

# NEBNext<sup>®</sup> Ultra<sup>™</sup> II Reagents & Kits

THE CORE OF YOUR NGS LIBRARY PREP



NEW ENGLAND  
**BioLabs<sup>®</sup>**

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stay GENUINE



# The heart of the matter

As sequencing technologies improve and applications expand, the need for compatibility with ever-decreasing input amounts and sub-optimal sample quality grows. Scientists must balance reliability and performance with faster turnaround, higher throughput and automation compatibility.

The NEBNext Ultra II workflow lies at the heart of NEB's portfolio for next generation sequencing library preparation. NEBNext Ultra II kits and modules for Illumina® are the perfect combination of reagents, optimized formulations and simplified workflows, enabling you to create DNA or RNA libraries of highest quality and yield, even when starting from extremely low input amounts.

The Ultra II workflow is central to many of our NEBNext solutions, including:

- Ultra II DNA & FS DNA Library Prep
- Single Cell/Low Input RNA Library Prep
- Enzymatic Methyl-seq
- Module products for each step in the workflow
- Ultra II RNA & Directional RNA Library Prep

## The NEBNext Ultra II Workflow:



## Advantages of the Ultra II Workflow:

- Learn one central workflow and apply it to a suite of different applications
- Save time with streamlined, modular workflows, reduced hands-on time, and automation compatibility
- Benefit from low input amount requirements, fewer PCR cycles and uniform GC-coverage in all applications

## What users are saying:

“We’ve been testing EM-seq on a variety of inputs, platforms, and samples, and it shows more even coverage across CpG islands, the whole genome, and also greater detection of CpG sites across the genome vs. WGBS.”

– Christopher Mason,  
Weill Cornell Medical School  
New York

“NEB is currently the only company, which is offering really ‘‘automation friendly’’ library preparation kits. The volumes of components are calculated to cover for unavoidable deadvolumes, reactant volumes are in range of most automated platforms. The stability of the NEBNext chemistry allows a broad range of automation strategies”

– Dr. Jürgen Zimmermann,  
Senior Engineer - Automation  
GeneCore EMBL Heidelberg, Germany

”

# The NEBNext Ultra II Workflow

The Ultra II workflow is available in a convenient kit format, or as separate modules – it is easily scalable and automated on a range of liquid handling instruments. The NEBNext Ultra II workflow has been cited in thousands of publications, as well as a growing number of preprints and protocols related to COVID-19. Citation information and extensive performance data for each product is available on [www.neb.com](http://www.neb.com).

## Choose the convenient

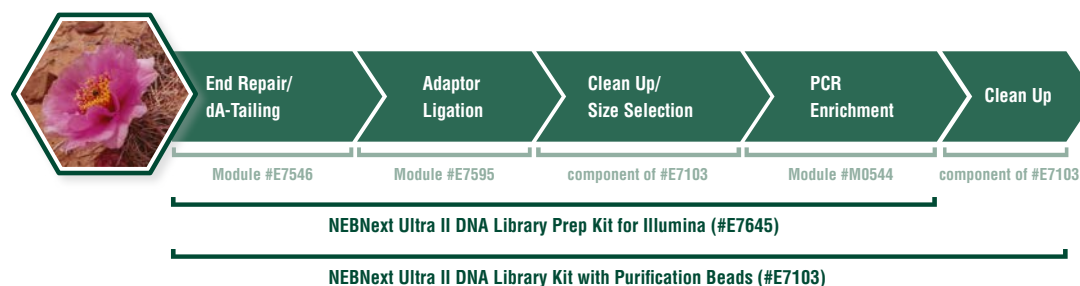
### NEBNext Ultra II DNA Library Prep Kit for:

- Whole Genome Sequencing
- Standard & Low Input Sequencing
- ChIP-seq, NICE-seq, Cut&Run-seq
- Exome Capture
- Targeted Sequencing
- FFPE Material
- cfDNA

## Features

- Highest library yields and quality
- Fewer PCR cycles
- Broad input range (500 pg to 1 µg sheared DNA)
- Less than 15 minutes of hands-on time
- Workflow complete in ~2:30 – 3:00 hours

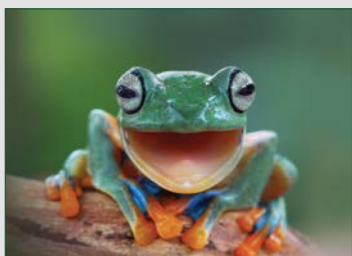
## The Ultra II DNA Workflow is Available in Convenient Kit Formats or Modules:



- Hands on time: <15 minutes
- Total time: ~2:30 – 3:00 hrs

## The Ultra II DNA Workflow is the Core of:

Enzymatic  
DNA Fragmentation  
Library Prep



You'll be thrilled  
to pieces.

Directional & Non-  
directional RNA-seq



Even more *from* less –  
now for RNA.

Enzymatic  
Methyl-seq  
(bisulfite-free)



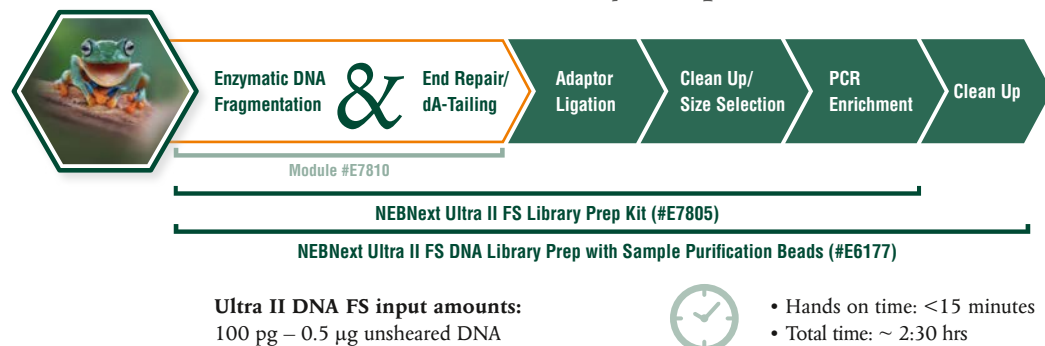
Heads up!

Single Cell/  
Low Input RNA  
Library Prep

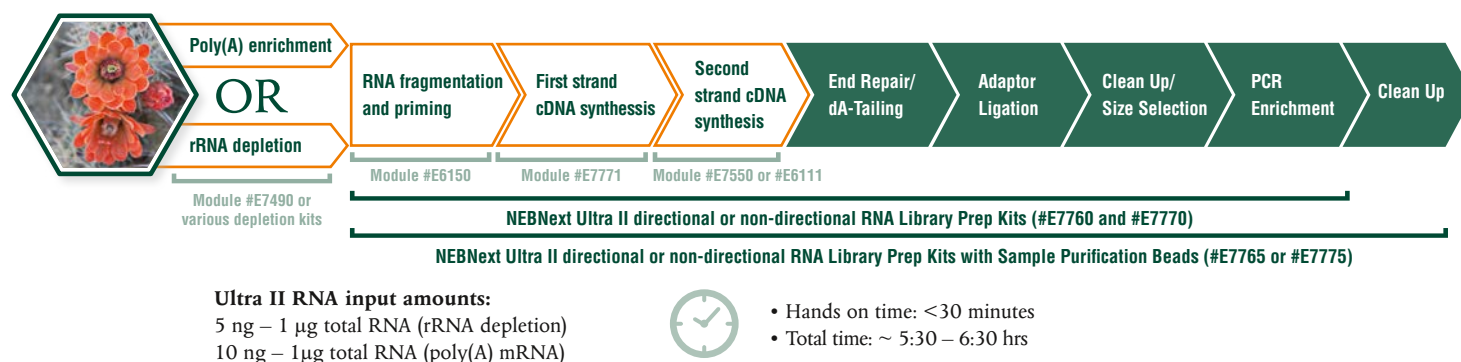


How low can you go?

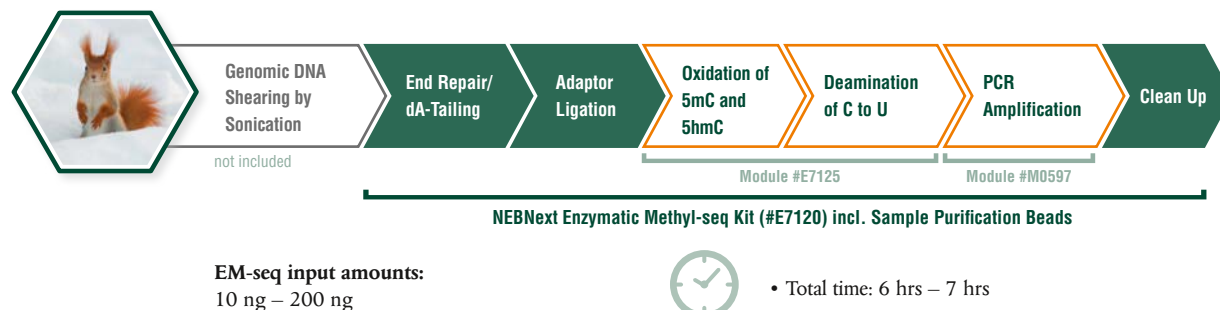
## NEBNext Ultra II FS DNA Library Prep Workflow:



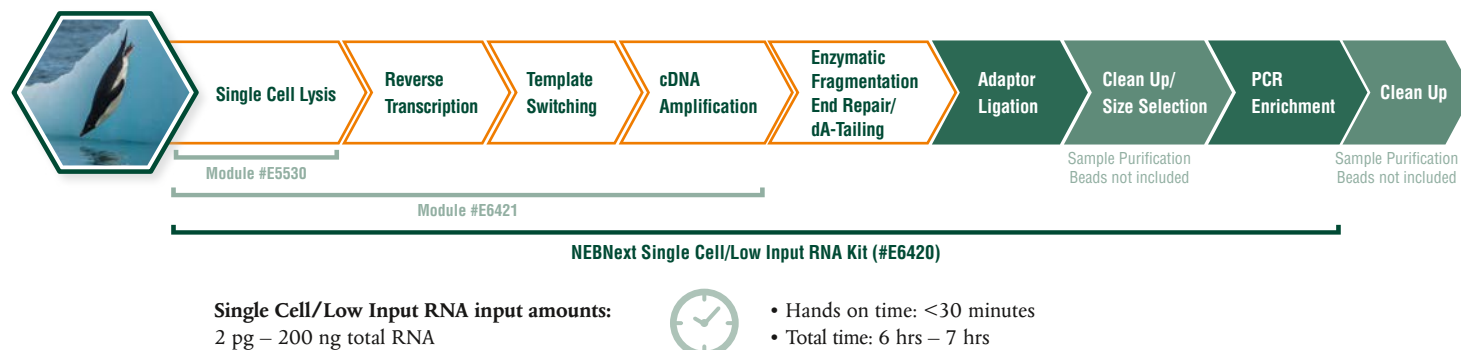
## NEBNext Ultra II Directional RNA or Non-directional RNA Workflow:



## NEBNext Enzymatic Methyl-seq Workflow:



## NEBNext Single Cell/Low Input RNA Workflow:





## Ordering Information

DNA KITS		NEB #	SIZE
DNA	NEBNext Ultra II FS DNA Library Prep Kit for Illumina	E7805S/L	24/96 reactions
	NEBNext Ultra II FS DNA Library Prep with Sample Purification Beads	E6177S/L	24/96 reactions
	NEBNext Ultra II DNA Library Prep Kit for Illumina	E7645S/L	24/96 reactions
	NEBNext Ultra II DNA Library Prep with Sample Purification Beads	E7103S/L	24/96 reactions
	NEBNext Enzymatic Methyl-seq Kit	E7120S/L	24/96 reactions
RNA KITS		NEB #	SIZE
Directional RNA	NEBNext Ultra II Directional RNA Library Prep Kit for Illumina	E7760S/L	24/96 reactions
	NEBNext Ultra II Directional RNA Library Prep with Sample Purification Beads	E7765S/L	24/96 reactions
Non-directional RNA	NEBNext Ultra II RNA Library Prep Kit for Illumina	E7770S/L	24/96 reactions
	NEBNext Ultra II RNA Library Prep with Sample Purification Beads	E7775S/L	24/96 reactions
Single Cell	NEBNext Single Cell/Low Input RNA Library Prep Kit for Illumina	E6420S/L	24/96 reactions
MODULES & ENZYMES		NEB #	SIZE
DNA	NEBNext Enzymatic Methyl-seq Conversion Module	E7125S/L	24/96 reactions
	NEBNext Ultra II End Repair/dA-Tailing Module	E7546S/L	24/96 reactions
	NEBNext Ultra II Ligation Module	E7595S/L	24/96 reactions
	NEBNext Ultra II FS DNA Module	E7810S/L	24/96 reactions
RNA	NEBNext Single Cell Lysis Module	E5530S	96 reactions
	NEBNext Magnesium RNA Fragmentation Module	E6150S	200 reactions
	NEBNext Ultra II RNA First Strand Synthesis Module	E7771S/L	24/96 reactions
	NEBNext Ultra II Directional RNA Second Strand Synthesis Module	E7550S/L	24/96 reactions
	NEBNext Ultra II Non-directional RNA Second Strand Synthesis Module	E6111S/L	20/100 reactions
	NEBNext Single Cell/Low Input cDNA Synthesis and Amplification Module	E6421S/L	24/96 reactions
Amplification	NEBNext Ultra II Q5 Master Mix	M0544S/L	50/250 reactions
	NEBNext Q5U Master Mix	M0597S/L	50/250 reactions
COMPANION PRODUCTS		NEB #	SIZE
Oligos	NEBNext Multiplex Oligos for Illumina (96 Unique Dual Index Primer Pairs)	E6440S/L	96/384 reactions
	NEBNext Multiplex Oligos for Illumina (96 Unique Dual Index Primer Pairs Set 2)	E6442S/L	96/384 reactions
	NEBNext Multiplex Oligos for Enzymatic Methyl-seq (Unique Dual Index Primer Pairs)	E7140S/L	24/96 reactions
	NEBNext Multiplex Oligos for Illumina (Dual Index Primers Set 1)	E7600S	96 reactions
	NEBNext Multiplex Oligos for Illumina (Dual Index Primers Set 2)	E7780S	96 reactions
	NEBNext Multiplex Oligos for Illumina (Index Primers Set 1)	E7335S/L	24/96 reactions
	NEBNext Multiplex Oligos for Illumina (Index Primers Set 2)	E7500S/L	24/96 reactions
	NEBNext Multiplex Oligos for Illumina (Index Primers Set 3)	E7710S/L	24/96 reactions
	NEBNext Multiplex Oligos for Illumina (Index Primers Set 4)	E7730S/L	24/96 reactions
	NEBNext Multiplex Oligos for Illumina (96 Index Primers)	E6609S/L	96/384 reactions
RNA Depletion	NEBNext rRNA Depletion Kit v2 (Human/Mouse/Rat)	E7400S/L/X	6/24/96 reactions
	NEBNext rRNA Depletion Kit v2 (Human/Mouse/Rat) with RNA Sample Purification Beads	E7405S/L/X	6/24/96 reactions
	NEBNext Globin & rRNA Depletion Kit (Human/Mouse/Rat)	E7750S/L/X	6/24/96 reactions
	NEBNext Globin & rRNA Depletion Kit (Human/Mouse/Rat) with RNA Sample Purification Beads	E7755S/L/X	6/24/96 reactions
	NEBNext rRNA Depletion Kit (Bacteria)	E7850S/L/X	6/24/96 reactions
	NEBNext rRNA Depletion Kit (Bacteria) with RNA Sample Purification Beads	E7860S/L/X	6/24/96 reactions

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## Featured Tools

**AT  
CG**

### NEBNext Selector

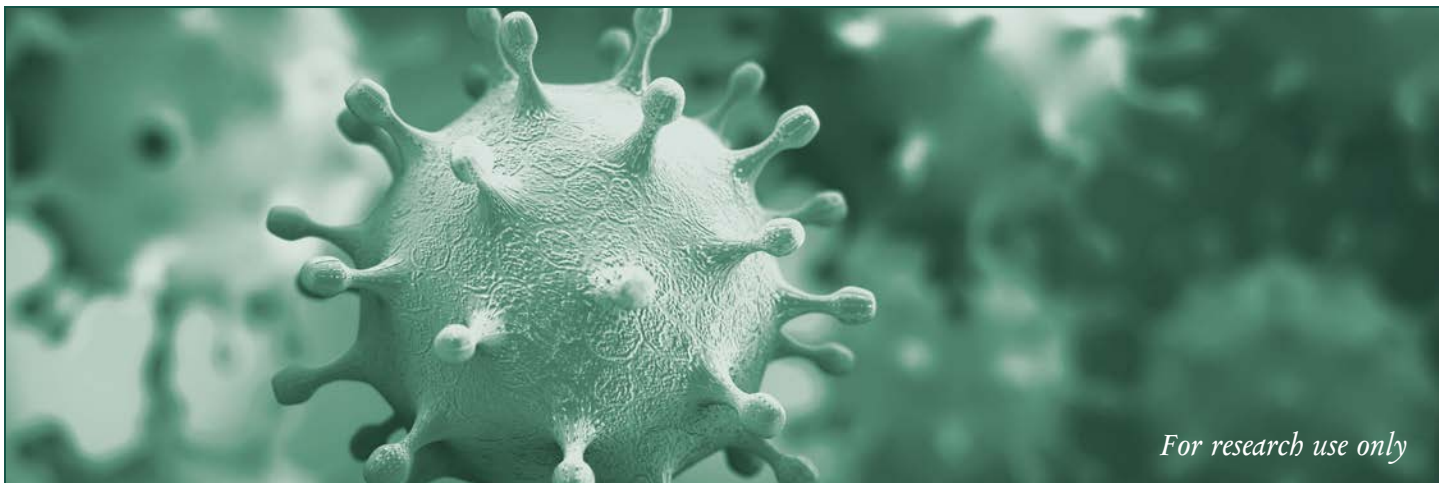
For help with choosing the best reagents for your next generation sequencing sample preparation, try our NEBNext selector at [NEBNextselector.neb.com](http://NEBNextselector.neb.com).



### Read Coverage Calculator

For help with calculation of values associated with read coverage in NGS protocols, try our Read Coverage Calculator at [Readcoveragecalculator.neb.com](http://Readcoveragecalculator.neb.com).





*For research use only*

# NEBNext® ARTIC Kits for SARS-CoV-2 sequencing

The NEBNext ARTIC kits meet the increasing need for reliable, accurate and fast methods for sequencing SARS-CoV-2, with Oxford Nanopore Technologies® or Illumina® sequencing.

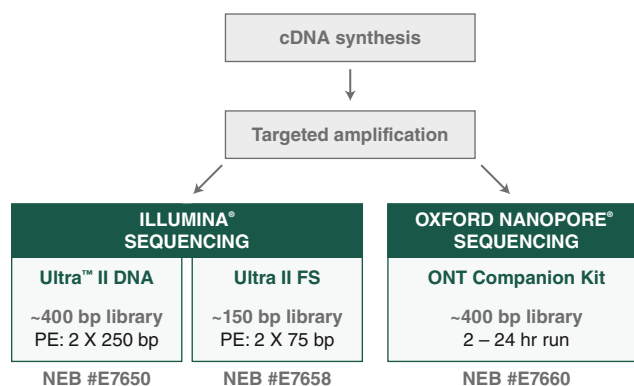
The kits use the ARTIC multiplexed amplicon-based whole-viral-genome sequencing approach and were developed in collaboration with the ARTIC Network. The kits include balanced V3 primer pools for improved uniformity of genome coverage and are effective with 10-10,000 SARS-CoV-2 genome copies. The reagents and protocols for RT-PCR and library prep are all optimized specifically for the SARS-CoV-2 ARTIC workflows.

The two kits compatible with Illumina sequencing generate library inserts of ~150 bp (for 2 x 75 sequencing) or ~400 bp (for 2 x 250 sequencing), and include a novel DNA polymerase formulation that eliminates the need to normalize amplicon concentrations prior to library preparation.

## Features

- Improved uniformity of SARS-CoV-2 genome coverage
- Effective with a wide range of viral genome inputs (10–10,000 copies)
- Single RT conditions for all input amounts
- No amplicon normalization prior to library preparation (Illumina-compatible kits)
- NEBNext Sample Purification Beads (SPRIselect®) provided
- Optional use of human control primers
- Library adaptors and primers available separately (Illumina-compatible kits)
- Cost-effective

## NEBNext® ARTIC KIT OPTIONS

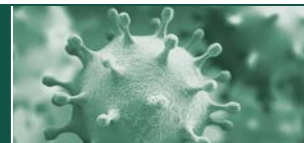


For more details, visit [www.neb.com/ARTIC](http://www.neb.com/ARTIC)

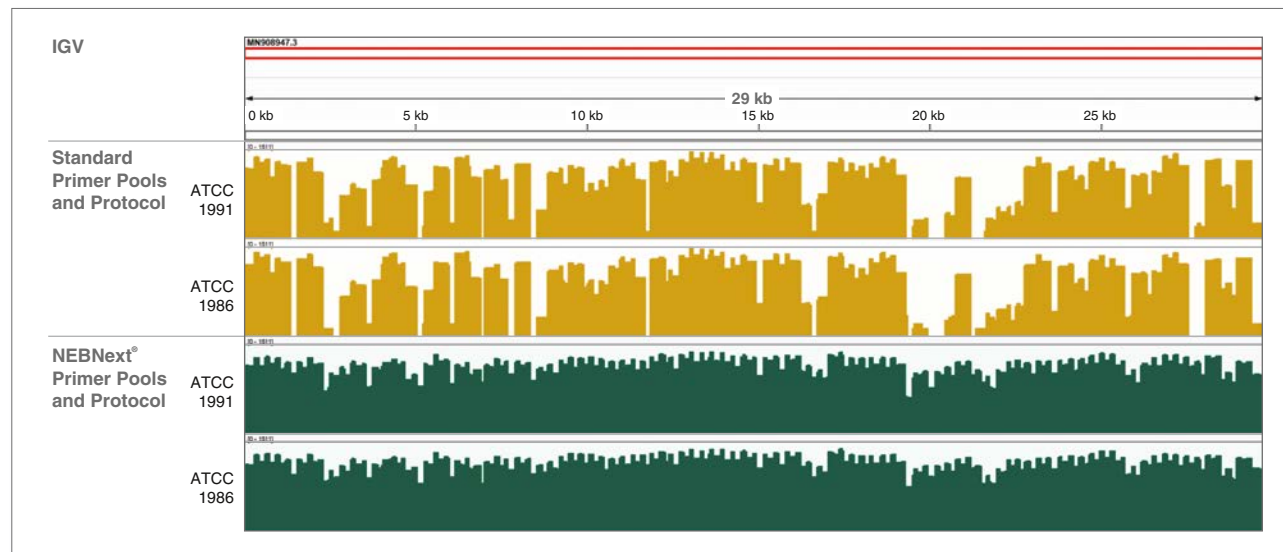


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*drive* DISCOVERY  
*stay* GENUINE

# NEBNext ARTIC Kits for SARS-CoV-2 sequencing



Fewer reads are required to completely cover the genome with the NEBNext ARTIC SARS-CoV-2 Companion Kit (Oxford Nanopore Technologies)



*Integrative Genome Viewer visualization of read coverage across the SARS-CoV-2 genome. Amplicons were generated from 1,000 copies of SARS-CoV-2 viral gRNA inputs (ATCC VR-1986 and VR-1991) in 100 ng of Universal Human Reference RNA (ThermoFisher Q50639) using IDT ARTIC nCoV-2019 V3 Panel ("Standard") or the NEBNext balanced ARTIC SARS-CoV-2 primer pools. Libraries were constructed using the NEBNext ARTIC SARS-CoV-2 Companion Kit (Oxford Nanopore Technologies) and the Oxford Nanopore Technologies Native Barcoding Expansion kits 1-12 (EXP-NBD104) and 13-24 (EXP-NBD114), Ligation Sequencing Kit (SQK-LSK109) and SFB Expansion Kit (EXP-SFB001). Sequencing was on a GridION instrument using R9.4.1 flow cells, and the ARTIC Network nCoV-19 bioinformatics pipeline was used.*

## Ordering Information

PRODUCT	NEB #	SIZE	PRICE
NEBNext ARTIC SARS-CoV-2 Library Prep Kit (Illumina)	E7650S/L	24/96 reactions	384 € / 1.536 €
NEBNext ARTIC SARS-CoV-2 FS Library Prep Kit (Illumina)	E7658S/L	24/96 reactions	408 € / 1.632 €
NEBNext ARTIC SARS-CoV-2 Companion Kit (Oxford Nanopore Technologies)	E7660S/L	24/96 reactions	192 € / 768 €

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