Kit CoA Cover Page

KAPA LTP Lib Prep Kit (8rxn)			
Kit Code	**Part Number**	**Lot Number**	**Kit Expiry Date**
KK8230	07961863001	003833-53-1	2018-05-27

Component Code	Component Description	Component Lot Number
KB8200	10x End-repair Buffer (100 µl)	00066291
KE8200	End-repair Enzyme Mix (50 µl)	00065824
KB8210	10x A-Tailing Buffer (50 µl)	00066708
KE8210	A-Tailing Enzyme (30 µl)	00065833
KB8220	5x Ligation Buffer (100 µl)	00066704
KE8220	DNA Ligase (50 µl)	00065638
KM2604	2x HiFi HS RM (0.25 ml)	00063164
KB8232	20% PEG 8000/2.5 M NaCl (5 ml)	00066142
KP8202	Illumina Lib Amp Primers (50 µl, 10 rxns)	00063305

CoA's are not issued for complete kits, but for the individual component lots from which kits are assembled. CoA's for all component lots listed are attached.

Generated By	Date
Namhla Ludaka	2016-05-27

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Certificate of Analysis

PRODUCT DETAILS		
Product name	10X End Repair Buffer	
Code & Pack size	KB8200	100 µL
Lot number	66291	
Code and lot number of bulk corresponding solution	KR0217	072914

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Composition	10X End Repair Buffer consists of 500 mM Tris-HCl, 100 mM $MgCl_2$, 100 mM DTT, 10 mM ATP and 4 mM of each dNTP (dATP, dCTP, dGTP and dTTP), pH 7.5 at 25 °C.	**Passed**
Functional assay	Test and reference DNA libraries are prepared (in quadruplicate) from 100 ng of sheared *E. coli* DNA using standard Library Preparation Kit protocols (End Repair, A-Tailing and Adapter Ligation). A 1:2000 dilution of each test and reference library is quantified with the KAPA Library Quantification Kit for Illumina. The average undiluted test and reference library concentration is >1 nM, and test library concentration is within 1 nM of reference library concentration. Average melting temperature (assessed with a post-qPCR melt curve) of the test libraries is within 1 °C of the reference libraries.	**Passed**
Endonuclease activity	No detectable nicking or linearization of plasmid DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
Exonuclease activity	No detectable degradation of lambda DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 0.5X End Repair Buffer contains <45 fg/µl bacterial genomic DNA (*E. coli* and related strains; as assessed by amplification of a 217 bp 16S rRNA fragment using a multicopy primer set in a 40-cycle reaction) and no detectable human genomic DNA (as assessed by amplification of a 290 bp b-actin fragment using a multicopy primer set in a 40-cycle reaction).	**Passed**

Generated by Melissa Jonas (QC Scientist) 2016-03-24

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Certificate of Analysis

PRODUCT DETAILS		
Product name	End Repair Enzyme Mix	
Code & Pack size	KE8200	50 µL
Lot number	65824	
Code and lot number of bulk corresponding solution	KR0218	139K071015

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Composition	End Repair Enzyme Mix contains 3,000 U/ml T4 DNA Polymerase and 10,000 U/ml T4 Polynucleotide Kinase, in a 100 mM KCl, 10 mM Tris-HCl, 0.1 mM EDTA, 1 mM DTT, 0.1% Triton X-100, 50% glycerol buffer, pH 7.4 at 25 °C.	**Passed**
Purity	The enzymes contained in this product contains <1% contaminating protein, as determined by SDS-PAGE.	**Passed**
Functional assay	Test and reference DNA libraries are prepared (in quadruplicate) from 100 ng of sheared *E. coli* DNA using standard Library Preparation Kit protocols (End Repair, A-Tailing and Adapter Ligation). A 1:2000 dilution of each test and reference library is quantified with the KAPA Library Quantification Kit for Illumina. The average undiluted test and reference library concentration is >1 nM, and test library concentration is within 1 nM of reference library concentration. Average melting temperature (assessed with a post-qPCR melt curve) of the test libraries is within 1 °C of the reference libraries.	**Passed**
Endonuclease activity	No detectable nicking or linearization of plasmid DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
Exonuclease activity	No detectable degradation of lambda DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 0.5 µl of End Repair Enzyme Mix contains <45 fg/µl bacterial genomic DNA (*E. coli* and related strains; as assessed by amplification of a 217 bp 16S rRNA fragment using a multicopy primer set in a 40-cycle reaction) and no detectable human genomic DNA (as assessed by amplification of a 290 bp b-actin fragment using a multicopy primer set in a 40-cycle reaction).	**Passed**

Generated by Melissa Jonas (QC Scientist) 2016-02-01

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Certificate of Analysis

PRODUCT DETAILS		
Product name	10X A-Tailing Buffer	
Code & Pack size	KB8210	50 µL
Lot number	66708	
Code and lot number of bulk corresponding solution	KR0219	072214

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Composition	10X A-Tailing Buffer consists of 100 mM Tris-HCl, 100 mM MgCl2, 500 mM NaCl, 10 mM DTT and 2 mM dATP, pH 7.9 at 25 °C.	**Passed**
Functional assay	Test and reference DNA libraries are prepared (in quadruplicate) from 100 ng of sheared *E. coli* DNA using standard Library Preparation Kit protocols (End Repair, A-Tailing and Adapter Ligation). A 1:2000 dilution of each test and reference library is quantified with the KAPA Library Quantification Kit for Illumina. The average undiluted test and reference library concentration is >1 nM, and test library concentration is within 1 nM of reference library concentration. Average melting temperature (assessed with a post-qPCR melt curve) of the test libraries is within 1 °C of the reference libraries.	**Passed**
Endonuclease activity	No detectable nicking or linearization of plasmid DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
Exonuclease activity	No detectable degradation of lambda DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 0.05X A-Tailing Buffer contains <45 fg/µl bacterial genomic DNA (*E. coli* and related strains; as assessed by amplification of a 217 bp 16S rRNA fragment using a multicopy primer set in a 40-cycle reaction) and no detectable human genomic DNA (as assessed by amplification of a 290 bp b-actin fragment using a multicopy primer set in a 40-cycle reaction).	**Passed**

Generated by Toni Marinus (QC Scientist) 2016-05-17

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Certificate of Analysis

PRODUCT DETAILS		
Product name	A-Tailing Enzyme	
Code & Pack size	KE8210	30 µL
Lot number	65833	
Code and lot number of bulk corresponding solution	KR0220	19122313

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Composition	A-Tailing Enzyme contains 5,000 U/ml Klenow (3' – 5' exo-) DNA Polymerase in a 20 mM Tris-HCl, 0.1 mM EDTA, 1 mM DTT, 50% glycerol buffer, pH 7.5 at 25 °C.	**Passed**
Purity	The enzyme contained in this product contains <1% contaminating protein, as determined by SDS-PAGE.	**Passed**
Functional assay	Test and reference DNA libraries are prepared (in quadruplicate) from 100 ng of sheared *E. coli* DNA using standard Library Preparation Kit protocols (End Repair, A-Tailing and Adapter Ligation). A 1:2000 dilution of each test and reference library is quantified with the KAPA Library Quantification Kit for Illumina. The average undiluted test and reference library concentration is >1 nM, and test library concentration is within 1 nM of reference library concentration. Average melting temperature (assessed with a post-qPCR melt curve) of the test libraries is within 1 °C of the reference libraries.	**Passed**
Endonuclease activity	No detectable nicking or linearization of plasmid DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
Exonuclease activity	No detectable degradation of lambda DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 0.5 µl of A-Tailing Enzyme contains <45 fg/µl bacterial genomic DNA (*E. coli* and related strains; as assessed by amplification of a 217 bp 16S rRNA fragment using a multicopy primer set in a 40-cycle reaction) and no detectable human genomic DNA (as assessed by amplification of a 290 bp b-actin fragment using a multicopy primer set in a 40-cycle reaction).	**Passed**

Generated by Melissa Jonas (QC Scientist) 2016-02-01

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Certificate of Analysis

PRODUCT DETAILS		
Product name	5X Ligation Buffer	
Code & Pack size	KB8220	100 µL
Lot number	66704	
Code and lot number of bulk corresponding solution	KR0221	090314

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Composition	5X Ligation Buffer consists of 330 mM Tris-HCl, 50 mM MgCl2, 5 mM DTT, 5 mM ATP and 30% PEG 6000, pH 7.6 at 25 °C.	**Passed**
Functional assay	Test and reference DNA libraries are prepared (in quadruplicate) from 100 ng of sheared *E. coli* DNA using standard Library Preparation Kit protocols (End Repair, A-Tailing and Adapter Ligation). A 1:2000 dilution of each test and reference library is quantified with the KAPA Library Quantification Kit for Illumina. The average undiluted test and reference library concentration is >1 nM, and test library concentration is within 1 nM of reference library concentration. Average melting temperature (assessed with a post-qPCR melt curve) of the test libraries is within 1 °C of the reference libraries.	**Passed**
Endonuclease activity	No detectable nicking or linearization of plasmid DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
Exonuclease activity	No detectable degradation of lambda DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 0.25X Ligation Buffer contains <45 fg/µl bacterial genomic DNA (*E. coli* and related strains; as assessed by amplification of a 217 bp 16S rRNA fragment using a multicopy primer set in a 40-cycle reaction) and no detectable human genomic DNA (as assessed by amplification of a 290 bp b-actin fragment using a multicopy primer set in a 40-cycle reaction).	**Passed**

Generated by Toni Marinus (QC Scientist) 2016-05-17

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Certificate of Analysis

PRODUCT DETAILS		
Product name	DNA Ligase	
Code & Pack size	KE8220	50 µl
Lot number	65638	
Code and lot number of bulk corresponding solution	KR0222	29072415

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Composition	DNA Ligase contains 600,000 U/ml T4 DNA Ligase in a 10 mM Tris-HCl, 50 mM NaCl, 0.1 mM EDTA, 1 mM DTT, 50% glycerol buffer, pH 7.5 at 25 °C.	**Passed**
Purity	The enzyme contained in this product contains <1% contaminating protein, as determined by SDS-PAGE.	**Passed**
Functional assay	Test and reference DNA libraries are prepared (in quadruplicate) from 100 ng of sheared *E. coli* DNA using standard Library Preparation Kit protocols (End Repair, A-Tailing and Adapter Ligation). A 1:2000 dilution of each test and reference library is quantified with the KAPA Library Quantification Kit for Illumina. The average undiluted test and reference library concentration is >1 nM, and test library concentration is within 1 nM of reference library concentration. Average melting temperature (assessed with a post-qPCR melt curve) of the test libraries is within 1 °C of the reference libraries.	**Passed**
Endonuclease activity	No detectable nicking or linearization of plasmid DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
Exonuclease activity	No detectable degradation of lambda DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 0.5 µl of DNA Ligase contains <45 fg/µl bacterial genomic DNA (*E. coli* and related strains; as assessed by amplification of a 217 bp 16S rRNA fragment using a multicopy primer set in a 40-cycle reaction) and no detectable human genomic DNA (as assessed by amplification of a 290 bp b-actin fragment using a multicopy primer set in a 40-cycle reaction).	**Passed**

Generated by Juli Kriel (QC Scientist) 2016-01-12

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Certificate of Analysis

PRODUCT DETAILS		
Product name	2 x KAPA HiFi HotStart ReadyMix	
Code & Pack size	KM2604	0.25 ml
Lot number	63164	
Code and lot number of bulk corresponding solution	BM0039	63017

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Purity	The enzyme contained in this product is extensively purified through the use of multiple chromatography steps. The final formulation contains <2% contaminating protein, as determined in an Agilent Protein 230 Assay. The nucleotides contained in this product are >98% pure, as determined by HPLC analysis.	**Passed**
Functional assay	A single, distinct band visible by agarose gel electrophoresis/ ethidium bromide staining, following amplification of a 599 bp DNA fragment from a dilution series of 10 ng – 100pg human genomic DNA under standard reaction conditions.	**Passed**
Endonuclease activity	No detectable nicking or linearization of plasmid DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
Exonuclease activity	No detectable degradation of lambda DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ ethidium bromide staining.	**Passed**
DNA contamination	A standard reaction with no template contains <50 fg/µl bacterial genomic DNA (*E. coli* and related strains; as assessed by amplification of a 411 bp 16S rRNA fragment using a multicopy primer set in a 35-cycle reaction) and <0.5 pg/µl human genomic DNA (as assessed by amplification of a 290 bp b-actin fragment using a multicopy primer set in a 35-cycle reaction).	**Passed**

Generated by Karusha Moonsamy (QC Scientist) 2015-02-18

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Certificate of Analysis

PRODUCT DETAILS		
Product name	20% PEG 8000/2.5 M NaCl	
Code & Pack size	KB8232	5 mL
Lot number	66142	
Code and lot number of bulk corresponding solution	BB0030	63819

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assay	Fourteen distinct bands are visible by agarose gel electrophoresis/ ethidium bromide staining, following the digestion of pGen6 plasmid with restriction enzyme HpaII; and retention of a specified number of these bands after purification with three different volumes of 20% PEG 8000/2.5 M NaCl confirms size selectivity.	**Passed**
Endonuclease activity	No detectable nicking or linearization of plasmid DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ethidium bromide staining.	**Passed**
Exonuclease activity	No detectable degradation of lambda DNA after incubation for 8 hours at 37 °C, as assessed by agarose gel electrophoresis/ ethidium bromide staining.	**Passed**
DNA contamination	A standard reaction with no template contains <50 fg/µl bacterial genomic DNA (*E. coli* and related strains; as assessed by amplification of a 411 bp 16S rRNA fragment using a multicopy primer set in a 35-cycle reaction) and <0.5 pg/µl human genomic DNA (as assessed by amplification of a 290 bp b-actin fragment using a multicopy primer set in a 35-cycle reaction).	**Passed**

Generated by Toni Marinus (QC Scientist) 2016-03-08

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Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Library Amplification Primer Mix (10X) for Illumina	
Code & Pack size	KP8202	50 µL
Lot number	63305	
Code and lot number of bulk corresponding solution	BP0014	62968

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assays	The reaction efficiency plot corresponding to a standard curve generated with six **reference** linear template DNA standards and an appropriate **reference** primer premix has a R^2 of ≥0.99 for the five most concentrated standards.	**Passed**
	The reaction efficiency plot corresponding to a standard curve generated with six **reference** linear template DNA standards and the **test** primer premix has a R^2 of ≥0.99 for the five most concentrated standards.	**Passed**
	After incubation at 37^{0}C for one hour, in reaction with KAPA HiFi qPCR Master Mix and **reference** DNA standards, the C_T score of each of the reactions generated with the **test** primer premix and the **reference** DNA standards is within 0.2 cycle of the C_T score obtained with the **reference** primer premix and the corresponding **reference** standard.	**Passed**
Specificity	No additional peaks were observed in the melt curve profile corresponding to any reaction product generated with the **test** primer premix, when compared to the melt curve profile corresponding to the reaction product generated with the **reference** primer premix and the appropriate **reference** standard.	**Passed**
No Template Controls	Amplification in No Template Control reactions is delayed by at least 5 cycles after DNA Standard 6, has an absolute C_T score of >25, and is non-specific, as judged by the melt curve profile.	**Passed**

Generated by Chanell Herfurth (QC Scientist) 2015-03-02

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