ATOPlex Platform FAQ

What's targeted sequencing

Targeted sequencing is a method for selectively investigating regions of interest, able to detect known or unknown variants. Two common targeted sequencing methods are capture probe and multiplex PCR. ATOPlex enriches regions of interest with a highly multiplex PCR technology.

What can ATOPlex do

ATOPlex Platform designs a library prep kit based on multiplex PCR technology for targeted sequencing, including a set of multiplex PCR primer panel and corresponding amplification reagent. Such reagent, which applies to Infection, agriculture, food safety and so on, can specifically amplify targeted regions and prepare the NGS library, detecting SNV/Indel/CNvs.

What's in a ATOPlex Customized panel Kit

Mainly two parts: one is primer panel; the other is universal multiplex PCR library prep kit.

Is there any analysis software in ATOPlex products

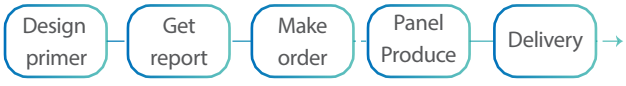
Only customized primer panel and universal library prep kit currently. Not includes analysis software.

ATOPlex reagent kit detects LOD

LOD of ATOPlex mutation frequency detection is 3-5% , which limited by NGS accuracy[1].

How to order the ATOPlex customized panel kit

Firstly, designing the primer on ATOPlex Designer (atoplex.mgi-tech.com) . Then get corresponding code in the design report. Make an order with the code. We will ship the customized panel kit in 30 work days.



Primer design-regular design

Chose hg19 or hg37 genome. Offer the name of genome, the position information and rs number to design the primer panel. The number of total primer design is no more than 2000. Please contact our technology group (MGI_ATOPlex@MGI-tech.com) if over 2000.

Primer species-customized design

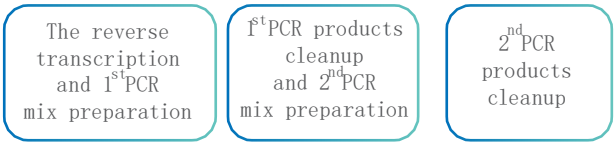
Complete customized design through upload reference genome. The customized genome shall be less than 4Mb. Please contact our technology groupif over 4 Mb: (MGI_ATOPlex@MGI-tech.com)

The process of targeted library preparation

ATOPlex contains all reagents from nucleic acid to linear dsDNA library prep, with two PCR steps, including 4 individual operations.
Customer shall order corresponding circularization kit and sequencing kit.

Lab requirement

ATOPlex prepare library with two PCR steps, which requires three lab areas (front, middle and end). There would be risk of sample contamination if the area division is not clear.



How many mixed samples does it support

Max to 4608-samples mixed sequencing

Recommended sample input

10 ng is recommended for DNA&RNA based on targeted capture in human field. The input can be adjusted according to different applications. In some fields, the minimum modular input can be 10 genome copies.

Sequencing read length and amplicon size

As for FFPE sample, 100-200bp amplicon is recommended; PE100 is recommended. As for cfDNA, 60-120bp amplicon is recommended; PE100 is recommended. As for genome DNA, 100-300bp is recommended; PE100 or PE150 is recommended.

For research use only. Not for use in diagnostic procedures.

[1] P., ... & Zhang, D. Y. (2021). Selective multiplexed enrichment for the detection and quantitation of low-fraction DNA variants via low-depth sequencing. Nature Biomedical Engineering, 1-12.