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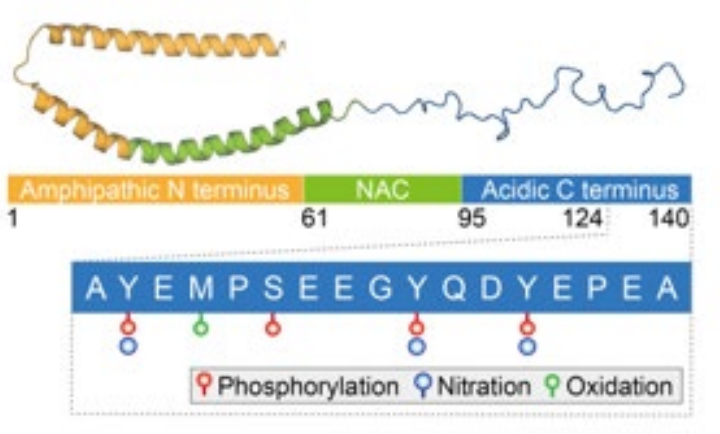
Licensing Opportunity

TTO – Technology Transfer Office

Use of Aerolysin Nanopores for protein isoform discrimination



The structure of α-synuclein in full-length. Phosphorylation (red circle), nitration (blue circle) and oxidation (green circle) of residues 124-140 are highlighted

Ref. Nr

6.2285

Keywords

Post-translational modifications, aerolysin, diagnostics

Intellectual Property

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Publications

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Description

Traditionally, distinguishing between various isoforms of peptides, polypeptides, or proteins that differ in post-translational modifications (PTMs) has been a complex and challenging process. Conventional techniques often lack the specificity and accuracy required to differentiate between isoforms with subtle PTM differences.
Here we present a new technology that leverages aerolysin nanopores to discriminate between isoforms of peptides, polypeptides, or proteins based on their post-translational modifications for various applications as disease diagnostics, pharmaceutical development, and protein research.

Advantages

The aerolysin nanopore system offers exceptional precision in discriminating between isoforms with subtle PTM differences. This accuracy is crucial in identifying disease-related isoforms and understanding their implications.

The technology allows for real-time analysis, providing immediate results, which can significantly expedite diagnostics and research.
It simplifies the process of isoform analysis, making it accessible to a broader range of researchers and applications.
The technology's ability to detect aberrant PTMs in peptides, polypeptides, and proteins has significant implications for identifying diseases, particularly neurodegenerative disorders like Alzheimer's and Parkinson's.

Applications

- Early disease diagnosis
- Personalized medicine
- Pharmaceutical drug development