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Getting started with next-generation sequencing

Next-generation sequencing (NGS) is a powerful tool for answering your research questions, and it's easier than you think.



Expand the scope of your research with a broader view

Compared to targeted approaches, NGS identifies variants across thousands of genes, enhancing discovery power when studying signaling pathways, disease markers, or novel drug targets.¹⁻³

Compared to Sanger sequencing

Up to 1,000x more genes

sequenced in a single assay⁴

Compared to qPCR



in a single assay⁵

Compared to flow cytometry



analyzed in a single experiment^{6,7}



(11)

For us, sequencing changed everything. If we wouldn't have been able to use bulk RNA sequencing, we wouldn't have been able to see what's going on at the chromosomal level in our mutants.

Mercedes Carro, PhD, Postdoctoral Associate Cohen Lab, Cornell University

RNA-Seq: A good place to start

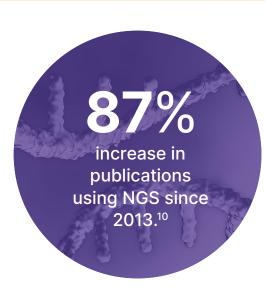
Examine expression of thousands of genes in a single assay to characterize complex pathways.8,9

Get help from NGS professionals

You don't need to be an expert, get started by collaborating with core or service labs during experimental design phase.

No bioinformatics expertise required

Don't be intimidated by large NGS datasets, analysis tools and applications help you understand and interpret your data.



The time for NGS is now

NGS is more accessible than ever, with costs decreasing and publications on the rise. There has never been a better time to start using NGS.



We're ready when you are. Let's get you started!

Learn more about getting started with NGS by downloading our new eBook.

References

- Illumina. NGS vs. qPCR. https://www.illumina.com/science/technology/next-generation-sequencing/ngs-vs-qpcr.html. Accessed March 22, 2023
- 2. Illumina. Benefits of NGS Targeted Resequencing. https://www.illumina.com/content/dam/illumina-marketing/documents/ products/other/targeted-resequencing-guide-770-2016-012.pdf. Accessed March 23, 2023.
- 3. The Scientist. Modern Multiomics: Why, How, and Where to Next? May 15, 2023. https://www.the-scientist.com/sponsored-article/modern-multiomics-why-how-and-where-to-next-71113. Accessed May 22, 2023. Accessed April 10, 2023.
- article/modern-multiomics-why-how-and-where-to-next-71113. Accessed May 22, 2023. Accessed April 10, 2023
 4. Illumina. Key differences between NGS and Sanger sequencing. https://www.illumina.com/science/technology/next-generation-sequencing/ngs-vs-sanger-sequencing.html.
- 5. Illumina. Differences between NGS and qPCR. https://www.illumina.com/science/technology/next-generation-sequencing/ngs-vs-qpcr.html#:~:text=Differences%20Between%20NGS%20and%20qPCR&text=qPCR%20technologies%2C%20the%20key%20 difference,prior%20knowledge%20of%20sequence%20information. Accessed June 12, 2023.
- 6. Olink. Olink Explore HT. https://olink.com/products-services/exploreht/. Accessed July 20, 2023.
- MedPace. Flow cytometry: its role in clinical trial biomarkers. https://www.medpace.com/wp-content/uploads/2023/03/Expert-Insights-Flow-Cytometry-Its-Role-in-Clinical-Trial-Biomarkers.pdf. Accessed June 22, 2023.
- Illumina. High-impact discovery through gene expression and regulation research. https://www.illumina.com/content/dam/illumina-marketing/documents/gated/gene-expression-profiling-e-book-web.pdf. Accessed July 20, 2023.
- Han Y, Gao S, Muegge K, Zhang W, Zhou B. Advanced Applications of RNA Sequencing and Challenges. Bioinform Biol Insights. 2015;9(Suppl 1):29-46. Published 2015 Nov 15. doi:10.4137/BBI.S28991
- 10. Dimensions. Search term: (NGS AND sequencing) OR "next generation sequencing" OR "next-generation sequencing" OR "massively parallel sequencing" OR "massive parallel sequencing" OR "high-throughput sequencing" OR "high throughput sequencing", Specified Publication Year, Publication Type: Article. https://app.dimensions.ai. Accessed April 8, 2023.

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