



# Peptide Discovery and Optimization

CLIPS™ (Chemical Linkage of  
Peptides onto Scaffolds)  
Technology combined with  
Phage Display

Hit Validation

Lead Identification and  
Optimization



# Discovery and Optimization with CLIPS™

Our group of experts have developed a uniquely versatile and broadly applicable technology for constraining the 3D conformation of peptides, called CLIPS™ (Chemical Linkage of Peptides onto Scaffolds). Unlike other constraining methods, CLIPS™ chemistry can create redox-stable mono-, bi- or tri-cyclic formats\* and is compatible with the presence of side-chain-unprotected amino acids. CLIPS™ peptides have shown their benefits in many areas.



For our peptide discovery service, we can combine CLIPS™ peptides with phage libraries expressing millions to billions of different peptide sequences of different length to screen as mono-cycles or bi-bridges for binding against your target of interest. High-throughput hit validation is performed using chemically synthesized peptides with ELISA Type assays followed by Lead Identification using the best hits to measure binding affinities to your target of interest and stability in complex media. Finally, your top leads can be improved by different strategies during lead optimization, providing you with a high potential CLIPS™ Lead peptide.

## Multiple Formats for Peptide Optimizations

	Arrays	Unpurified	Purified 70-90%
Form	Surface-Immobilized	Solution/Powder	Solution/Powder
# Of Peptides/ Optimization Run	1,500	300	100
Lead Times	8 weeks	6 weeks	6-8 weeks
Scale	< 1 µg	2 µmol, 1-4 mg	20 µmol, 1-10 mg
Length	Up to 20 AA	Up to 30 AA	Up to 40 AA
Compatible Assay <small>* Assay not offered by Biosynth</small>	ELISA-style assay	ELISA-style assay GCI (SPR-type) assay Cells assays*	ELISA-style assay GCI (SPR-type) assay Cells and animal assays*
CLIPS™ Compatible	Yes	Yes	Yes

## Steps in Lead Optimization



- Changes to peptide length (shorten or extend)
- Alanine scanning → identify critical sites
- Amino acid replacement analysis → identify sites and motifs for optimization
- Replacements with non-natural amino acids → enhance potency and stability

## Key Benefits of Working with Biosynth

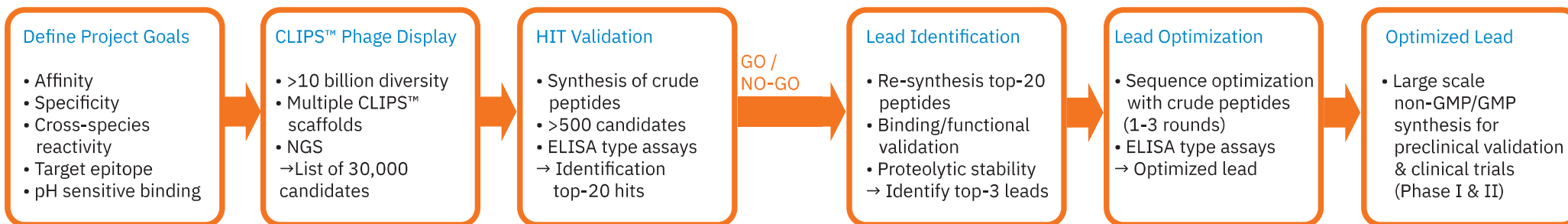
### Close Collaboration

- Evaluation of target difficulty, detailed project set-up, regular update meetings

### Business Model: Fee for Service + milestones

- Target exclusivity while project is running, with the Milestone Payments, IP of compound class belongs to client, no royalties

## Partnership at Every Stage



\* The bicyclic peptide domain is further developed by Bicycle Therapeutics since a technological cooperation started in 2009. For this reason we have no freedom to use bicyclic peptides in Phage Display.



## Global Locations

Switzerland  
United Kingdom  
Slovakia  
India

Unites States  
China  
Ireland  
South Korea

The Netherlands  
Austria  
Japan

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## About Biosynth

Securing Life Sciences Supply Chains - where Chemistry meets Biology, Products meet Services and Innovation meets Quality, Biosynth is at the Edge of Innovation.

With an unrivaled research product portfolio of over half a million products and end to end manufacturing services, we are science led and customer focused to solve problems, taking pride in delivering products and projects that others cannot. Our expertise and capability runs across Complex Chemicals, Peptides and Key Biologics all from one trusted partner.

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