

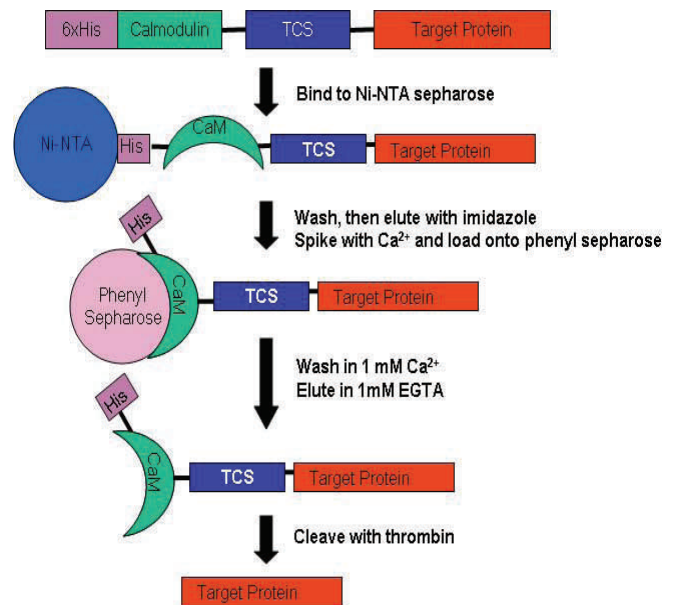
Rapid, High-Purity, Low-Cost Purification System for Recombinant Proteins

Overview of Technology:

Therapeutic proteins, subunit vaccines, as well as recombinant proteins for research use must all be recovered in a pure and functional state. To address this problem - UHN researchers have developed a novel tandem - (His) 6-calmodulin (HiCaM) - fusion tag that combines two distinct purification strategies, namely immobilized metal-affinity (IMAC) and hydrophobic interaction chromatography (HIC), in a simple and rapid two-step procedure.

Advantages of Technology:

- Requires little-to-no optimization in order to achieve ~99% purity.
- Utilizes a single buffer system which avoids time-consuming exchanges between purification steps.
- Uses a small affinity tag (6xHis-CaM, ~19 Kd) that is completely removed upon cleavage with thrombin.
- Requires inexpensive binding matrices compared to those used in competing purification strategies (currently quoted prices by GE Healthcare: \$2.80 USD/mL Phenyl sepharose 6 FF required for HiCaM system vs. \$34 USD/mL IgG sepharose 6 FF required for TAP-tag system).
- Is easily adapted for any other expression vector (bacterial, yeast or mammalian).
- Overcomes common limitations such as non-specific binding, loss of function due to changes in native protein confirmation and co-elution of host proteins.



HiCam Purification Overview

Related Publication:

McCluskey, A.J., Poon, G.M. and Gariépy, J. A rapid and universal tandem-purification strategy for recombinant proteins. *Protein Sci.* **16(12)**:2726-32 (2007)

Patent:

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