

AMINO ACID REPEATS

Analysis & Implications

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Abstract

Amino acid repeats (AARs) are abundant in protein sequences and play key roles in protein function and evolution. This review examines detection methodologies and biological implications, including disease associations through repeat variation analysis.

Introduction

AAR Prevalence & Significance:

Common in structural/functional proteins

Exist as simple runs to complex domain repeats

Variation links to function and disease

Classification Framework

Classification Criteria

Unit Similarity:

- Perfect vs. Imperfect repeats

Spatial Arrangement:

- Tandem vs. Distributed

Pattern Complexity:

- Simple vs. Domain repeats

Detection Strategies

Detection Methodologies

Self-comparison alignment

Fourier transform pattern recognition

Complexity measurement approaches

Machine learning implementations

Functional Implications

Biological Significance

Protein folding mechanisms

Evolutionary conservation patterns

Neurological disease associations

Potential therapeutic targets

Thanks For your Attention