

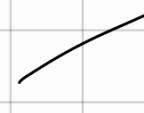
Matching short query to long sequence:

query base pair length: $|q| \approx 200$

reference base pair length: $|r| \approx 50\,000$

number references: $|P| \approx 20\,000$

finding best segment in a reference /

method	extra storage	runtime
- sliding window - size = $ q $ - stride = 1		$\approx 50\,000$ $O(r)$
- dd look up table - k-mer & reference number \Rightarrow to window index - window size and stride adjustable - calculate best fitting segment with a dictionary	65 000 • number of windows	≈ 200 $O(q)$ • $(\text{window size} - \text{stride})$ ≈ 200
- histogram \hookrightarrow keeps no locality \hookrightarrow statistically not significant enough \hookrightarrow not working	65 000 • $ P $	

