

ATAC-seq (Assay for Transposase-Accessible Chromatin)

Overview

- Map open chromatin regions genome-wide
- Identify active regulatory elements
- Requires fewer cells than ChIP-seq (500-50,000)
- No antibodies needed - uses Tn5 transposase

ATAC-seq Advantages

Technical Benefits

- Fast protocol (~3 hours)
- Low cell input
- No immunoprecipitation
- Less hands-on time

Biological Insights

- Nucleosome positioning
- TF footprinting
- Regulatory landscape
- Gene activity prediction

Cell Input

500-50K

Protocol Time

~3 hours

Read Depth

50M reads

Popular for single-cell studies (scATAC-seq) and epigenetic profiling