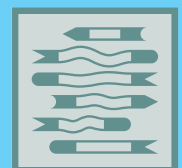




Next-Generation Sequencing

Improve your laboratory workflow



Library Construction with Improved Reproducibility



NGS library construction

How can I ensure reliable and reproducible sequencing results?

How can I increase efficiency of my NGS lab?

Insufficient quantity and quality of nucleic acid input samples!
What can I do?

Are you aware of negative effects caused by leachables or extractables from consumables?

Next-generation sequencing (NGS) requires optimal, thorough sample preparation upstream of the sequencing process to ensure the best possible results. This includes nucleic acid purification, magnetic bead-based cleanups, enzymatic incubations at various temperatures, and small-volume liquid handling. Eppendorf offers a broad range of high-quality, smart consumables and precise and accurate instrumentation for all the steps upstream of sequencing – from sample generation and storage to sample preparation/purification, library preparation and quantification, and PCR amplification.

Library Construction with Improved Reproducibility

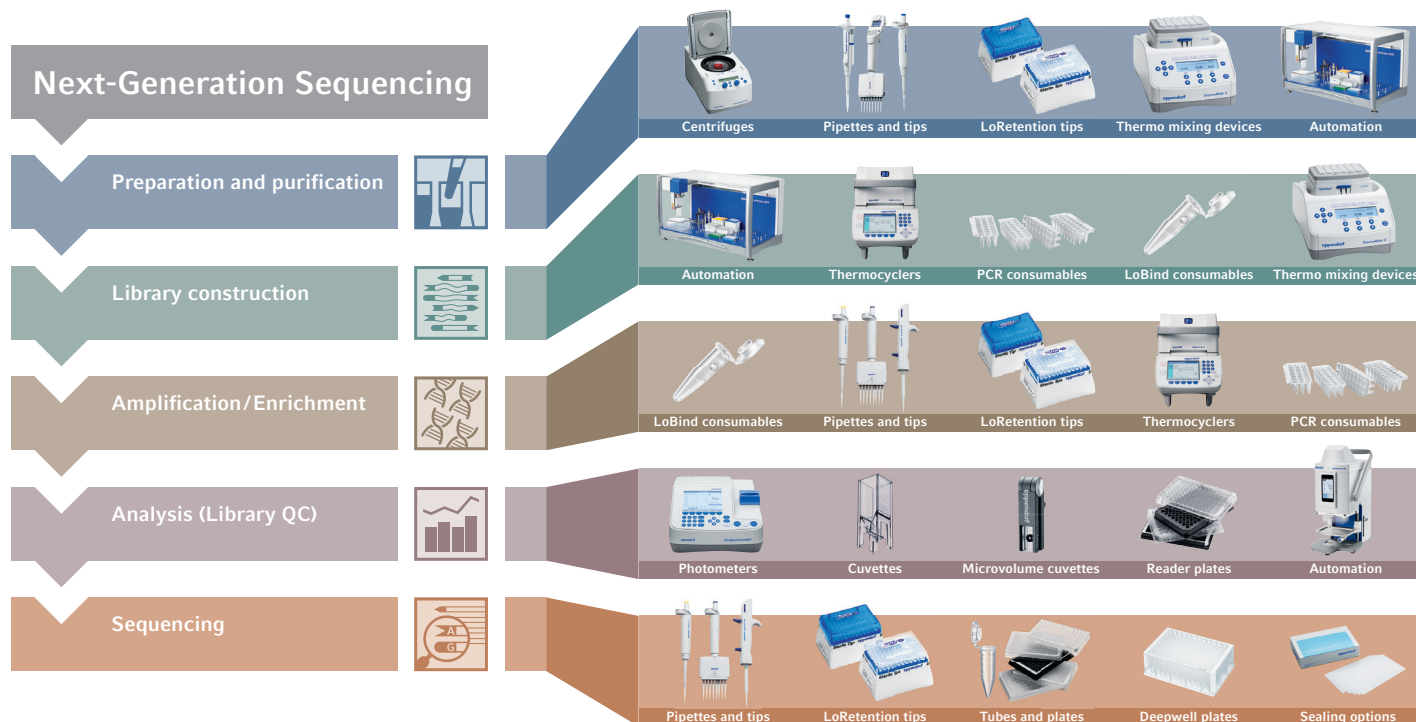


NGS library construction

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Most frequent problems/challenges	Possible solution	Eppendorf solution	Eppendorf BioSpectrometer®, Mastercycler® Pro S
Questionable sequencing results <ul style="list-style-type: none">> Inconsistent library quality and yields> Variable sequencing results> Ensuring sensitive and reliable quantification of nucleic acid	Minimize the risk: <ul style="list-style-type: none">> Use standardized library prep methods> Qualify personnel through thorough training on processes> Use high quality, calibrated equipment> Use automated library preparation> Use the right method (e.g. fluorescence dyes) for quantification	Eppendorf product benefits: <ul style="list-style-type: none">> Preprogrammed and optimized library prep methods for the epMotion 5075t> PCR cyclers with excellent block homogeneity and evaporation protection> High-quality PCR consumables> Eppendorf BioSpectrometer fluorescence	
Most frequent problems/challenges	Possible solution	Eppendorf solution	epMotion® 5075t, TS and TM Tools, gripper
Inefficient workload <ul style="list-style-type: none">> Labor-intensive, tedious library preparation> Need to process various library prep workflows> Error-prone long manual procedures> Cross contamination due to (previous) PCR products> Limited throughput with manual processing> Instrument downtime due to failure or maintenance	Minimize the risk: <ul style="list-style-type: none">> Plan manual work thoroughly> Reduce hands-on time through walk-away automation> Use flexible equipment to implement and optimize different methods> Separate of pre and post PCR processes spatially> Ensure redundancy or backup instrumentation	Eppendorf product benefits: <ul style="list-style-type: none">> epMotion 5075t can free up your time> epMotion features open architecture and easy-to-use software> Use epMotion 5073 as post-PCR system> Plug'n'prep method can be downloaded> epServices keep your products running and minimize downtime> Tools can be sent in for calibration; no downtime due to replacement tools	
Most frequent problems/challenges	Possible solution	Eppendorf solution	MagSep kits, Consumables, LoBind Tubes
Insufficient input sample <ul style="list-style-type: none">> Degraded RNA or DNA> Inefficient nucleic acid purification> Limited amounts of primary samples> Sample loss during long-term storage	Minimize the risk: <ul style="list-style-type: none">> Avoid manual processing to reduce DNase/RNase contamination risk> Use suitable purification products and protocols> Reduce losses caused by poor recovery or degradation> Increase library yields through optimized workflows	Eppendorf product benefits: <ul style="list-style-type: none">> Use epMotion for nucleic acid purification> Consumables with certified PCR clean quality (DNase/RNase free)> Purification with MagSep Reagent kits> Eppendorf LoBind® Consumables reduce DNA and enzyme absorption by plastic wall	
Most frequent problems/challenges	Possible solution	Eppendorf solution	Consumables
Issues related to leachables & extractables <ul style="list-style-type: none">> Potential contamination of valuable reagents and precious samples through substances released from plastics Inhibition of enzymatic reactions> Interference with sensitive assays (QC, sequencing, fluorescence-based)> Release of leachables during prolonged hybridization at elevated temperatures	Minimize the risk: <ul style="list-style-type: none">> Validate each lot of your consumables for the absence of additives> Request a »free of additives« certificate from your consumable supplier	Eppendorf product benefits: <ul style="list-style-type: none">> Use Eppendorf consumables that are certified free of plasticizers, biocides and slipping agents	

Being in Process



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