

Fight against cancer → Small molecules – PhenoFrag

What started in August 2014 with a product list of just 20 molecules now has evolved into a real success story. We are talking about the so called Payloads. These are highly toxic molecules which are linked to the antibodies to kill cancer cells target-oriented. Cfm Oskar Tropitzsch from Marktredwitz, a small Bavarian town supplies rare and utmost novel substances for research (<http://www.cfmot.de/de/adc>). If a molecule does not exist, it „simply“ will be produced. There is (nearly) no „that doesn't work“ in Upper Franconia.

Ideas from Upper Franconia for Cancer Medicine of the future

Besides supplying with research reagents Cfm Oskar Tropitzsch provides its customers and partners far more assistance. Through an global network, even the most complex projects are being realized.

Due to financial support of Bavarian government a new and trendsetting project was realized. **PhenoFrag!** Together with the bioinformatics specialists of *BioVariance* from Waldsassen we developed a software platform which enables us to predict possible side effects of molecules. This is a pioneering novelty which makes it possible to select the right molecule for nearly every target. Moreover one gets suggestions for potentially better suitable toxins with an up to now unknown effect. Some parameters that have to be considered: DNA, RNA, proteins, interactions, history of treatment, epigenetic profile of different patients and of course interactions with targets, off-targets and metabolites, just to mention some issues. How complex these contexts are is visualized in the following figure for Drug-Target Network in a Nature publication (http://www.nature.com/nbt/journal/v25/n10/fig_tab/nbt1338_F2.html). Without today's computer technology and without high speed internet such a development would not have happened.

Cfm Oskar Tropitzsch offers the **PhenoFrag** based concept now to its customers of life science, pharmaceutical and biotech research - in order to achieve a faster and more secured drug development. A comparison to a cell culture screening project which was performed with financial support of Cfm confirmed the computer based concept. But not just only this: Additional possible targets of the tested molecules were discovered. In our opinion the PhenoFrag concept is the next step towards a personalized medicine.

Due to our new, in 2014 introduced product range „ADC Payloads“, we were able to strengthen and expand our company's sustainability. The affiliated company Iris-Biotech GmbH which produces peptide linkers on customers' request benefitted from this cooperation as well.