

# 14-3-3 COVALENT MOLECULAR GLUE STABILIZERS

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## PATENT STATUS

Patent Pending

## BRIEF DESCRIPTION

This drug discovery platform focuses on identifying and developing covalent molecular glue stabilizers specifically designed to target 14-3-3 proteins. Researchers at UC Berkeley have engineered this system to discover small molecules that create a permanent, covalent bond between 14-3-3 adapter proteins and various disease-relevant targets. By stabilizing these protein-protein interactions (PPIs), the platform enables the sequestration and functional inhibition of proteins that are typically considered "undruggable" due to a lack of traditional binding pockets. This approach exploits the extensive regulatory network of 14-3-3 proteins, which interact with hundreds of signaling partners, to provide a modular strategy for therapeutic intervention across a wide range of human diseases.

## SUGGESTED USES

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Oncology Therapeutics: Developing glues to sequester oncogenic signaling proteins that depend on 14-3-3 for stability or cellular localization.

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Neurodegenerative Disease Treatment: Targeting proteins involved in pathological signaling or misfolding pathways within the central nervous system.

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Modulation of Scaffolding Proteins: Providing a mechanism to inhibit the activity of adapter proteins that lack enzymatic domains and are therefore difficult to target with conventional inhibitors.

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High-Throughput Lead Discovery: Serving as a specialized screening system to rapidly identify novel covalent ligands for challenging protein-protein interfaces.

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Biological Research Tools: Utilizing specific molecular glues to acutely sequester proteins in cell models to validate their roles in complex biological pathways.

## ADVANTAGES

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Irreversible Stabilization: The covalent nature of these molecular glues ensures long-lasting sequestration of the target protein, providing more robust inhibition than reversible binders.

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Targeting "Undruggable" Space: Effectively modulates protein-protein interfaces that are traditionally inaccessible to standard occupancy-based small molecules.

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Enhanced Selectivity: The mechanism requires the specific cooperative binding of 14-3-3 and the target protein, minimizing off-target interactions with other cellular proteins.

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Versatile Platform: Capable of being adapted to a wide variety of targets within the vast 14-3-3 interactome.

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Accelerated Development: The platform streamlines the transition from initial screening to the identification of therapeutic lead compounds.

## RELATED MATERIALS

### ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Covalent Degradator of the Oncogenic Transcription Factor CTNNB1](#)
- ▶ [Stereoselective Covalent Destabilizing Degradation of the Oncogenic Transcription Factor MYC](#)

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## OTHER INFORMATION

### CATEGORIZED AS

» [Biotechnology](#)

» [Health](#)

» [Proteomics](#)

» [Medical](#)

» [Screening](#)

» [Therapeutics](#)

» [Research Tools](#)

» [Screening Assays](#)

### REFERENCES

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