PROTEIN PURIFICATION/IMMOBILIZATION THROUGH NEGPEPS

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HINTERGRUND

Affinity Tags, like His Tag, Flag Tag or Strep Tag, which mediate the selective binding to a ligand, are widely used for the purification of recombinant proteins or for binding to functionalized chip carriers. At present, a suitably functionalized surface is necessary for the use of affinity tags.

LÖSUNG

Here magnetic particle binding peptides (negPeps), which bind to magnetic nanoparticles (MNPs) in a controlled manner without a specific surface functionalization have been identified. By altering the buffering conditions the negPeps can be separated from MNPs again. Furthermore, a plasmid system was developed, which enables the expression of target proteins as negPep-fusion proteins in E. coli.

The novel negPep-technology offers major advantages:

- no functionalization of surfaces is necessary (easy to handle)
- reversible binding of negPeps to MNPs: MNPs are reusable (cost-effective)
- no denaturation of biomolecules

The application fields of the negPep-technology include:

- protein purification
- use of negPep-tagged proteins as ligands for magnetic separation
- use of negPep-tags for the immobilization of enzymes
Vorteile

A very lucrative commercial opportunity is to offer kits containing the magnetic beads, the expression plasmid and the required buffers for binding and separation of the beads. The use of the negPep technology for protein purification, which is one possible application option is shown below: