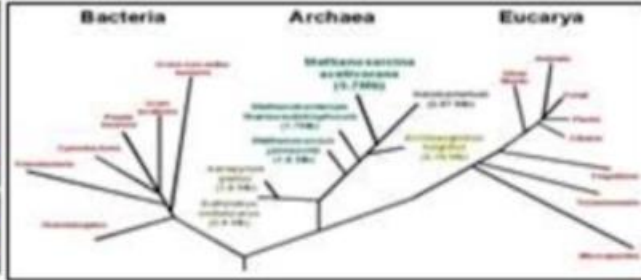
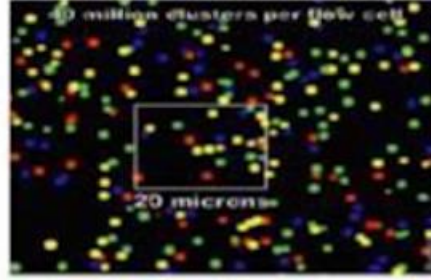




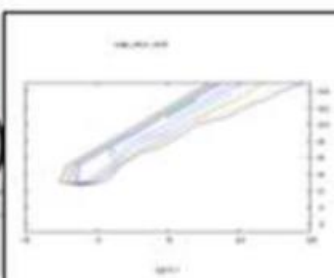
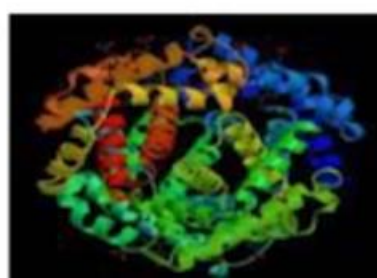
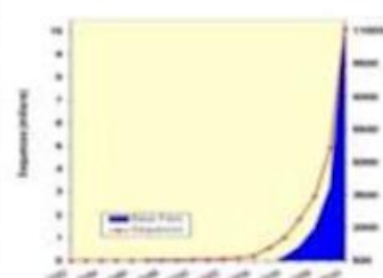
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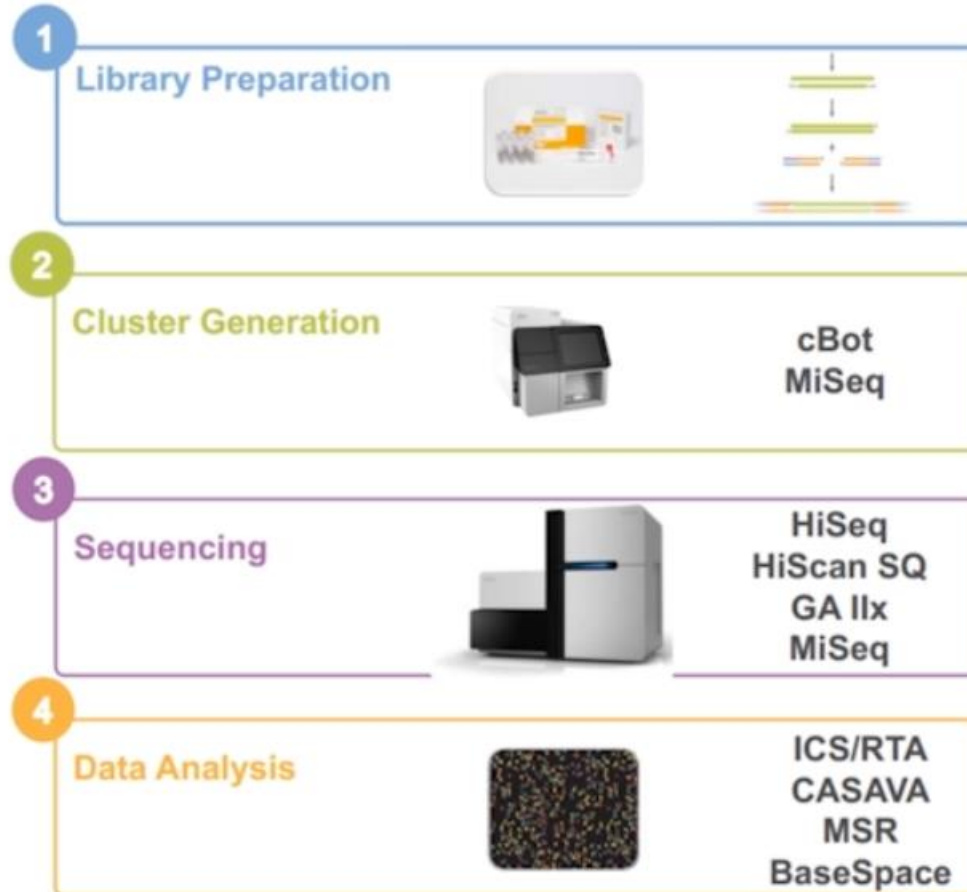
# Introduction to HiSeq 2500 and MiSeq

何尧 Yao He 赵博洵 Boxun Zhao

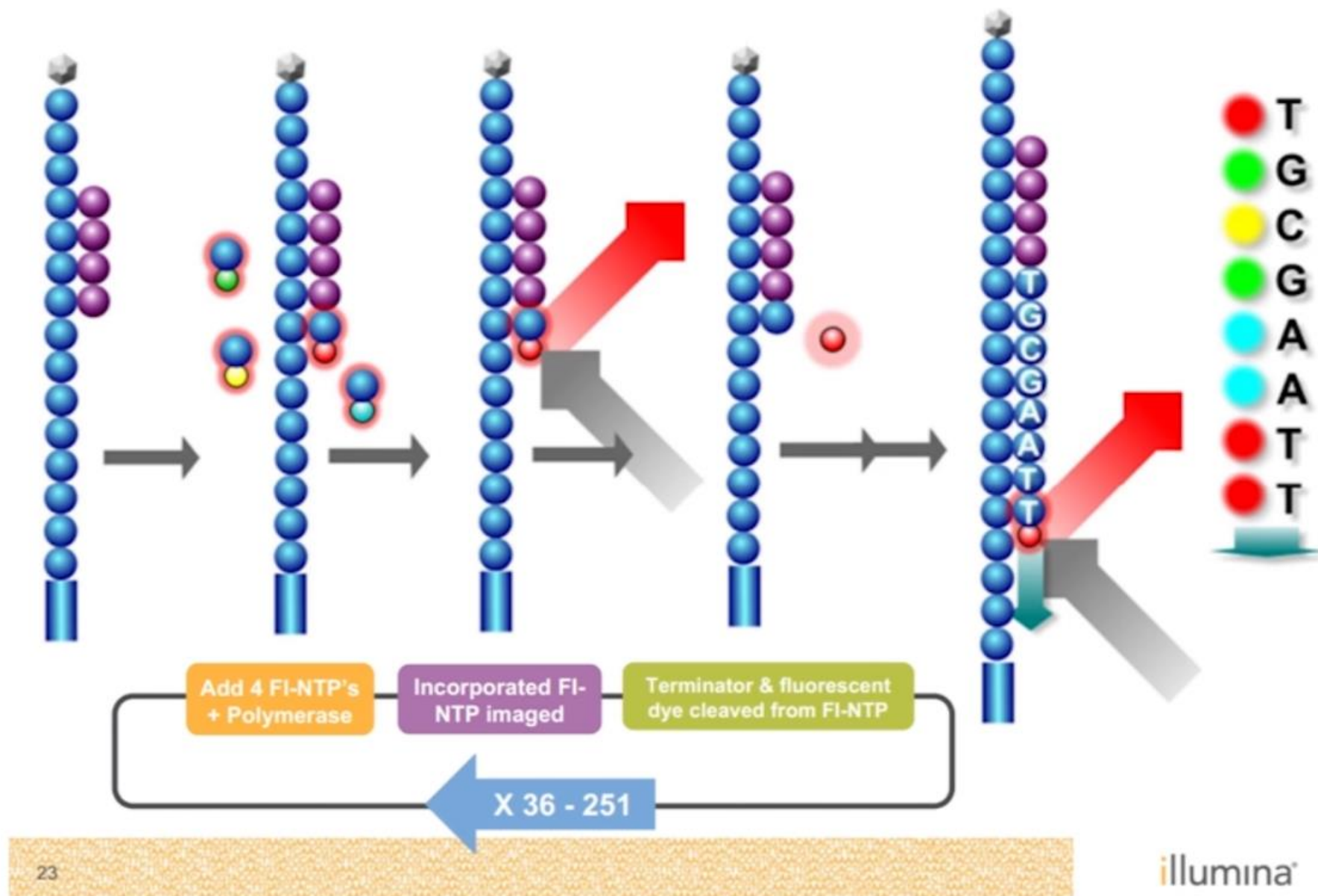
National Institute of Biological Science, Beijing



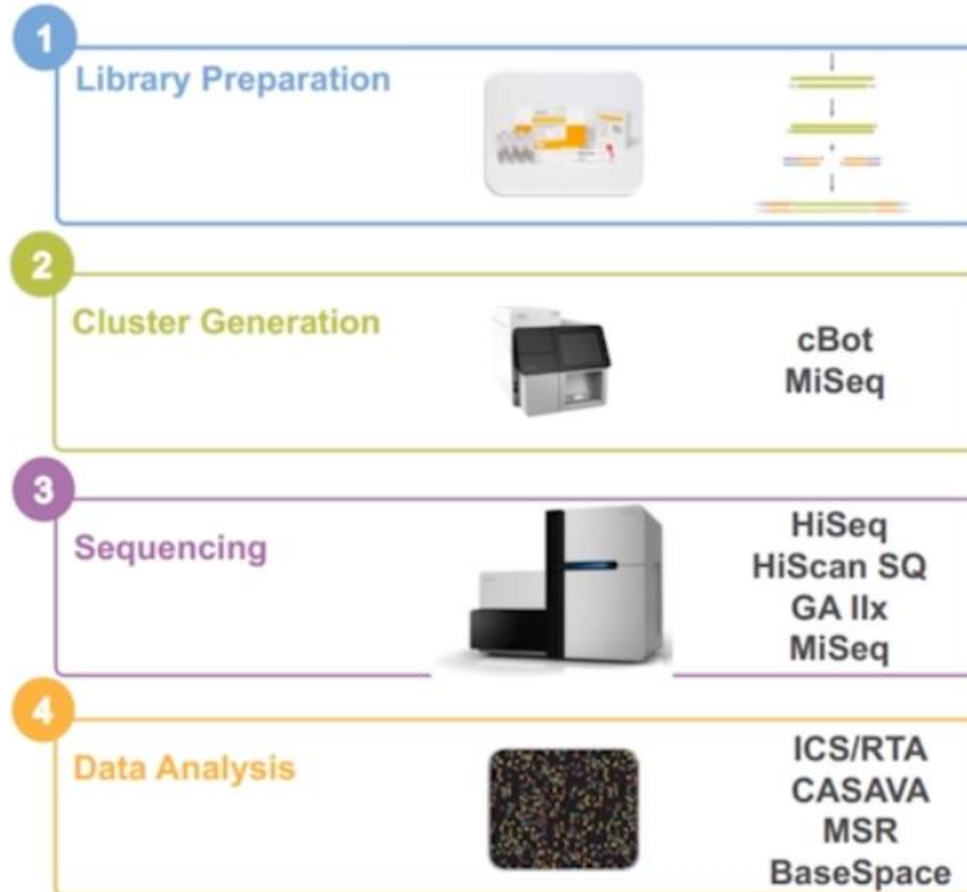
# Illumina Sequencing Workflow



## Sequencing By Synthesis

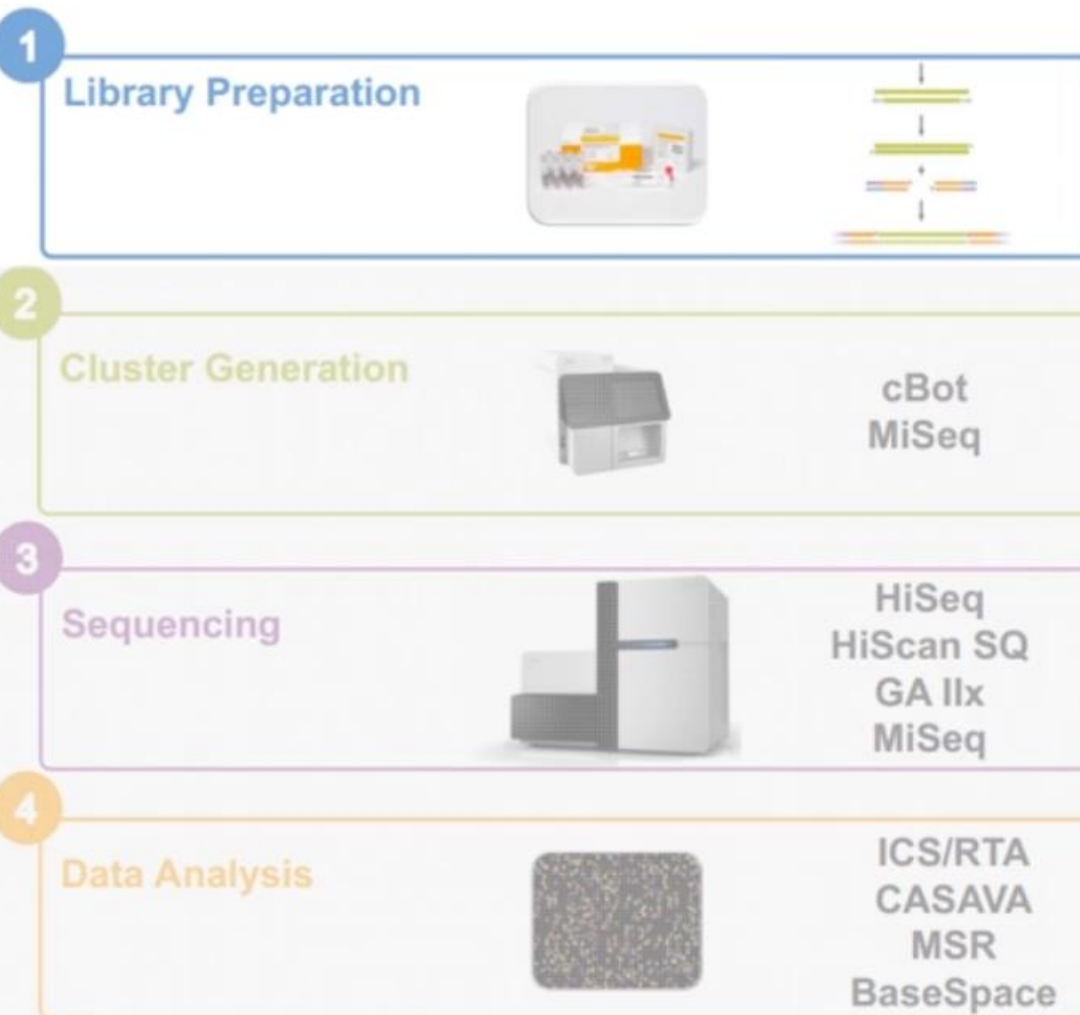


# Illumina Sequencing Workflow





# Illumina Sequencing Workflow



## Sample Prep is Critical for Successful sequencing



Dual Index Library shown

The aim of the sample prep step is to obtain nucleic acid fragments with adapters attached on both ends

# Illumina Sequencing Workflow

1

Library Preparation



2

Cluster Generation



cBot  
MiSeq

3

Sequencing



HiSeq  
HiScan SQ  
GA IIx  
MiSeq

4

Data Analysis



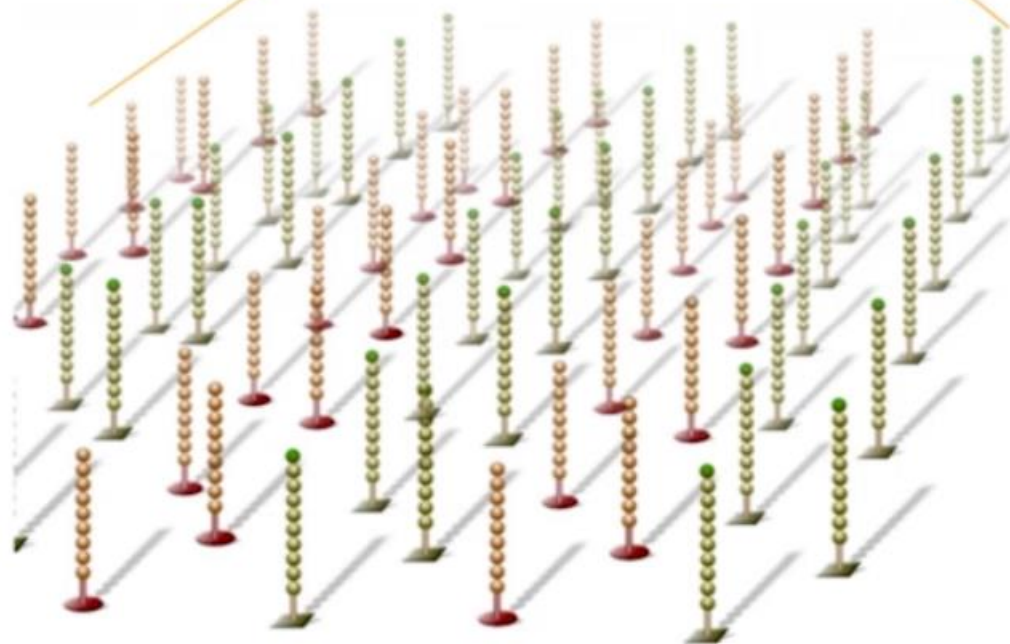
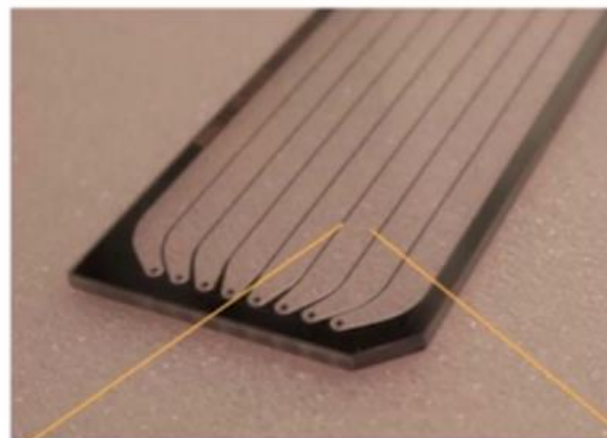
ICS/RTA  
CASAVA  
MSR  
BaseSpace

## What is a Flow Cell?

Cluster generation occurs on a flow cell

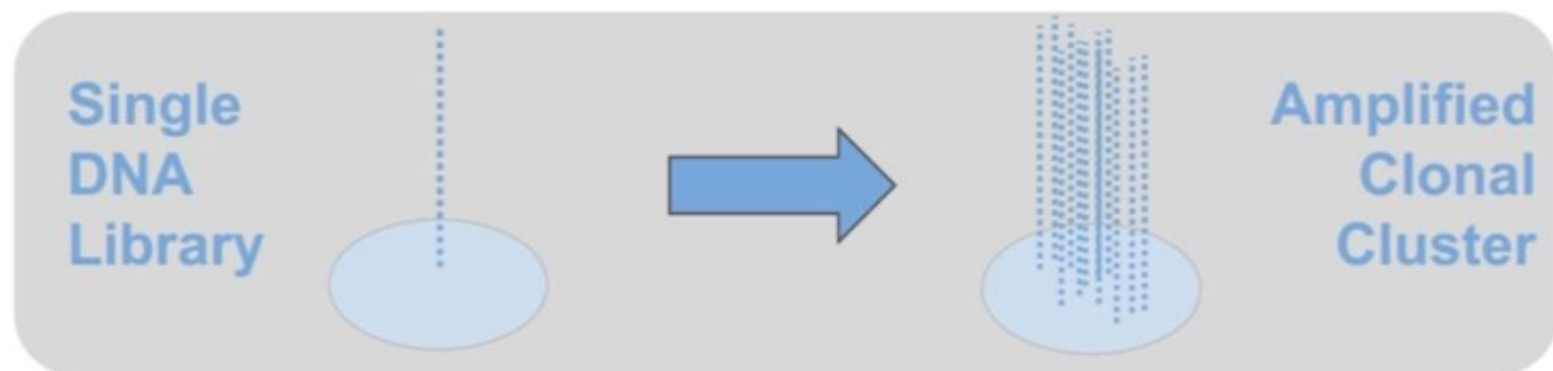
A flow cell is a thick glass slide with channels or lanes

Each lane is randomly coated with a lawn of oligos that are complementary to library adapters





## Instrumentation



**cBot**



**Sequencer**



# Illumina Sequencing Workflow

1

Library Preparation



2

Cluster Generation



cBot  
MiSeq

3

Sequencing



HiSeq  
HiScan SQ  
GA IIx  
MiSeq

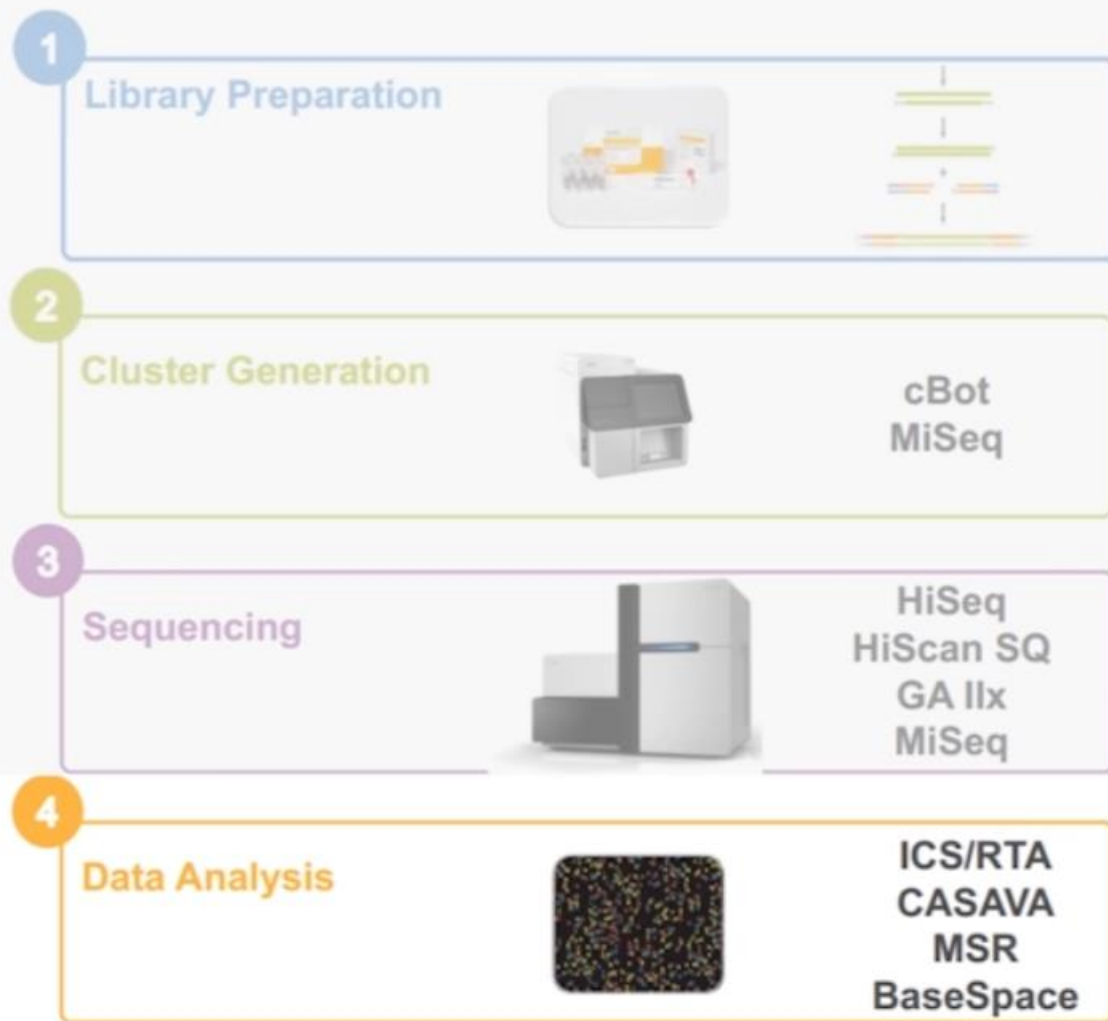
4

Data Analysis


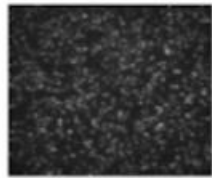







# **Introduction to MiSeq**

# Illumina Sequencing Workflow



# Primary and Secondary Analysis Overview

Analysis Type	Software	Outputs
Sequencing	 ICS/RTA	 Images/TIFF files
Primary Analysis	 ICS/RTA	 Intensities    Base Calling
Secondary Analysis	  CASAVA	 Alignments and Variant Detection

MiSeq Reporter