

We offer novel, proprietary, potent & selective payloads with new modes of action (MoA) for targeted cancer therapy by Antibody-Drug Conjugates (ADCs) ready to click to Monoclonal Antibodies (MABs) through a unique & proprietary production platform.

Business Description

Cyano Biotech (CBT) is a **drug discovery and development company** primarily focused on the creation of novel therapeutics for **cancers and microbial infections**. It is uniquely positioned to harness an **overlooked and vastly unexploited source** of bioactive Natural Products (NP): **Cyanobacteria**.

The company relies on a unique NP library with **more than 5,000 novel compounds incl. > 500 anti-cancer screening hits**, derived from the worldwide **largest** private cyanobacteria pharmaceutical **strain collection**.

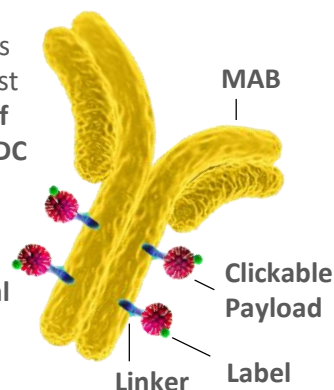
Moreover, it invented an **innovative and highly efficient lead optimiz. & payload production platform** which will lead to numerous new, highly potent and selective ADCs.

Technology manufacturing risks have been overcome and supply is guaranteed through successful efforts in recent years to produce cost-competitive low value products from cyanobacteria in a reliable way at scale. The founders played a key role from 2006 to 2016 in that industrial biotechnology space.

Novel innovative Payloads

Our Payload Generation Platform allows for the structural optimization of naturally occurring variants as well as for the introduction of anchor groups comprising conjugation chemistry (incl. click chemistry).

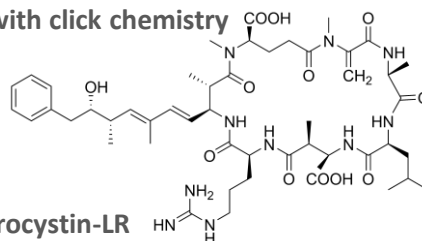
Those anchor groups are accessible for fast and easy **coupling of linkers/MABs for ADC development**, of **markers/labels for diagnosis** and of **additional structural modifications**.



Microcystin-based Payloads

At first, we generated microcystin (MC)-based payloads having:

- A **new & multifactorial MoA in picomolar range** (e.g. IC₅₀ of 30 pM of microcystin-LR)
- **High selectivity** of structural variants which are **non-toxic for non-malignant tissues**
- site-specific molecule engineering incl. **anchor groups with click chemistry**



Business Opportunity

- Exploit the potential of cyanobacteria and take advantage of an **almost untapped source of known & novel cytotoxic compounds**
- Enter a joint ADC development and evaluate our **novel payloads based on highly potent, selective and clickable microcystins** (w/ and w/o fluorescence labeling)
- View our **next payload candidates** and explore in depth our assets and database

Propr. Payload Platform

- **Platform technology** for lead optimiz. coupled with click chem. introduction **patented in 2017**
- Platform applicable for **modifying novel & known toxins** towards new clickable payloads
- Platform used for **production of novel & selective payloads** with new MoA in picomolar range **patented in 2017**

Hit & Lead Molecules

- **> 500 anti-cancer screening hits and 35 anti-cancer compounds** deep into the discovery process & 2 compounds groups as **novel & selective payloads**
- **> 500 anti-infective screening hits and 9 anti-bacterial compounds** with **promising MIC** deep into the discovery process

We would like to partner with MAB and ADC leaders in order to create novel and innovative ADCs carrying our payloads, targeted at various cancers to create new standard setting payload families.

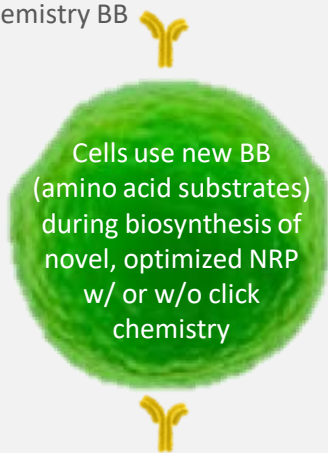
Our payload production platform and our microcystin-based payloads clearly distinguish from the state of the art and offer a huge potential for the targeted and highly innovative cancer therapy.

Payload Platform

Feeding defined amino acids is the key element for creating **novel compounds/payloads based on nonribosomal peptides (NRP)** from cyanobacteria. We can **control variation** and **introduce anchor groups comprising conjugation chemistry** (incl. click chemistry). The technology made those **newly created NRP proprietary** and in case of potent cytotoxins **accessible for MABs to build ADCs**.

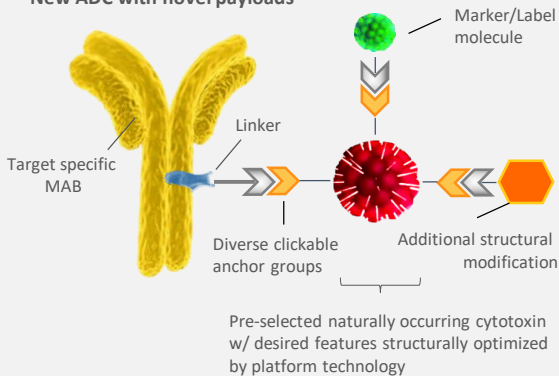
Building block (BB) diversity for NRP:

- Variants of natural BB
- Novel distinct BB
- Click chemistry BB



Creates countless optimized proprietary compounds w/ or w/o click chemistry

New ADC with novel payloads



- We made **known & novel cytotoxins** from cyanobacteria accessible to ADC development,
- (1) Applicable for every cyanobacterial NRP
 - (2) Compound optimiz. & introduction of different click chem. at different positions
 - (3) Highly efficient payload production

Microcystin (MC)-based Payloads

Available data

Mode of action: inhibition of protein phosphatase 1 and 2A (PP1/2A); **NEW** for anticancer treatments

Potency: in vitro activities on PP1/2A inhibition with IC₅₀ ranging from 30 pM to 11.5 nM

Selective transport into the cell: determined with OATP1B1/OATP1B3 transfected RKO and HeLa cells

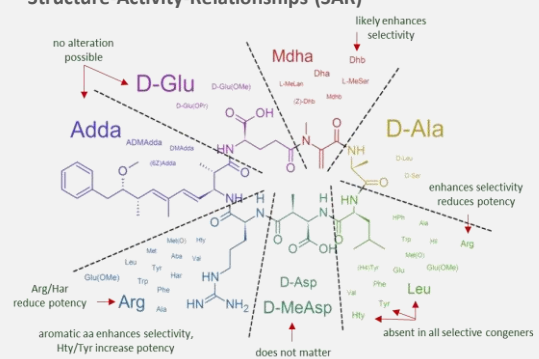
Structure-activity relationship (SAR) for MC re PP1/2A inhibition, selective transport into cells and toxicity, resp. supported by co-crystallization of MC and PP1/2A

In vivo data from mice, rats (data from humanized mice pending)

Microcystin toxicity benchmarking

Base Compound	Marketed Compound	IC ₅₀
Microcystin	Natural (non-optimized) compound from cyanobacteria	0.03-0.04 nM
Dolastatin	MMAE / MMAF (derived from cyanobacteria; ADC marketed as Adcetris)	0.5-5.0 nM
Maytansinoid	DM1 (ADC marketed as Kadcyła)	0.5-5.0 nM
α-Amanitin	Natural (non-optimized) compound from fungi	2000 nM

Structure-Activity-Relationships (SAR)



We made **potent & selective** toxins with a **new MoA**, highly suitable for ADCs,

- (1) Structurally & functionally novel, patentable
- (2) Fast and easy clickable to MABs
- (3) non-toxic for non-malignant (healthy) tissue
- (4) Potentially labeled with fluorescence dyes