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How AI is Shaping the Future of Biocontrol

October 22nd ABIM 2025

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Chief Data Science Officer

AI-powered Krisalix™ Micropeptide Discovery Platform

Micropep and Krisalix™

Krisalix™ AMP: Cut novel biofungicide development by 50%

Krisalix™ PPI: to unlock new Mechanism of Actions

Conclusions

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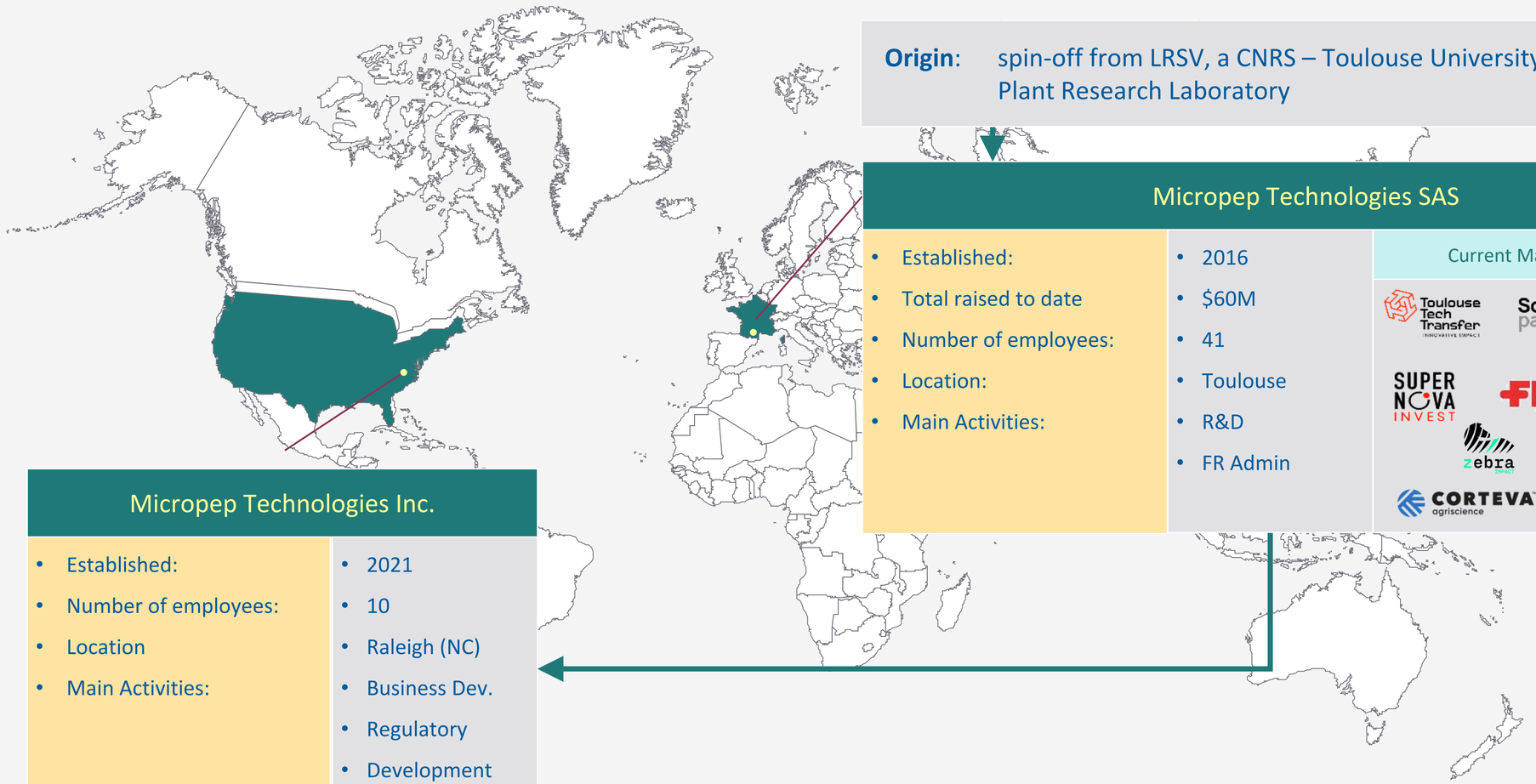
Sustainable biochemical crop protection solutions powered by breakthrough micropeptide active ingredients



Origin: spin-off from LRSV, a CNRS – Toulouse University Plant Research Laboratory

Micropep Technologies SAS

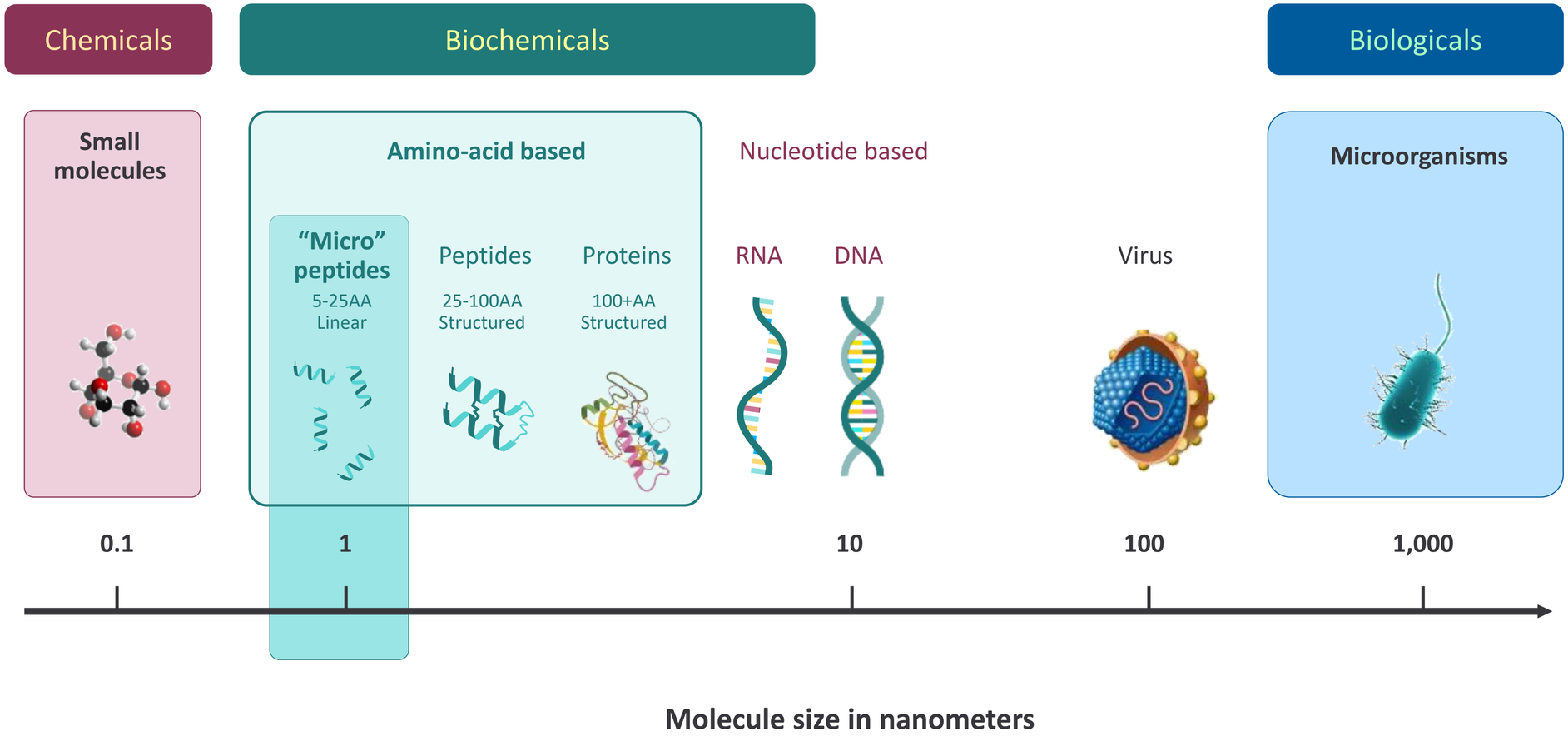
• Established:	• 2016
• Total raised to date	• $60M
• Number of employees:	• 41
• Location:	• Toulouse
• Main Activities:	• R&D • FR Admin

Current Main Shareholders

Micropep Technologies Inc.

• Established:	• 2021
• Number of employees:	• 10
• Location	• Raleigh (NC)
• Main Activities:	• Business Dev. • Regulatory • Development

We are the experts in a novel class of active ingredients: micropeptides



Sources: 1.ctct Resistance Committee, 2.Environmental Health, 3.Philips McDougall

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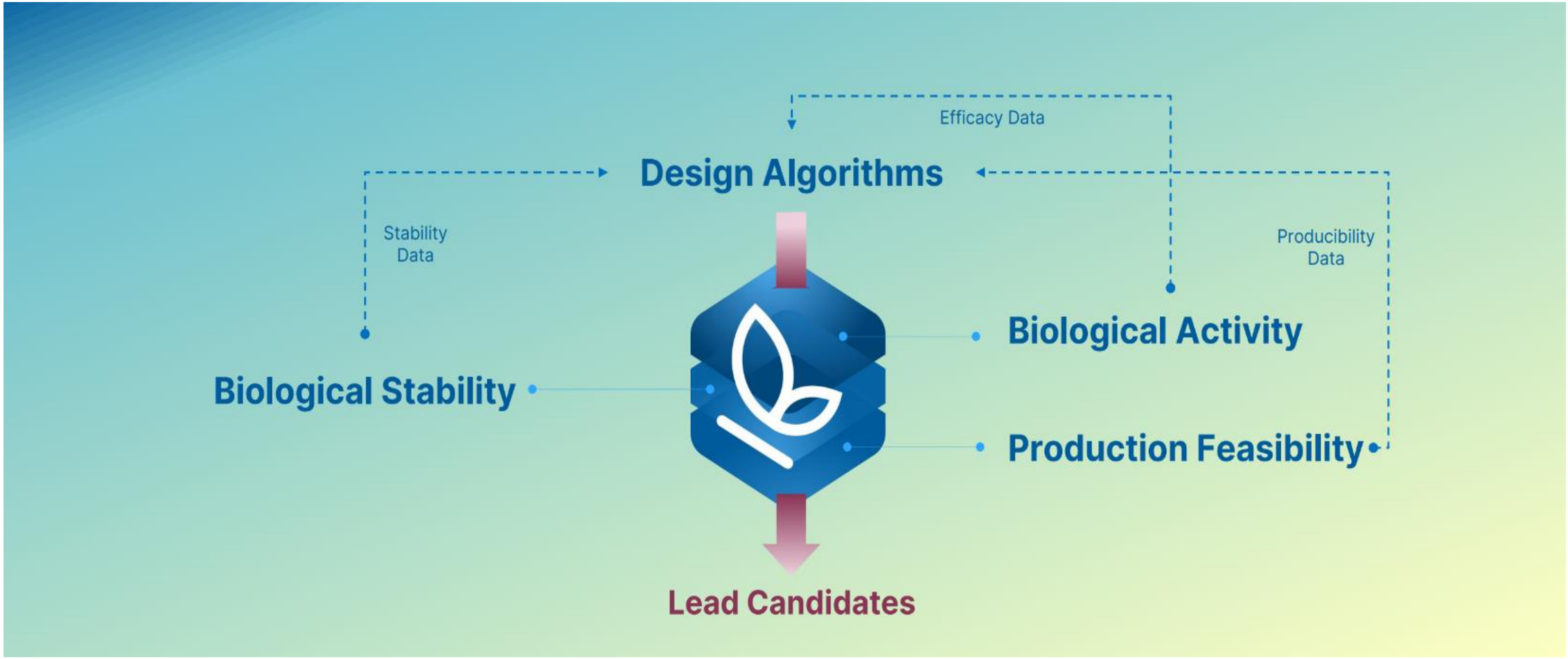
krisalix™: Combining A.I. with Datascience, Biology, Chemistry & Bioproduction for Micropeptide Design



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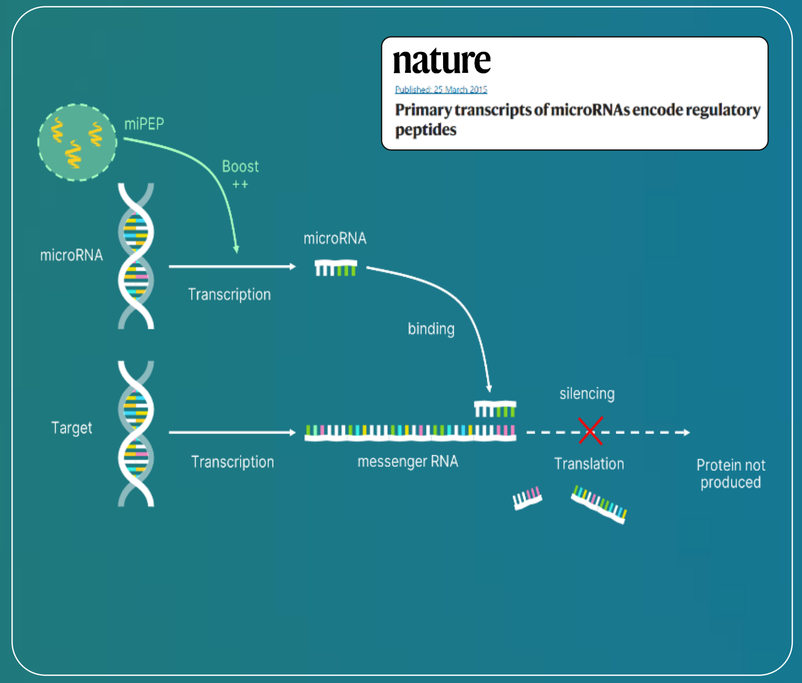
Micropeptide design technologies | Overview

AMP: Anti-Microbial Peptide

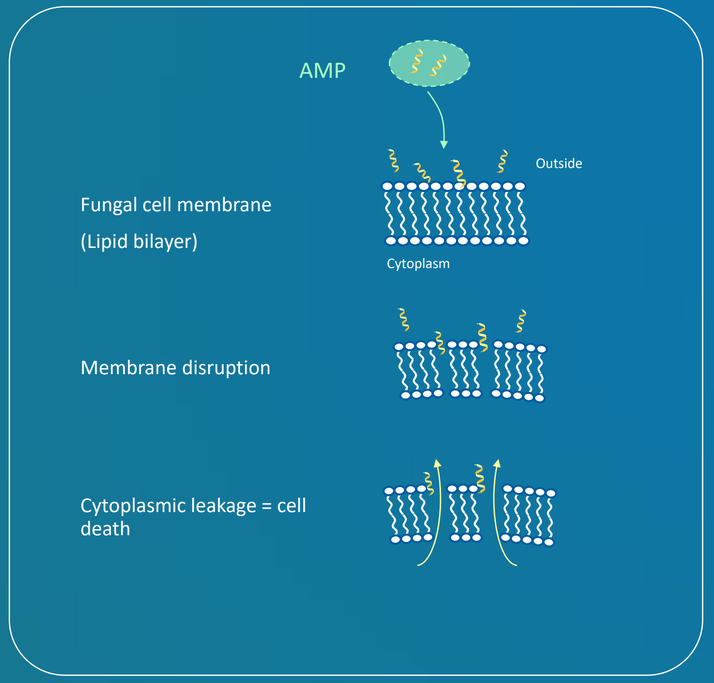
miPEP

to boost expression of targeted microRNA



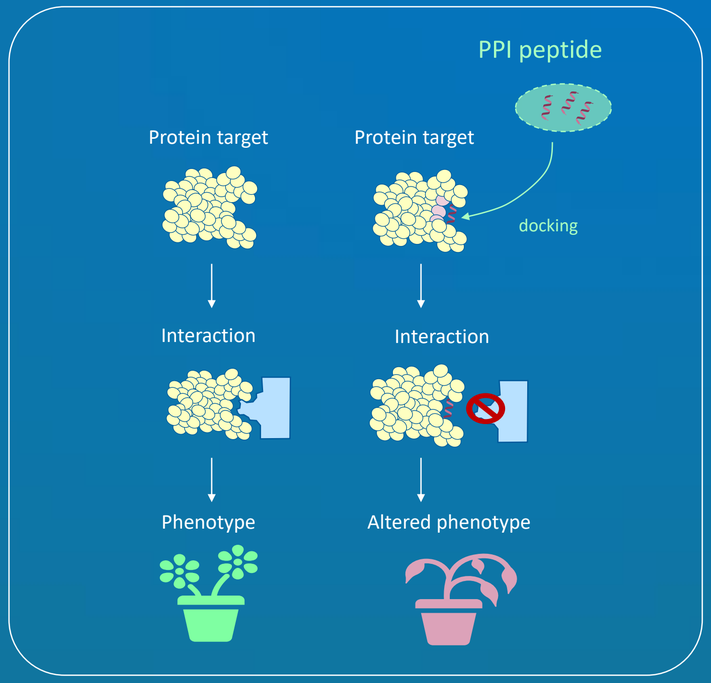
AMP

Peptide to break fungal membranes



PPI

Peptide to interact with proteins



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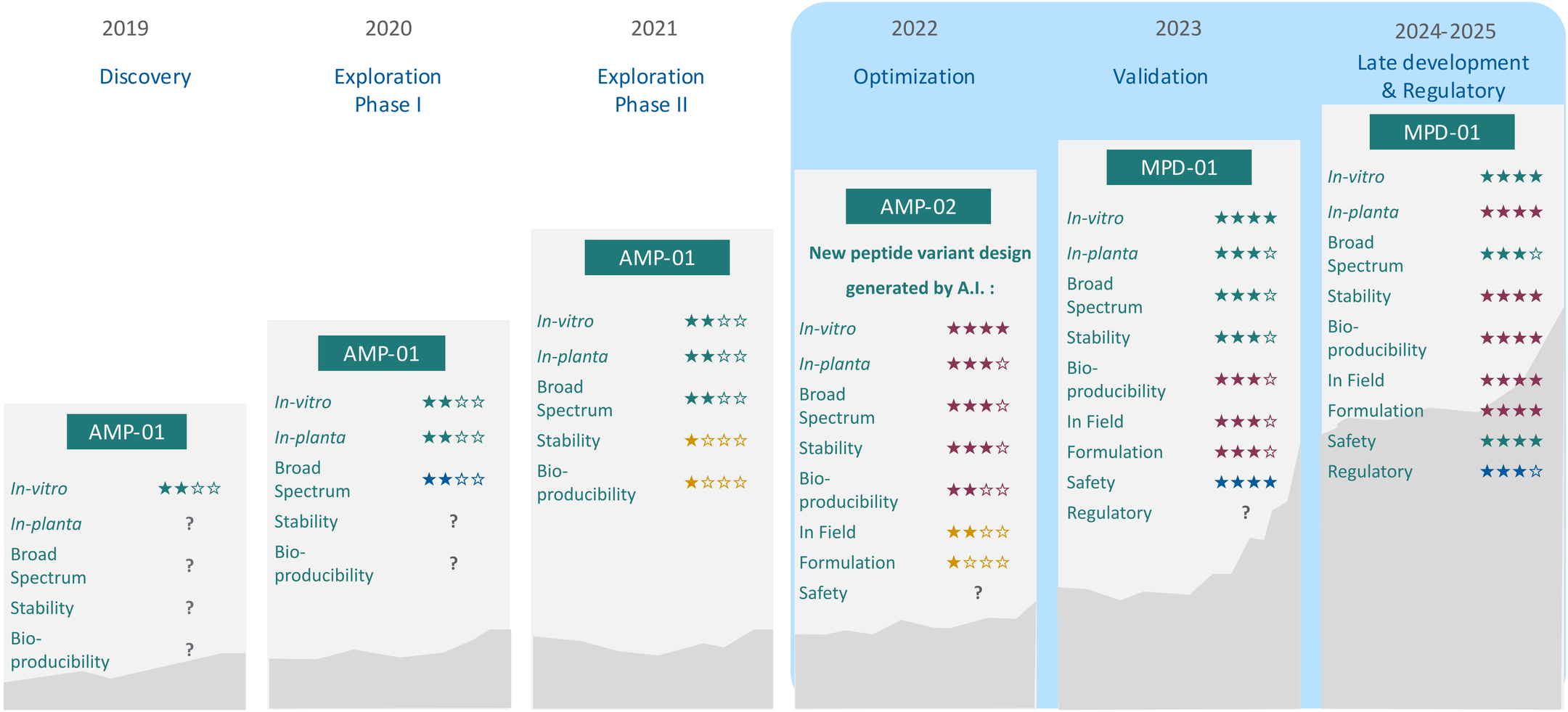
MPD-01 : Our 1st biofungicide active ingredient designed with A.I.

We transformed human expertise into algorithms and used an AMP generative model to find a more potent peptide, stable and manufacturable.



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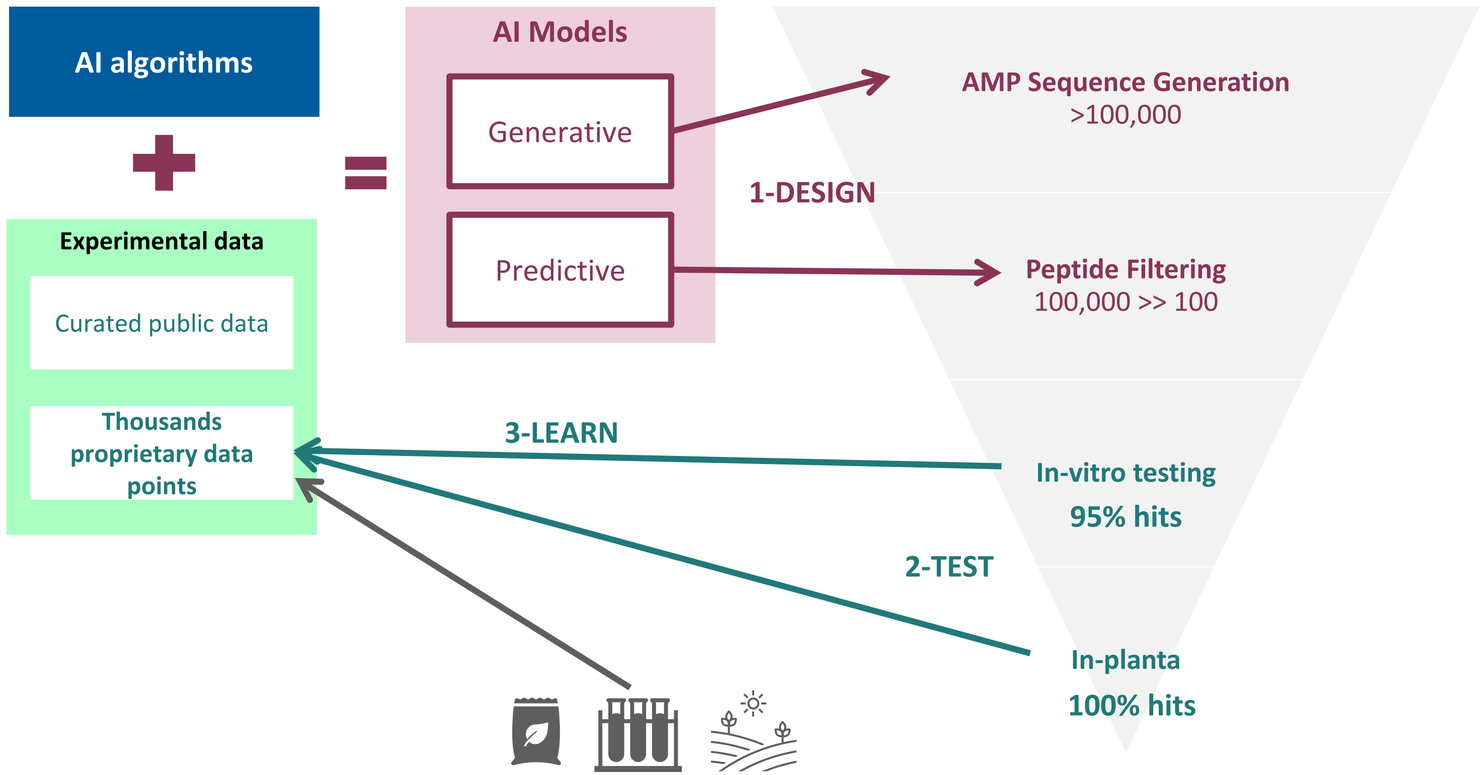
AI-driven AMP discovery: Cut biofungicide development by 50%

A 95% hit rate could allow for direct progression to lead optimization and field trials, bypassing preliminary in-vitro and greenhouse assays.

Use of 2 types of A.I. models

Krisalix™ AI-driven AMP discovery



- Our **proprietary** generative model designs novel AMP sequences.
- 8 predictive models are used to select top candidates according to **product development requirements**, for in-vitro screening.
- This process achieves an exceptional in-vitro hit rate of up to 95%.
- Top in-vitro hits consistently demonstrate high in-planta efficacy.
- The Krisalix™ result: **A validated, broad-spectrum AMP with in-planta evidence in only 3 months**.

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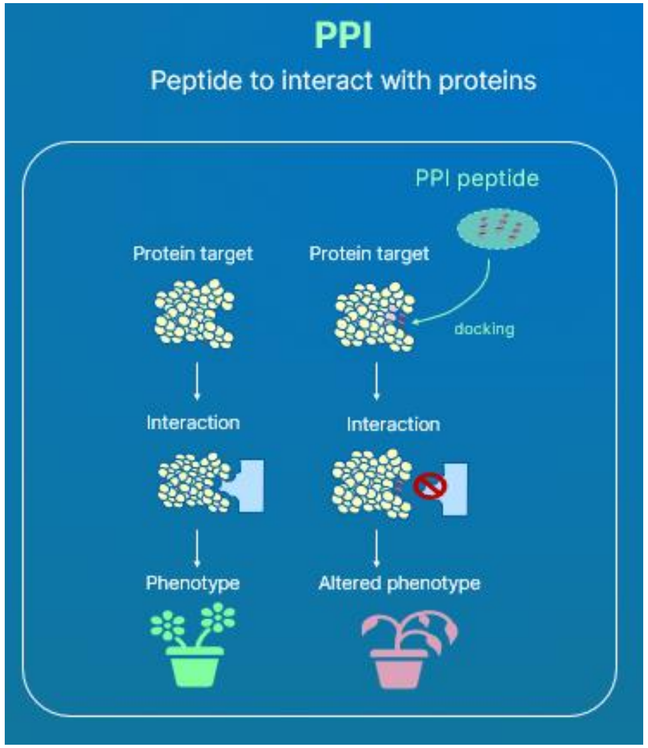
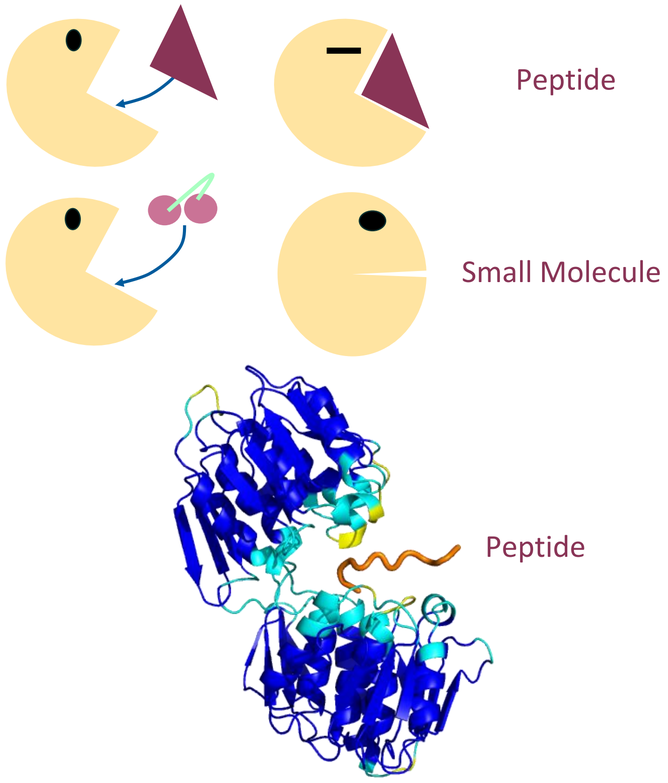
Unlocking New MoAs with Protein-Peptide-Interaction (PPI) technology

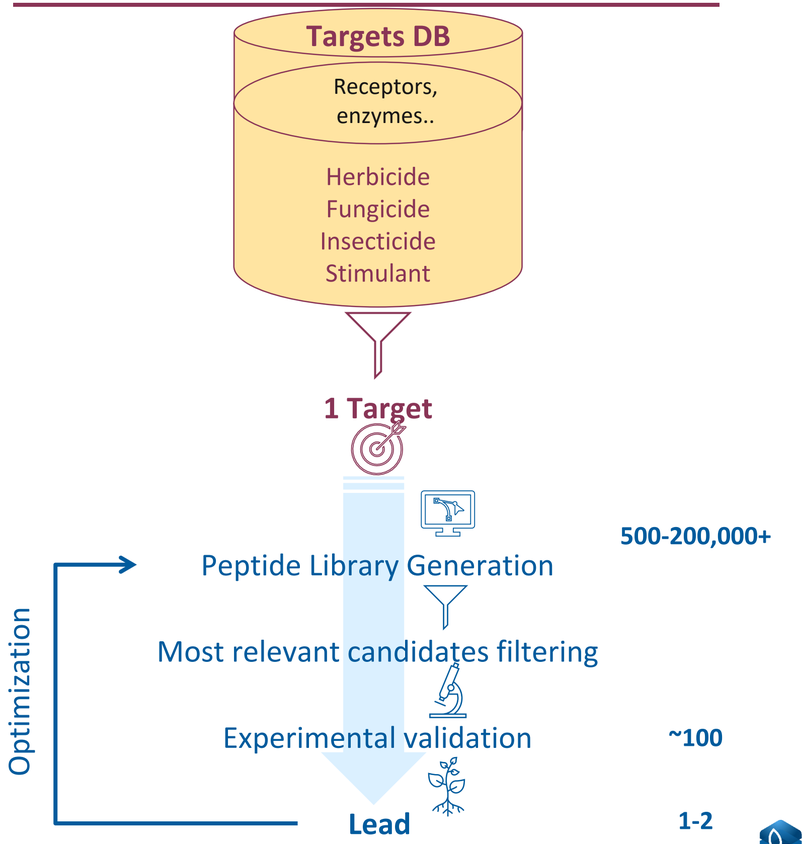
Protein-Peptide Interaction Technology to precisely modulate protein function



Peptides unlock access targets inaccessible to small molecules



Proprietary Design-To-Target pipeline



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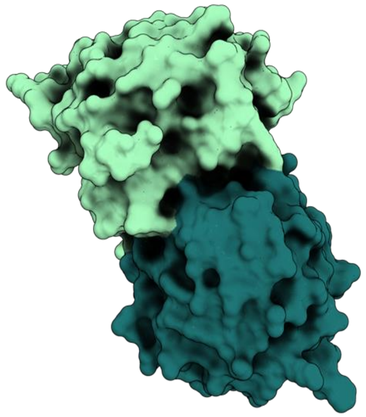
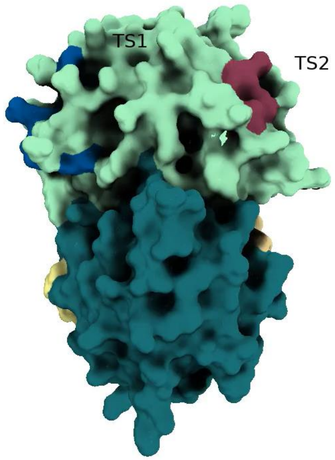
A First-of-its-Kind AI Platform for Agricultural Peptide Design, Integrating Deep PPI Expertise with High-Fidelity Data.

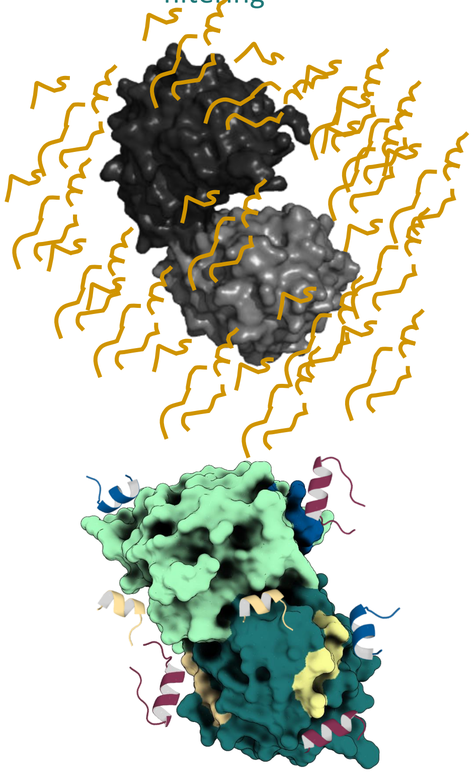
Success in PPI technology is built on two core pillars: deep human expertise for target preparation and the advanced tailoring of AI tools for peptide design.

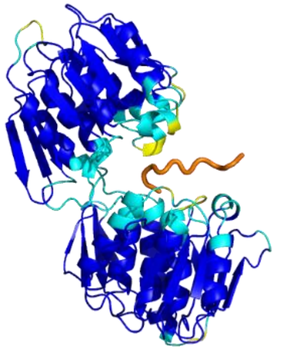
Simplified PPI technology workflow

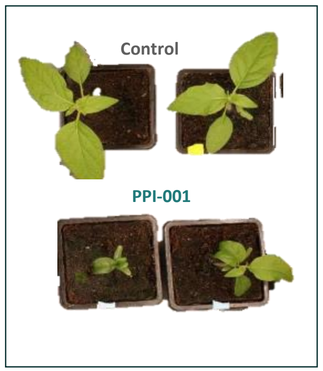
Target Discovery	Target Characterization	Design	Experimental Validation
Knowledge driven or target in-silico screening	AI-based structure modeling and interaction site identification	Peptide Binder Generation and filtering	











Target selection including criteria are crucial at this step

SOP = Standard Operational Procedures

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The Krisalix™ AI Platform: Accelerating Biocontrol R&D and Unlocking Novel MoAs

- A.I. enables the **discovery** of broad-spectrum AMP effective on plant diseases **within months** instead of years
- By deploying a suite of predictive models aligned with key product requirements, we optimize R&D spending and de-risk development, concentrating our efforts solely on top-tier leads
- PPI technology is indication-agnostic and is opening a target world not accessible to small molecules.
- **A.I. is crucial for effective design-to-target approach**: peptide binders can be discovered in few weeks.
- While expertise and AI tools are foundational, **high-quality data is the true differentiator in AI-driven R&D** .
- Our key advantage: deep expertise in harnessing and customizing AI for PPI design with generation of proprietary peptide data that makes our AI-powered Krisalix™ platform exceptionally powerful.
- **Krisalix's AI-powered PPI design** pipeline unlocks a universe of novel Modes of Action, making the possibilities for crop protection virtually **limitless**.

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Thank you!

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