"It's been really important to have the ability to document chemistry and assay data, and to have all of our data centrally managed and tracked. This is particularly important when looking to write patent applications, and when considering the potential to progress to human studies."

- Dr. Dominik Albat, Head of Chemistry

Customer Case Study

How Prosion Therapeutics Uses CDD Vault to Pioneer ProM Drug Discovery

With its cross-disciplinary approach and modern data infrastructure, Prosion Therapeutics is tackling one of biology's hardest challenges: turning the undruggable into the actionable.

A spin-out from the University of Cologne and the Leibniz-Forschungsinstitut für Molekulare Pharmakologie in Berlin, Prosion is redefining the boundaries of small-molecule drug discovery. Its mission is to make previously "undruggable" protein-protein interactions (PPIs) druggable. At the core of this effort is CDD Vault, which Prosion has relied on since its earliest research days to capture, track, and share chemistry and biology data across its Cologne and Berlin sites.

Turning Protein-Protein Interactions into Viable Targets

Protein-protein interactions are essential to cell signaling and biological function, but those involving proline-rich motifs (PRMs) have long been considered undruggable. These motifs form left-handed Polyproline II helices, structures that small molecules have struggled to mimic. Prosion's breakthrough lies in the creation of ProMs, the first and only mimetics of this left-handed Polyproline II helix. Established in 2020 with support from the

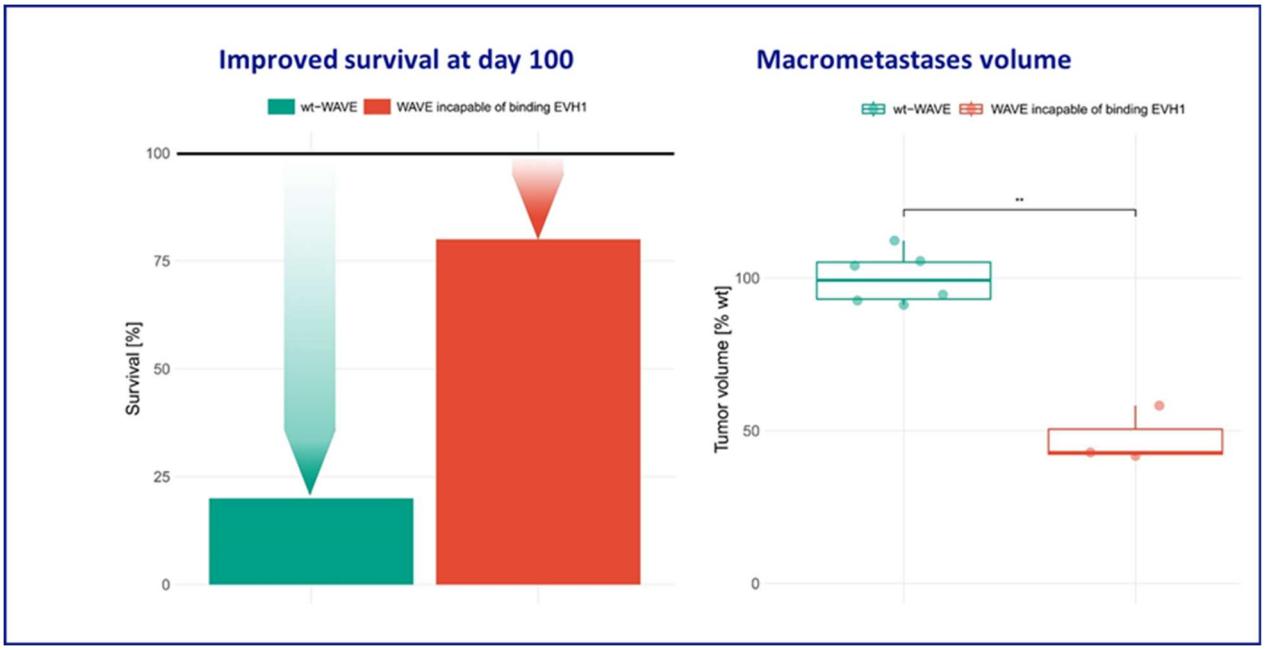

Figure 1:Target validation assay in mice inoculated with breast cancer cells. Blocking the PRM-mediated interaction between ENA/VASP-EVH1 and WAVE2 significantly improves survival outcomes. In orthotopic breast cancer mouse models, the overall survival rate was markedly higher in the group with mutant WAVE cells (mt) compared to the control group (wt): 80% vs 20% survival at 100 days. Post-mortem analysis of macrometastases (MDA-MB-231) showed that WAVE-mutant mice had approximately half the tumor volume of control mice, corresponding to a fourfold increase in overall survival. Mice inoculated with wild-type breast cancer cells exhibited poor survival and extensive metastasis, whereas those injected with cells harboring WAVE mutations that disrupt EVH1 binding displayed significantly improved survival and reduced tumor spread. These findings validate the PRM-based WAVE–EVH1 interaction as a promising therapeutic target.

German Ministry for Economics and Technology, the company focuses on PRM-mediated PPIs implicated in cancer, inflammation, and central nervous system disorders. Its lead project, PST010, targets the Ena/VASP protein family, a driver of cancer metastasis.

"CDD Vault saves us enormous time. If we need to resynthesize a compound, we simply duplicate the relevant ELN entry. Everything is there."

- Dr. Dominik Albat, Head of Chemistry

From Idea to Proof of Concept

Using CDD Vault as its central ELN and data management system, Prosion has built a fully traceable discovery workflow that links compound synthesis, assay data, and analytical results. This real-time integration has been key to rapid iteration and reproducibility.
Head of Chemistry Dr. Dominik Albat explained, "It's been really important to have the ability to document chemistry and assay data, and to have all of our data centrally managed and tracked. This is particularly important when looking to write patent applications, and when considering the potential to progress to human studies."

In 2025, Prosion published a proof-of-concept study in *PNAS* demonstrating that its lead ProM

inhibitor selectively targets the Ena/VASP-WAVE2 interaction, reducing cell motility and metastasis in triple-negative breast cancer models. The Vault's real-time access enabled the team to track iterative assays and structural refinements leading to publication.

Collaboration Across Cities and Disciplines

Prosion's chemistry team operates at the University of Cologne, while its biochemistry team works at the Berlin-Buch science campus. With CDD Vault, both teams maintain synchronized workflows. Chemists upload synthesis and analytical data that biologists can immediately test, shortening iteration cycles and strengthening data integrity.

The platform also serves as a shared scientific memory, supporting collaboration and knowledge continuity as the company grows. "Even across two cities, CDD Vault keeps our chemistry and biochemistry connected," Albat said. "It's easy to trace every step, from design to in vivo testing."

Prosion's integrated use of the ELN extends beyond data recording. The Vault manages equipment data from HPLCs to freeze dryers, tracks compound inventories, and links analytical results to specific notebook entries. Automated calculations, such as IC_{50} values, are generated directly within the system, streamlining analysis and eliminating manual lookups.

Scaling Innovation with a Unified Platform

Before spinning out, synthesizing even one or two PRM inhibitors could take a year. Today, with a team of 11 scientists, Prosion can produce and test hundreds of compounds annually. The Vault's templates and searchable structure make it easy to replicate experiments, standardize protocols, and maintain complete data traceability.

"CDD Vault saves us enormous time," Albat said. "If we need to resynthesize a compound, we simply duplicate the relevant ELN entry. Everything is there."

Toward a New Therapeutic Class

Prosion's research now spans multiple oncology programs, with two additional PRM-targeting projects in development. The company also envisions extending its platform to cardiovascular, neurodegenerative, and infectious disease targets.

"For the PNAS publication we carried out a lot of biological assays and investigated mutations to demonstrate proof of concept," said Head of Biochemistry Dr. Matthias Müller. "Our work demonstrated that loss of actin polymerization in the lamellipodia of migrating cells results in loss of chemotaxis, and this has an effect on extravasation of these cancer cells to the circulation, and thus also to the formation of metastases. We showed that the interaction is a driver for metastasis, but also that it represents a real target, and that the target was druggable."

Peyton Jones added, "From a scientific perspective such promising results reinforce

why many of us go into research—to take a concept, demonstrate validity of that concept, and potentially convert that concept into tangible treatments that could save people's lives."

Through its partnership with CDD, Prosion has built a transparent, efficient, and deeply collaborative research environment. Together, they exemplify how technology and innovation can unite to transform once-impossible targets into tomorrow's medicines.

About Collaborative Drug Discovery

Collaborative Drug Discovery provides a modern approach to drug discovery informatics that is trusted globally by thousands of leading researchers. Our CDD Vault is a hosted informatics platform that securely manages both private and external biological and chemical data. It provides core functionality, including chemical registration, structure-activity relationship, inventory, visualization, and electronic lab notebook capabilities. For more information, visit us at www.collaborativedrug.com.

Benefits of Using CDD Vault for Prosion

Centralized, Real-Time Data Management:
Unifies chemistry and biology data across teams with instant access and full traceability.

Accelerated R&D Efficiency:
Enables rapid synthesis, testing, and iteration: scaling from a few to hundreds of compounds per year.

Seamless Cross-Site Collaboration:
Connects Cologne and Berlin teams in a synchronized workflow

Figure 2: Prosion team group photo (December 2024), Credit: Dr. Slim Chiha