NEGEDIA®

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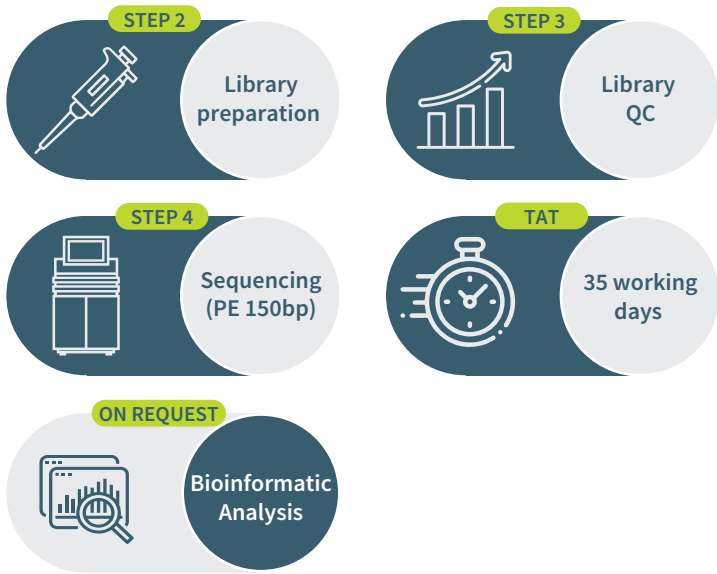
NEGEDIA Atac-Seq

Code NGD0510R

NEGEDIA ATAC-seq (Assay for Transposase-Accessible Chromatin using sequencing) is a simple and scalable method for detecting the unique chromatin landscape associated with a cell type and how it may be altered by perturbation or disease. It requires only a small number of input cells and does not rely on prior knowledge of epigenetic marks or transcription factors. It effectively reveals the underlying molecular and cellular chromatin system dynamics by identifying genomic regions of increased accessibility, potentially mapping transcription factor binding sites and nucleosome positions.

OUR SERVICE INCLUDES



SERVICE HIGHLIGHTS

➤ **Identification of Regulatory Elements**
- ATAC-seq can pinpoint regions of open chromatin, such as promoters, enhancers, and transcription factor binding sites, which are crucial for gene regulation.

➤ **Characterization of Cell States**
- By comparing ATAC-seq profiles across different cell types or conditions, researchers can identify cell-specific regulatory elements and gain insights into cellular identity and differentiation.

➤ **Disease Mechanisms**
- ATAC-seq can be used to study the chromatin accessibility changes associated with diseases such as cancer, autoimmune disorders, and developmental disorders, providing insights into disease mechanisms and potential therapeutic targets.

➤ **Functional Genomics**
- ATAC-seq can be combined with other genomic techniques such as RNA-seq and ChIP-seq to comprehensively study gene regulation networks and understand how chromatin accessibility relates to gene expression and protein-DNA interactions.

STARTING MATERIALS

SERVICE CODE

NGD0510R

STARTING MATERIAL

Frozen Cell Suspension (2 cryovials with 1ml/ 100.000 cells)

QUALITY REQUIREMENTS

- Resuspension Buffer: Cryopreservation media (e.g. cell culture media supplemented with 10% DMSO). The concentration of DMSO can vary depending on the type of cell or cell line.
- Cells should be intact and with high viability, > 90%

STORAGE & SHIPPING

- Storage: Liquid Nitrogen/ - 80 °C
- Shipping: on dry ice
- Samples have to be sent in 2ml Cryo vials. Tubes of different size may not be used.

For low cells quantity please contact our Customer Service at **service@negedia.com**

EXPERIMENT DESIGN SUGGESTIONS

For optimal results, submit at least 2 biological replicates.

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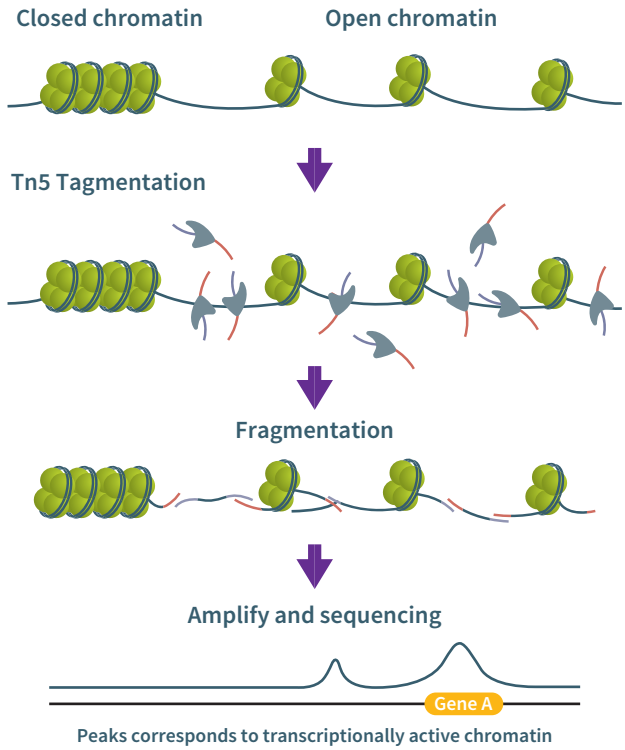
ATAC SEQUENCING METHOD

ATAC-seq is a state of the art method for rapid and sensitive epigenomic profiling.
Its key features include:

- **Rapid and Sensitive Profiling:** High-throughput sequencing for quick detection of epigenomic features.
- **Comprehensive Analysis:** Simultaneously profiles open chromatin regions, DNA-binding proteins, and nucleosome positioning.
- **Innovative Enzymatic Approach:** Uses a hyperactive Tn5 transposase to fragment DNA and ligate sequencing adapters at accessible sites.
- **Streamlined Protocol:** Provides a simple and efficient workflow for a multidimensional assessment of the regulatory chromatin landscape.
- **Research-Driven Tool:** Offers invaluable insights for advancing studies in epigenetics and gene regulation.



BIOINFORMATICS ANALYSIS

STANDARD BIOINFORMATIC ANALYSIS (included in NGD0510R)

- Demultiplex
- Quality report
- Raw FastQ Files

ADVANCED BIOINFORMATIC ANALYSIS OPTIONAL FOR ADDITIONAL FEE II LEVEL (NGD1001R)

- Map chromatin accessibility across the genome
- Identify potential regulatory elements and transcription factor binding sites
- Differentially peaks calling

Deliverables: Interactive plots and reports

NEGEDIA® is a cutting-edge NGS laboratory built on the Telethon Foundation's 30 years of expertise in rare genetic disease research. We are committed to making genomics accessible across the Life Sciences, providing high-precision sequencing and bioinformatics solutions for both research and clinical applications.

» **Clinical Services:** Supporting laboratories, clinics, and hospitals in leveraging NGS for clinical research and diagnostic advancements.

» **Research Services:** Supporting research institutes and universities at every stage, from experimental planning to advanced bioinformatics analysis.

For more information or to discuss a project, contact us at **info@negedia.com**

GENOMICS AND BEYOND

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