

A to I editing events in human proteins from baseline tissues

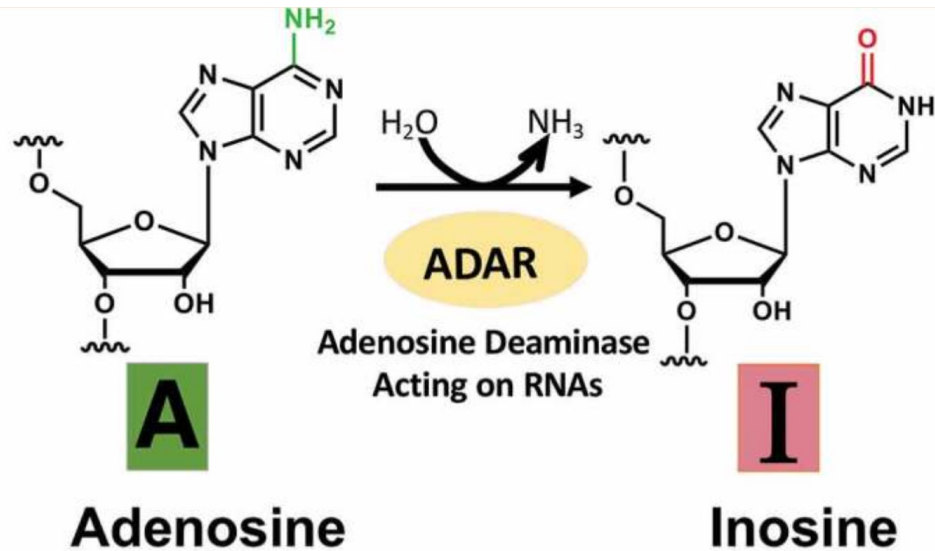
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6th February 2024

Adenine to Inosine editing

Adenosine deaminase acting on RNA (ADAR) enzymes

- double-stranded RNA-specific adenosine deaminase (ADAR1)
- double-stranded RNA-specific editase ADAR2 and ADAR3



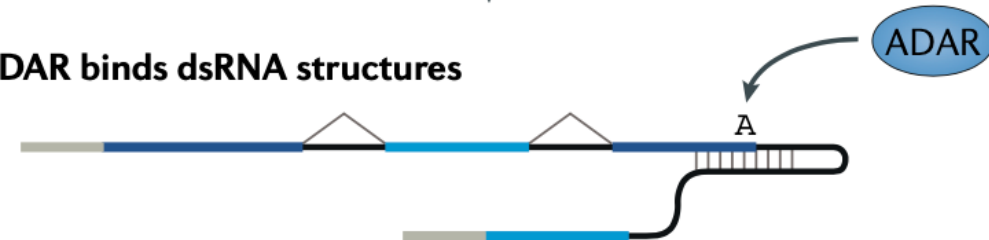
Genomic DNA



Pre-mRNA



ADAR binds dsRNA structures



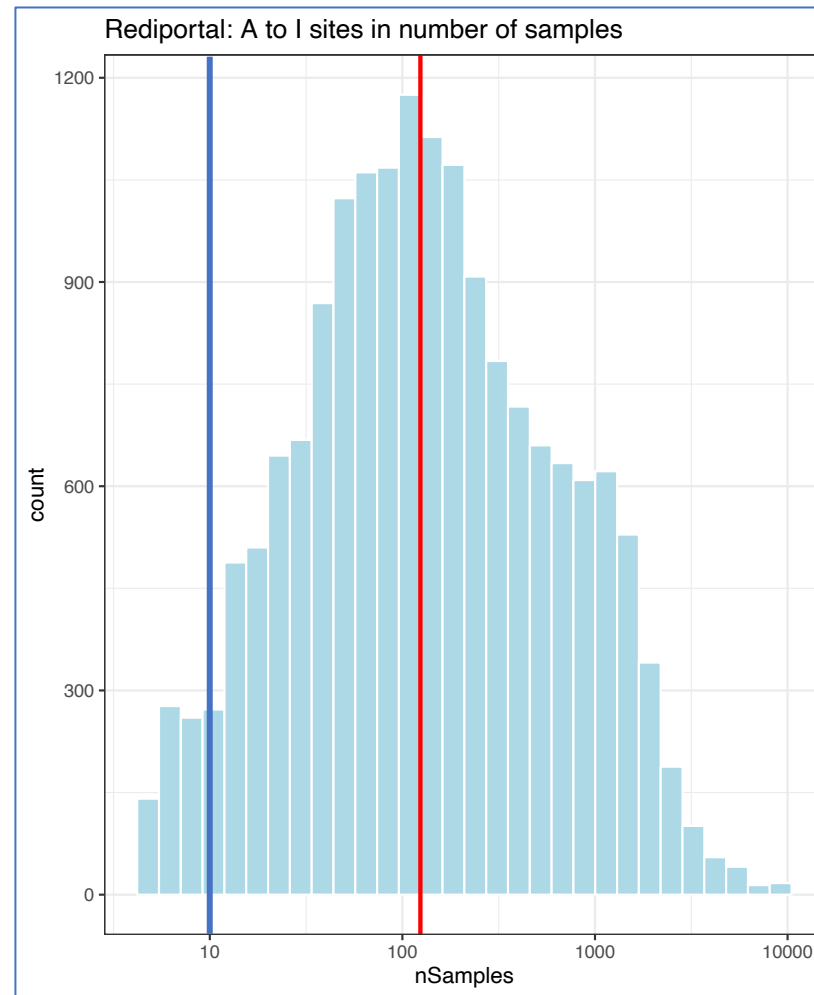
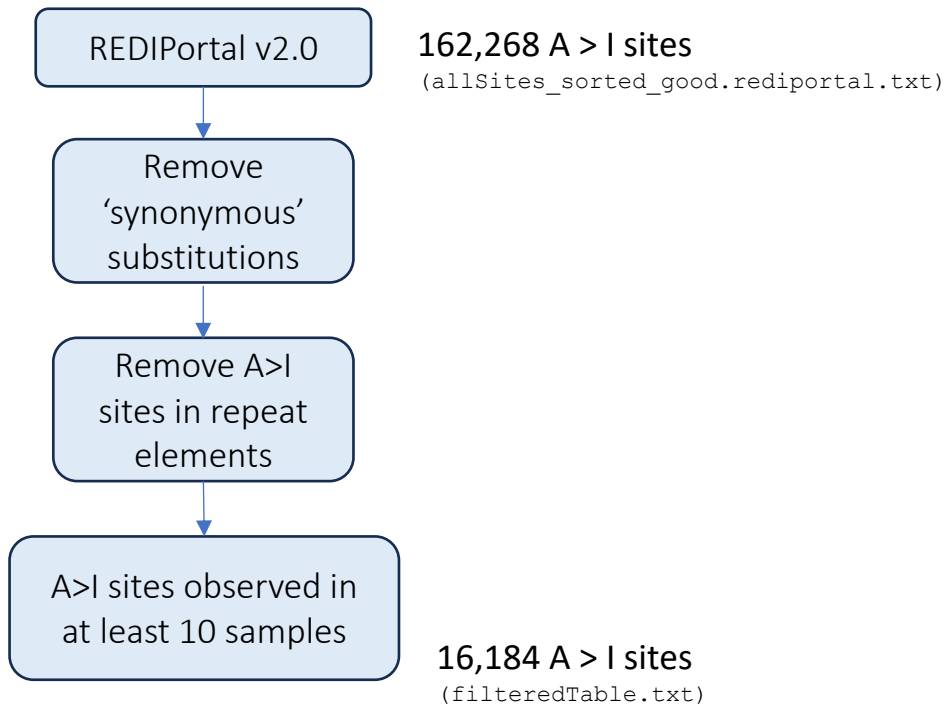
Mature mRNA



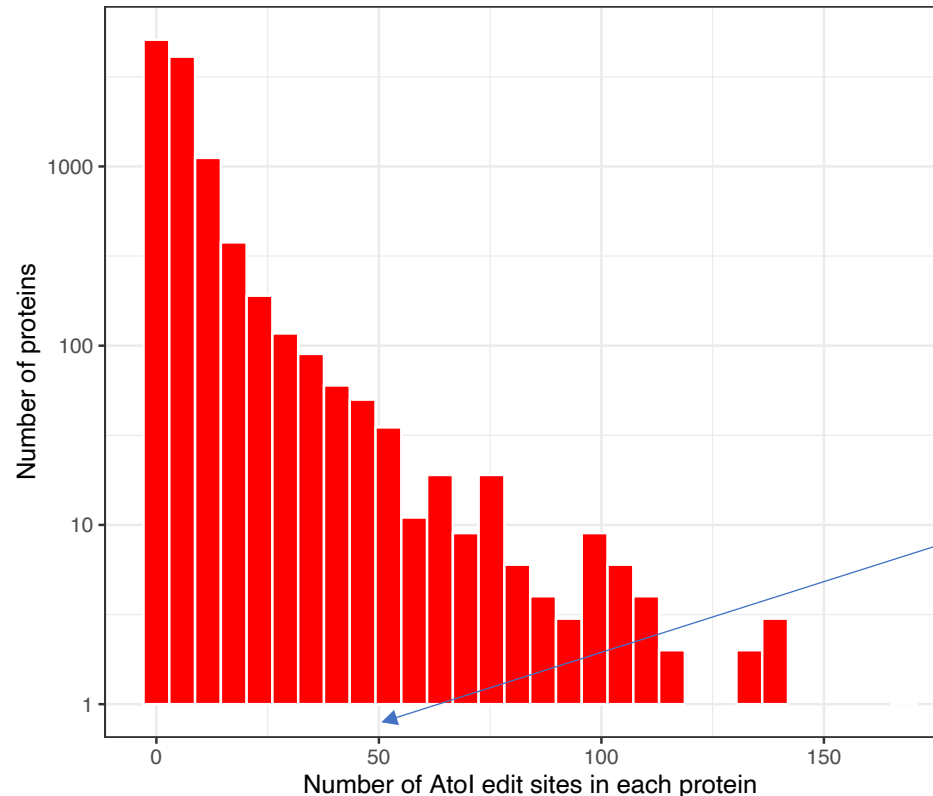
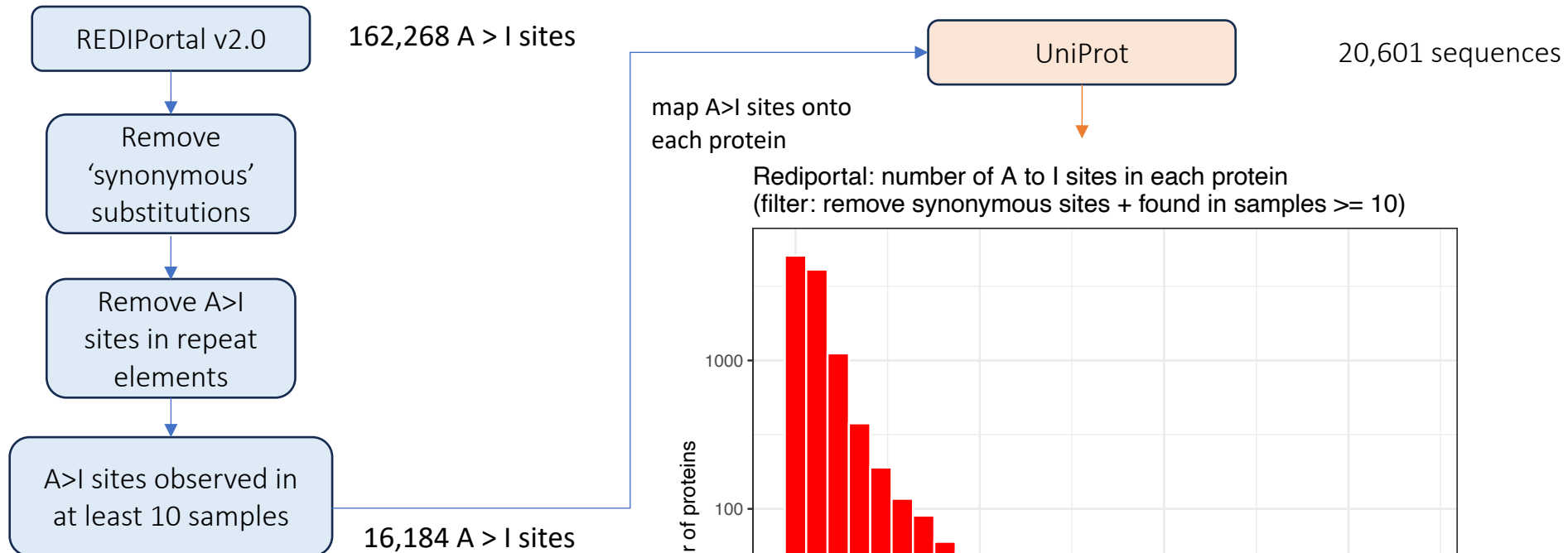
Method to generate A to I search database

- A > I sites from REDIPortal

REDIportal V2.0 is based on 9642 human RNAseq samples from 549 individuals (31 tissues and 54 body sites)



Protein seq. database or Peptide seq. database?



2^1 ★

$2^1 = 2$ sequence variations

2^2 ★ ★

$2^2 = 4$ sequence variations

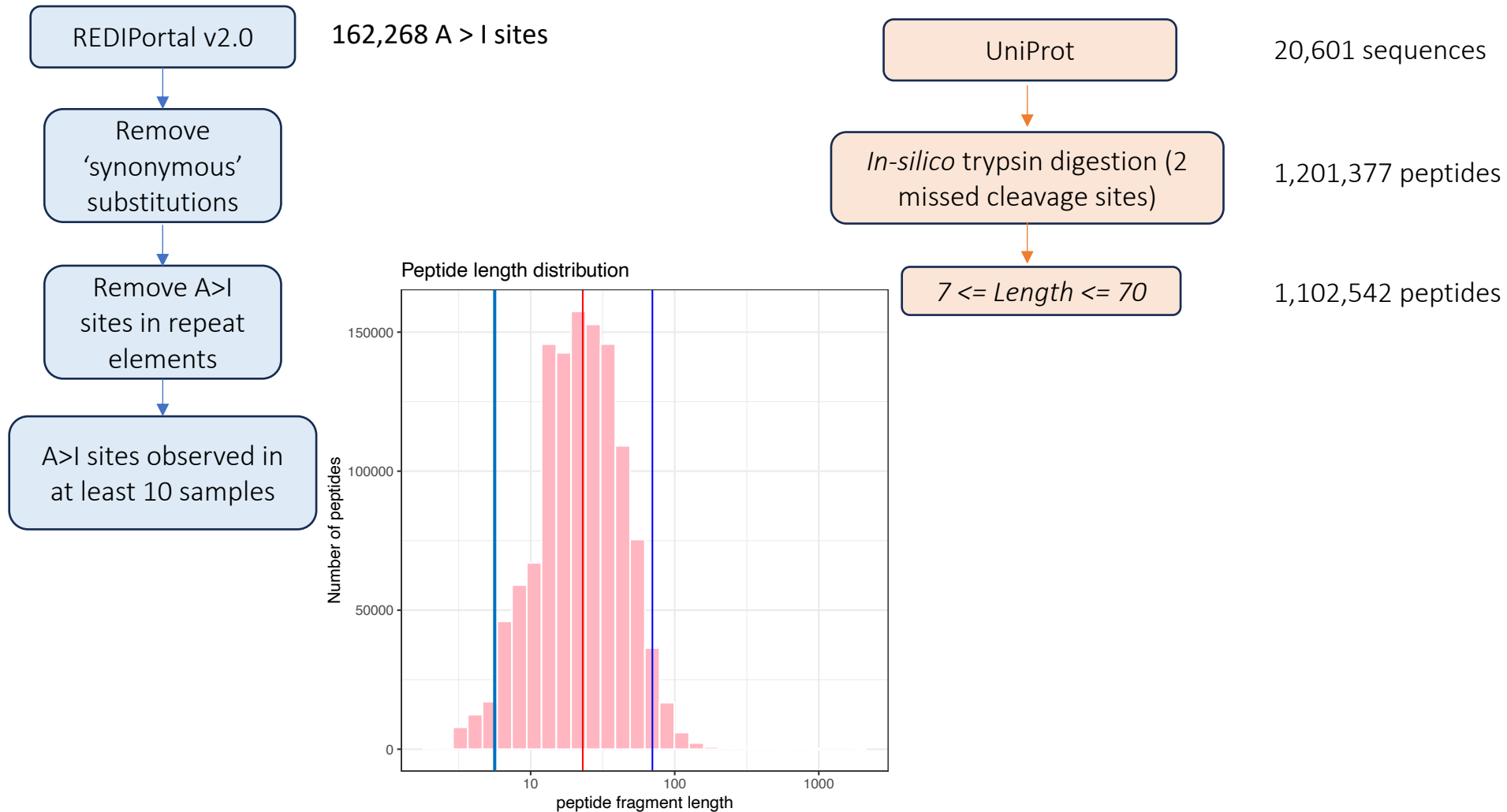
★ ★

$2^{50} = 1,125,899,906,842,624$ protein sequence variations!

Method to generate A to I peptide search database

- A > I sites from REDIPortal

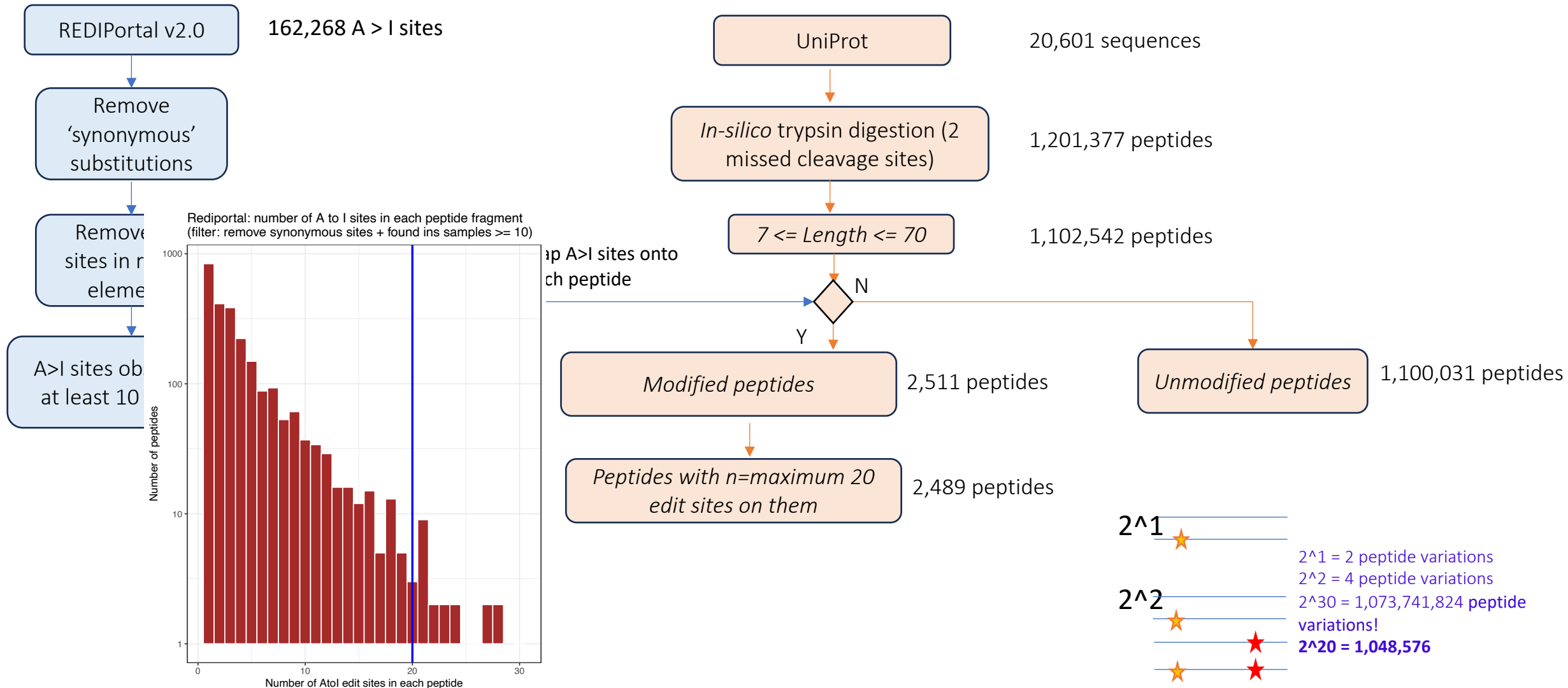
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Method to generate A to I peptide search database

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