the potential active ingredient to a pharmaceutical company. “At this stage, our advisory role is over, but we provide researchers with relevant contacts among technology and business developers,” said Laufer.

According to Laufer, the biggest challenge of the entire translation process is to overcome the differences in the values of academic research and industry. “Although only a handful of public funding options (e.g. GO-Bio or the BMBF’s VIP+-programme) are available for early-phase

projects, I do not think that money is the major issue in this field, but rather the way researchers think. Getting results published is one thing, but researchers have to decide when to publish what. In drug development, all experiments have to be validated and all results resilient and verifiable. And this usually continues beyond the first publication. Validation is therefore a key issue for us and determines whether or not the project will be supported by TuCADD.”



Article

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No new drugs to be placed on the market without clinical trials



Knowledge and technology transfer as a social responsibility

funding

network partners

pharma

basic
research

active pharmaceutical
ingredient

drug approval