Kit CoA Cover Page

KAPA HyperPlus (8rxn)			
Kit Code	**Part Number**	**Lot Number**	**Kit Expiry Date**
KK8510	07962380001	004030-25-1	2017-05-14

Component Code	Component Description	Component Lot Number
KB8500	Hyper Prep End Repair and A-Tailing Buffer (70 µl)	00066729
KB8501	Hyper Prep Ligation Buffer (300 µl)	00065987
KE8500	Hyper Prep End Repair and A-Tailing Enzyme (30 µl)	00064595
KE8501	Hyper Prep DNA Ligase Enzyme (100 µl)	00065971
KP8202	10x Illumina Library Amplification Primer Premix (50 µl)	00063305
KM2604	2x HiFi HS RM (0.25 ml)	00063164
KB8601	10x KAPA Frag Buffer (50 µl)	00066485
KE8601	5x KAPA Frag Enzyme (100 µl)	00066486
KB8600	Frag Conditioning Solution (580 µl)	00066438

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 (QC Scientist)	2016-07-13

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Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Hyper Prep End Repair & A-Tailing Buffer	
Code & Lot number	KB8500	66729
Pack size	70 µL	
Bulk Code & Lot number	BB0053	66322

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assay	KAPA Hyper Prep reagents are functionally tested in Illumina® library preparation, using 100 ng and 10 ng of *E. coli* genomic DNA, sheared to an average size of 200 bp using Covaris S220. The amount of input material converted to adapter-ligated library molecules is measured by quantifying a 1:1000 dilution of each library with the KAPA Library Quantification Kit for Illumina® platforms. For libraries prepared from 100 ng input DNA, 25 – 40% of input DNA is converted to adapter-ligated library material. For libraries prepared from 10 ng input DNA, 10 – 25% of input DNA is converted to adapter-ligated library material. Melt curve analysis of Library Quantification qPCR products is performed to confirm the presence of a single library peak with a melting temperature of 85 – 88 °C, and no detectable adapter dimer.	**Passed**
Non-Specific DNase contamination Assay	No detectable contaminating single-stranded endonucleases, single-stranded exonucleases, or double-stranded nucleases, when assaying 1 µl of KAPA Hyper Prep End Repair & A-Tailing Buffer with the DNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
Non-Specific RNase contamination Assay	No detectable contaminating RNases when assaying 1 µl of KAPA Hyper Prep End Repair & A-Tailing Buffer with the RNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 1.5 µl KAPA Hyper Prep End Repair & 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), 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) and no detectable adapter-ligated library DNA (as assessed by amplification using primers specific for the Illumina® TruSeq™ adapters).	**Passed**

Generated by Melissa Jonas (QC Scientist) 2016-05-24

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Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Hyper Prep Ligation Buffer	
Code & Lot number	KB8501	65987
Pack size	300 µl	
Bulk Code & Lot number	BB0055	64150

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assay	KAPA Hyper Prep reagents are functionally tested in Illumina® library preparation, using 100 ng and 10 ng of *E. coli* genomic DNA, sheared to an average size of 200 bp using Covaris S220. The amount of input material converted to adapter-ligated library molecules is measured by quantifying a 1:1000 dilution of each library with the KAPA Library Quantification Kit for Illumina® platforms. For libraries prepared from 100 ng input DNA, 25 – 40% of input DNA is converted to adapter-ligated library material. For libraries prepared from 10 ng input DNA, 10 – 25% of input DNA is converted to adapter-ligated library material. Melt curve analysis of Library Quantification qPCR products is performed to confirm the presence of a single library peak with a melting temperature of 85 – 88 °C, and no detectable adapter dimer.	**Passed**
Non-Specific DNase contamination Assay	No detectable contaminating single-stranded endonucleases, single-stranded exonucleases, or double-stranded nucleases, when assaying 1 µl of KAPA Hyper Prep Ligation Buffer with the DNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
Non-Specific RNase contamination Assay	No detectable contaminating RNases when assaying 1 µl of KAPA Hyper Prep Ligation Buffer with the RNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 6 µl KAPA Hyper Prep Ligation Buffer <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), 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) and no detectable adapter-ligated library DNA (as assessed by amplification using primers specific for the Illumina® TruSeq™ adapters).	**Passed**

Generated by Juli Kriel (QC Scientist) 2016-02-25

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Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Frag Conditioning Solution	
Code & Lot number	KB8600	66438
Pack size	580 µl	
Bulk Code & Lot number	SS0353	64885

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assay	KAPA Frag reagents are functionally tested by fragmenting *E. coli* genomic DNA. The specified DNA fragment size distribution is confirmed using a Bioanalyzer High Sensitivity DNA chip.	**Passed**
Non-Specific DNase contamination Assay	No detectable contaminating single-stranded endonucleases, single-stranded exonucleases, or double-stranded nucleases, when assaying 1 µl of KAPA Frag Conditioning Solution with the DNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
Non-Specific RNase contamination Assay	No detectable contaminating RNases when assaying 1 µl of KAPA Frag Conditioning Solution with the RNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 6 µl KAPA Conditioning Solution <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), 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) and no detectable adapter-ligated library DNA (as assessed by amplification using primers specific for the Illumina® TruSeq™ adapters and Ion Torrent adapters™).	**Passed**

Generated by Juli Kriel (QC Scientist) 2016-04-29

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Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Frag 10x Buffer	
Code & Lot number	KB8601	66485
Pack size	50 µl	
Bulk Code & Lot number	BB0057	66343

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assay	KAPA Frag reagents are functionally tested by fragmenting *E. coli* genomic DNA. The specified DNA fragment size distribution is confirmed using a Bioanalyzer High Sensitivity DNA chip.	**Passed**
Non-Specific DNase contamination Assay	No detectable contaminating single-stranded endonucleases, single-stranded exonucleases, or double-stranded nucleases, when assaying 1 µl of KAPA Frag 10x Buffer with the DNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
Non-Specific RNase contamination Assay	No detectable contaminating RNases when assaying 1 µl of KAPA Frag 10x Buffer with the RNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 6 µl KAPA Frag 10x 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), 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) and no detectable adapter-ligated library DNA (as assessed by amplification using primers specific for the Illumina® TruSeq™ adapters and Ion Torrent adapters™).	**Passed**

Generated by Juli Kriel (QC Scientist) 2016-04-20

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Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Hyper Prep End Repair & A-Tailing Enzyme	
Code & Lot number	KE8500	64595
Pack size	30 µL	
Bulk Code & Lot number	DE0038	63882

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assay	KAPA Hyper Prep reagents are functionally tested in Illumina® library preparation, using 100 ng and 10 ng of *E. coli* genomic DNA, sheared to an average size of 200 bp using Covaris S220. The amount of input material converted to adapter-ligated library molecules is measured by quantifying a 1:1000 dilution of each library with the KAPA Library Quantification Kit for Illumina® platforms. For libraries prepared from 100 ng input DNA, 25 – 40% of input DNA is converted to adapter-ligated library material. For libraries prepared from 10 ng input DNA, 10 – 25% of input DNA is converted to adapter-ligated library material. Melt curve analysis of Library Quantification qPCR products is performed to confirm the presence of a single library peak with a melting temperature of 85 – 88 °C, and no detectable adapter dimer.	**Passed**
Non-Specific RNase contamination Assay	No detectable contaminating RNases when assaying 1 µl of KAPA Hyper Prep End Repair & A-Tailing Enzyme with the RNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 6 µl KAPA Hyper Prep End Repair & 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), 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) and no detectable adapter-ligated library DNA (as assessed by amplification using primers specific for the Illumina® TruSeq™ adapters).	**Passed**

Generated by Danielle Volschenk (QC Scientist) 2015-09-04

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Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Hyper Prep DNA Ligase	
Code & Lot number	KE8501	65971
Pack size	100 µl	
Bulk Code & Lot number	KR0222	31092215

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assay	KAPA Hyper Prep reagents are functionally tested in Illumina® library preparation, using 100 ng and 10 ng of *E. coli* genomic DNA, sheared to an average size of 200 bp using Covaris S220. The amount of input material converted to adapter-ligated library molecules is measured by quantifying a 1:1000 dilution of each library with the KAPA Library Quantification Kit for Illumina® platforms. For libraries prepared from 100 ng input DNA, 25 – 40% of input DNA is converted to adapter-ligated library material. For libraries prepared from 10 ng input DNA, 10 – 25% of input DNA is converted to adapter-ligated library material. Melt curve analysis of Library Quantification qPCR products is performed to confirm the presence of a single library peak with a melting temperature of 85 – 88 °C, and no detectable adapter dimer.	**Passed**
Non-Specific DNase contamination Assay	No detectable contaminating single-stranded endonucleases, single-stranded exonucleases, or double-stranded nucleases, when assaying 1 µl of KAPA Hyper Prep DNA Ligase with the DNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
Non-Specific RNase contamination Assay	No detectable contaminating RNases when assaying 1 µl of KAPA Hyper Prep DNA Ligase with the RNaseAlert™ Substrate Nuclease Detection System (Integrated DNA Technologies).	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 0.025X KAPA Hyper Prep 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), 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) and no detectable adapter-ligated library DNA (as assessed by amplification using primers specific for the Illumina® TruSeq™ adapters).	**Passed**

Generated by Juli Kriel (QC Scientist) 2016-02-25

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Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Frag Enzyme	
Code & Lot number	KE8601	66486
Pack size	100 µl	
Bulk Code & Lot number	DE0044	66409

QUALITY CONTROL PARAMETERS		
Parameter	**Specification**	**Result**
Functional assay	KAPA Frag reagents are functionally tested by fragmenting *E. coli* genomic DNA. The specified DNA fragment size distribution is confirmed using a Bioanalyzer High Sensitivity DNA chip..	**Passed**
DNA contamination	A standard KAPA SYBR FAST no template reaction with 6 µl KAPA Frag 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), 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) and no detectable adapter-ligated library DNA (as assessed by amplification using primers specific for the Illumina® TruSeq™ adapters and Ion Torrent adapters™).	**Passed**

Generated by Juli Kriel (QC Scientist) 2016-04-20

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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	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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