



Acylhydrazone-Based Cleavable Linkers



The present technology relates to the use of a hydrazone-linked azido biotin reagent for protein capture by click chemistry and subsequent identification. The use of these linkers is expected to be generalized allowing for the selective release of tagged molecules from non-covalent and covalently tagged supports.

Benefits

This hydrazone-linked analog can be cleaved quickly and efficiently under mild conditions and seems to be far more versatile than previous reagents.

Proteomic searches using affinity-based chromatography (e.g., biotin-(strept)avidin) have been severely hampered by low protein recovery yields, protein destruction and denaturation, and the release of background proteins from the support. These limitations have confounded protein identification. This improved linker results in:

- Milder Release Conditions
- Higher Protein Yields
- Less Protein Denaturation and Destruction



For More Information

If you would like more information about this technology or UNC - Chapel Hill's technology transfer program, please contact:

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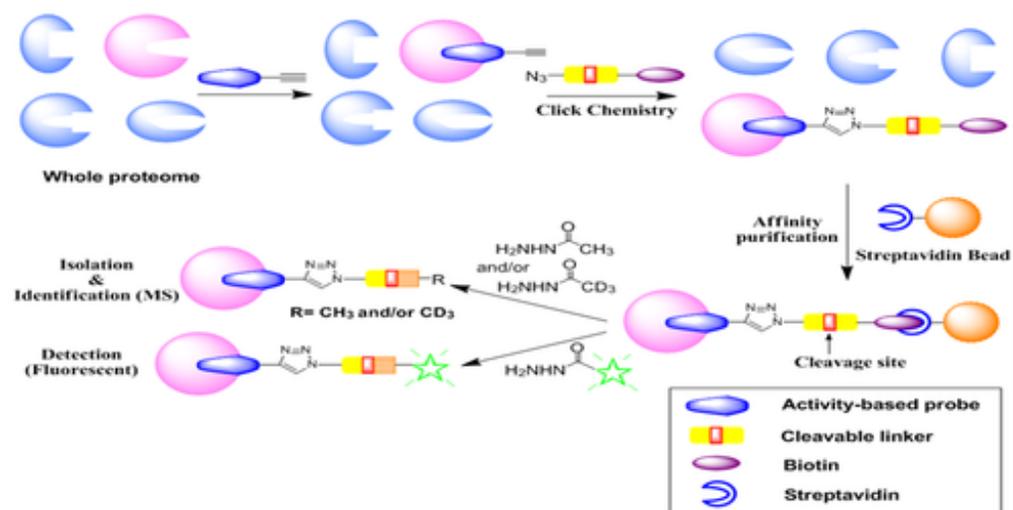
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The Technology

A new cleavable linker was developed to permit the efficient isolation of proteins with a traceable tag (i.e., isotopic, fluorescent) allowing detection and identification under mild conditions. The cleavage conditions are mild and allow for protein labeling with other tags. Protein release proceeds with significantly reduced levels of background proteins.

The reagent can be used as a "fishing" tool (See diagram below) to identify protein targets of synthetic ligands, but in principle the reagent could be used for numerous applications in activity-based proteomics as well. Other biotin analogs with cleavable linkers have been reported for these purposes, but they are fraught with problems and not widely used. This hydrazone-linked analog can be cleaved quickly and efficiently under mild conditions and seems to be far more versatile than previous reagents.



Opportunity

UNC's Office of Technology Development seeks to stimulate development and commercial use of UNC-developed technologies. UNC is flexible in its agreements, and opportunities exist for joint development, academic or commercial licensing (exclusive, non-exclusive, and field-of-use), publishing, or other mutually beneficial relationships. UNC is pursuing U.S. and international intellectual property protection for this innovation.

Ref: 08-0101

10.22.10