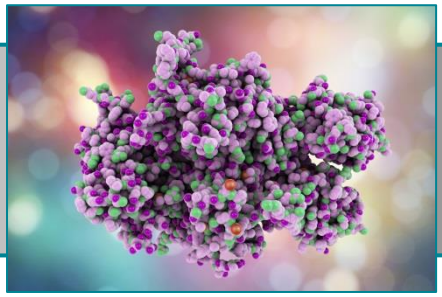
TECHNO OFFER

New method for purifying recombinant proteins

purification / recombinant protein / affinity chromatography / protein tag /detection / biotechnology



CONTEXT

Recombinant protein production processes are actually a key focus of the bio-industry. Despite this, the purification of these proteins is still awaiting improvements because this step represents a very expensive cost of production for a low specificity.

DESCRIPTION

This invention concerns a new protein tag to be linked to a recombinant protein of interest in order to purify it by affinity chromatography. This system allows a one-step column purification with a much higher purity rate and a similar yield to conventional methods. In addition, elution is carried out with inexpensive and non-toxic lactose.

The effectiveness of the new tag has been validated in different prokaryotic-type protein production systems (*E. coli*) and is currently being studied in eukaryotic systems (HEK-type mammalian cells particularly).

Examples of proteins produced by this method (Kriznik et al. *Biotechnology Journal* 2018): an enzyme (thioredoxin Trx1), a transcription factor (ESRα), a receptor (TREM1) usually produced in an insoluble manner (solubility obtainment: Carasco et al. *Cellular and Molecular Immunology* 2018)...

COMPETITIVE ADVANTAGES

- **Efficient purification of all types of proteins (all origins and all weights): possible production in the prokaryotic system and soon eukaryotic**
- **It helps to solubilize proteins of interest usually insoluble**
- **Highly specific method (low contaminant content), higher purity rate**
- **Use of a tag easily cleavable and separable from the protein of interest**
- **One-step, low-cost purification (lactose elution)**
- **No risk for the user**
- **Near-zero environmental impact predicted (no toxic compounds)**

Markets & applications

Biotechnology:
purification / detection of recombinant proteins

Development stage

Technology validated in prokaryotic system and under development in eukaryotic system

Research team

Laboratory "Ingénierie Moléculaire & Physiopathologie Articulaire" (IMoPA)
University of Lorraine - CNRS

Intellectual property

Patent registered on May 13th, 2016 (PCT/FR2017/051140)

Target partnership

Patent licensing

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