

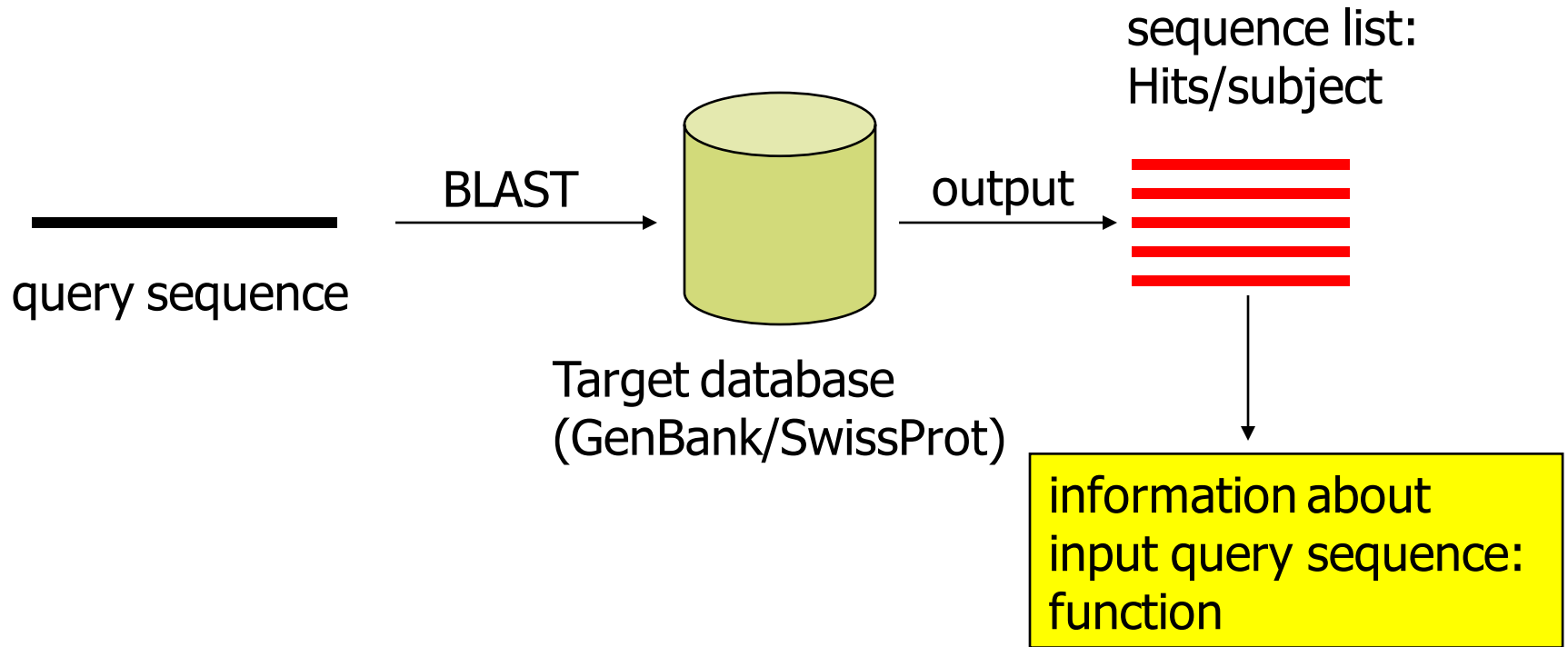
Delta-BLAST

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BLAST

- ▶ **B**asic **L**ocal **A**lignment **S**earch **T**ool
- ▶ Developed in 1990
- ▶ A heuristic method for performing local alignments through searches of high scoring segment pairs (HSP's)

BLAST



- ▶ The aim of a BLAST search is to discover sequence homology on basis of sequence similarity
- ▶ **BLAST returns similar sequences, not necessarily biological similar sequences**

BLAST

- With BLAST you may:
 - Search for sequence similarity matches in the database.
 - Select the best target database for your search.
 - Choose the best algorithm for your search.

BLAST Variants

Basic BLAST

Choose a BLAST program to run.

nucleotide blast

Search a **nucleotide** database using a **nucleotide** query

Algorithms: blastn, megablast, discontinuous megablast

protein blast

Search **protein** database using a **protein** query

*Algorithms: blastp, psi-blast, phi-blast, **delta-blast***

blastx

Search **protein** database using a **translated nucleotide** query

tblastn

Search **translated nucleotide** database using a **protein** query

tblastx

Search **translated nucleotide** database using a **translated nucleotide** query

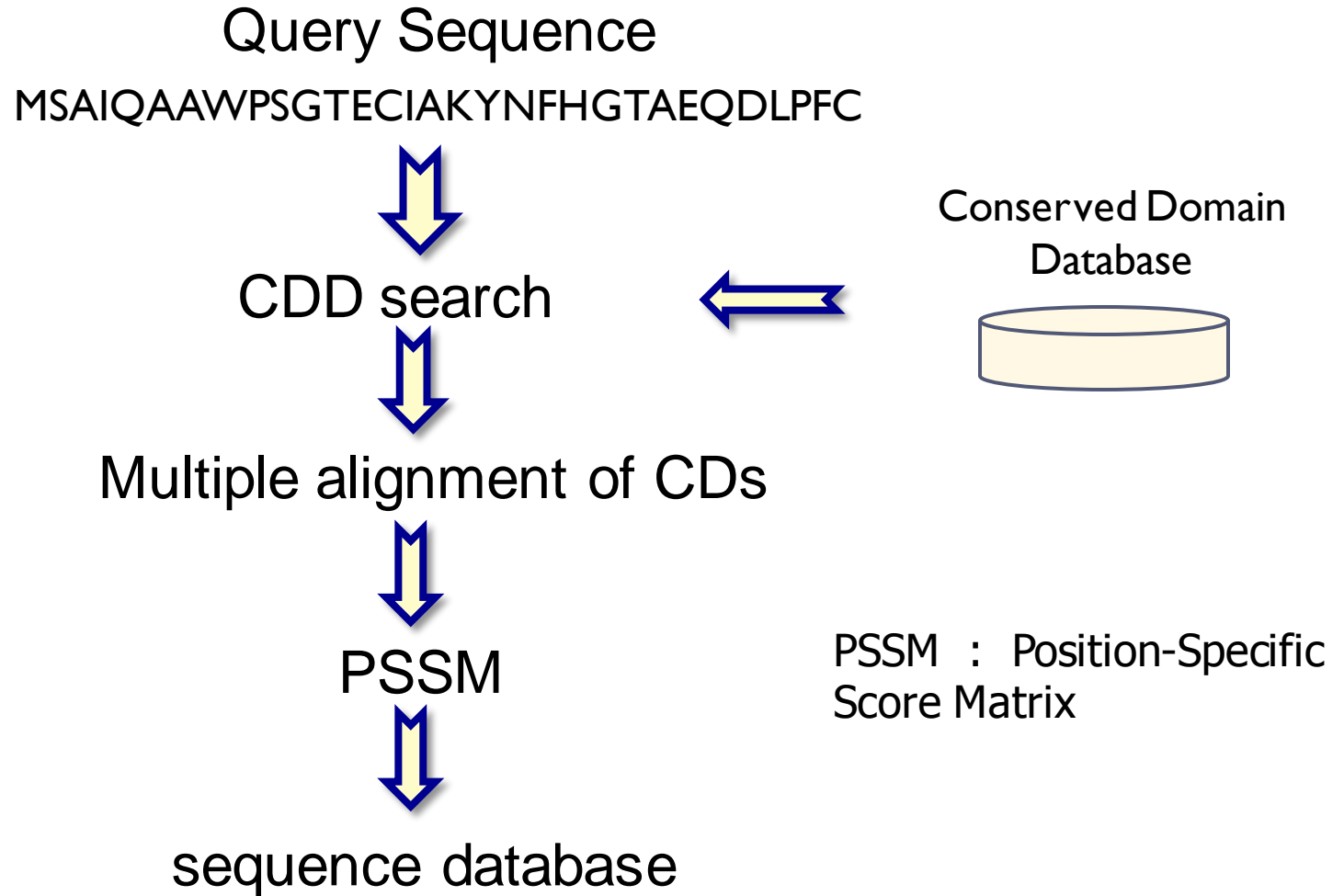


Delta-BLAST

- ▶ **D**omain **E**nhanced **L**ookup **T**ime **A**ccelerated
- ▶ New tool in the spring of 2012
- ▶ DELTA-BLAST is a new, sensitive algorithm, intended for detection of distant protein homologs.

Boratyn GM et al., Biol Direct., 2012

Delta-BLAST



Boratyn GM et al., Biol Direct., 2012