# Cell Perneable Cyclic Peptide Scaffolds

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## BACKGROUND

For the growing list of "undruggable" targets that lack well defined binding pockets  a consensus is emerging that successful inhibìtors will necessarily be larger and more complex than typical small molecule drugs. The targets of existing small molecule drugs make up only a small fraction of the protein encoding genome, and it is estimated that the total "druggable" genome (accessible to inhibition by classic small molecules) represents a small fraction of the total number of potential targets. The number of therapeutic targets that have been unexploited due to poor druggability, such as transcription factors and non-coding RNAs, therefore represent a vast opportunity to make therapeutic advances in virtually every disease category.

Macrocycles - in particular, cyclic peptides - have shown remarkable versatility as ligands against challenging therapeutic targets such as protein-protein interactions (PPls). Cyclization is an established method for improving potency in peptides, and cyclization can dramatically improve proteolytic stability. Importantly, the synthesis of cyclic peptides is much more modular and straightforward than the synthesis of organic molecules of similar size and complexity. Large combinatorial libraries of cyclic peptides, derived from methods such as DNA-encoded synthesis, phage display and mRNA-d¡splay, have yielded potent inhibitors against a variety of undruggable or challenging targets.

## TECHNOLOGY DESCRIPTION

The invention involves cell permeable cyclic peptide scaffolds generally of the following formula:

Cyclo [Z-$Y_1$-X-Pro-$Y_2$-Phe] where Pro is L- or D- proline, Phe is L- or D- phenylalanine.

X, $Y_1$, $Y_2$, and Z can be independently: L-leucine, N-methyl L-leucine, D-leucine, N-methyl D-leucine, L-alanine, D-alanine, N-methyl L,-alanine, N-methyl D-alanine, L-β-homophenylalanine, propyl peptoid, or benzylpeptoid.

## APPLICATIONS

Library of cyclic peptide compounds with high membrane permeability

Compound screening

Pharmaceutical leads

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## OTHER INFORMATION

**KEYWORDS**

Cyclic peptides, Membrane permeable compounds, Undruggable targets

**CATEGORIZED AS**

- **Materials & Chemicals**
  - Biological
- **Medical**
  - New Chemical Entities, Drug Leads

**RELATED CASES**

2017-624-0

## ADVANTAGES

Compounds have high membrane permeability. See issued patent for specific information.

## INTELLECTUAL PROPERTY INFORMATION

| Country | Type | Number | Dated | Case |
|---|---|---|---|---|
| United States Of America | Issued Patent | 11,001,609 | 05/11/2021 | 2017-624 |

## RELATED MATERIALS

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