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# PEPTIDES FOR CLEARING DEGRADED AND UNFOLDED COLLAGEN

## THERAPEUTICS/RESEARCH TOOL

Peptide conjugates for imaging, diagnosis, and drug delivery for diseases and injuries that cause collagen damage.

### TECHNOLOGY TYPE

Peptide  
Tissue and Wound Repair  
Small Molecule  
Nanoparticles  
Collagen  
Digital Imaging  
Tissue Microarrays

### STAGE OF DEVELOPMENT

- Peptides have been synthesized.
- Further testing required to optimize composition and demonstrate efficacy.

### IP PROTECTION

#### U.S. Utility Patent Pending

Modified Collagen  
Hybridizing Peptides and  
Uses Thereof  
US20170112940A1

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Reference Number: U-6042

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### TECHNOLOGY SUMMARY

Collagen is a major structure protein found in almost all human tissue. Degraded collagen is present in damaged tissues and is highly associated with many critical human diseases and injuries.

The collagen hybridizing peptide (CHP) can bind to these degraded collagens without affecting intact collagen. The proposed CHP has a high affinity to denatured collagen molecules for use in imaging, diagnosing, and treating diseases and injuries that cause collagen damage. The presence of Aza-Glycine residues from collagen mimetic peptide sequence increases stability of bonding to degraded collagen. The peptide can be paired with existing diagnostics and therapeutic agents to provide highly specific and targeted delivery of therapeutics or imaging markers to damaged collagen. Potential applications range from treating cancer to stabilizing blood clots and treating skin conditions.

### FEATURES AND BENEFITS

- Improves target efficacy.
- Provides superior delivery of linked drugs to degraded collagen due to higher specificity.
- Increases imaging accuracy leading to better understanding of disease progression.

### RECENT PUBLICATIONS

Zitnay, J.L., Li, Y., San, B.H., Depalle, B., Reese S.P., Buehler, M.J., Yu, S.M., Weiss, J.A. (2017). Molecular level detection and localization of mechanical damage in collagen enabled by collagen hybridizing peptides. *Nature Communications*. 8:14913. doi: [10.1038/ncomms14913](https://doi.org/10.1038/ncomms14913).

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### INVENTOR PROFILE

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