

Custom NEXTflex™ Amplicon Design and Panel Development

The NEXTflex™ Custom Amplicon Panels are fully customizable, amplicon-based assays for targeted resequencing on the Illumina or Ion Torrent sequencing platforms. The NEXTflex Amplicon Panels allow researchers to sequence up to 2,000 amplicons using a simple workflow, covering regions as little as 1 kb up to 500 kb. This highly targeted approach offers unparalleled efficiency for discovering, validating, and screening genetic variants. Custom DNA and RNA panels can be designed for use with fresh or frozen tissue, FFPE and cell free samples.

- 100% coverage of targeted regions
- High quality primer design - NEXTflex™ Amplicon Studio™ delivers panels with >90% of bases covered at 0.2x of mean coverage and >90% reads on target
- Validation and optimization - every panel is optimized to increase uniformity and decrease off-target reads
- Verified - Panels may be validated using a customer's samples
- Complete solution - panels are delivered with designed primers, library construction and amplification reagents and barcodes for multiplexing
- Up to 384 sample barcodes available for multiplexing on Illumina platforms. 64 sample barcodes available for Ion platforms.
- Scientist-level technical support throughout project design and delivery

	NEXTFLEX CUSTOM AMPLICON PANELS
Amplicon Plexity	2000 +
Input Requirement	As low as 20 ng
FFPE Compatibility	Yes
Cell Free DNA Compatibility	Yes
Species	Human, rat, mouse, and bovine
Content Range	Up to 500 kb
Amplicon Size	70 - 500 bp
Instrument	Illumina or Ion Torrent based
Time	2 - 4 hours
Kit Size (Samples)	96+

SELECTION OF TARGETS**CUSTOMER APPROVAL OF SELECTED TARGETS**
(BEDFILES OF TARGET WITH INSTRUCTIONS WILL BE PROVIDED)**PRIMER DESIGN**
(ADDITIONS AND MODIFICATION OF TARGET ARE POSSIBLE)**PRIMER SYNTHESIS****1ST ROUND OF TEMPLATE LIBRARY VALIDATION****1ST ROUND OF SEQUENCING VALIDATION -
ILLUMINA MISEQ SEQUENCING AND DATA ANALYSIS****PANEL OPTIMIZATION -
PRIMER REDESIGN TO DECREASE OFF-TARGET READS
AND INCREASE UNIFORMITY****2ND ROUND OF TEMPLATE LIBRARY VALIDATION**
(IF NECESSARY)**2ND ROUND OF SEQUENCING VALIDATION -
ILLUMINA MISEQ SEQUENCING AND ANALYSIS**
(IF NECESSARY)**DELIVERY OF PROJECT REPORT, FULL AMPLICON PANEL,
LIBRARY CONSTRUCTION KIT, AND BARCODES****NEXTflex™ Amplicon Studio™**

Quality primer design is the most critical aspect of PCR-based targeted sequencing. Bioo Scientific's proprietary primer design software harnesses the power of computation and exploits the relationship between all user-specified arguments. Well defined primer selection criteria, robustness, and an **interactive and flexible design fueled by machine learning**, allows Bioo Scientific to produce high quality candidate primers for any target. **NEXTflex™ Amplicon Studio's™ novel scoring system** considers a range of factors including base composition, coverage, primer interaction, specificity and several other proprietary metrics. This scoring system allows for a formal quality comparison between all primers in a set. Another unique software feature of NEXTflex Amplicon Studio is the design of at least **ten primer pairs per amplicon**. Having multiple primer pair options is necessary in downstream analysis since non-specific interactions can be resolved with simple substitutions, making the entire design a more fluent process.

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