

NGS Revolution Overview

Sanger (Traditional)

Throughput	~1 Kb/day
Cost per Mb	~\$500,000
Parallelization	Single reaction
Time	Hours-Days

NGS (Next-Gen)

Throughput	~1 Tb/run
Cost per Mb	~\$0.01
Parallelization	Millions of reads
Time	Hours-Days

NGS Key Advantages

- ✓ Massive parallelization - sequence millions of fragments simultaneously
- ✓ Cost-effective - made genome sequencing affordable (\$1000 genome)
- ✓ High throughput - entire human genome in 1-2 days
- ✓ Comprehensive - discover novel variants and structural changes
- ✓ Versatile - DNA, RNA, epigenetic, metagenomic applications