Kit CoA Cover Page

KAPA HyperPlus (96rxn)			
Kit Code	**Part Number**	**Lot Number**	**Kit Expiry Date**
KK8514	07962428001	003833-74-1	2017-03-27

Component Code	Component Description	Component Lot Number
KB8504	Hyper Prep End Repair and A-Tailing Buffer (930 µl)	00066411
KB8505	Hyper Prep Ligation Buffer (3.8 ml)	00066427
KE8504	Hyper Prep End Repair and A-Tailing Enzyme (400 µl)	00066405
KE8505	Hyper Prep DNA Ligase Enzyme (1.26 ml)	00066406
KP8201	10x Illumina Library Amplification Primer Premix (600 µl)	00065482
KM2612	2x HiFi HS RM, HTP (3 ml)	00066043
KB8603	10x KAPA Frag Buffer (640 µl)	00066440
KE8603	5x KAPA Frag Enzyme (1270 µl)	00066479
KB8600	Frag Conditioning Solution (580 µl)	00064945

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
Karusha Moonsamy (QC Scientist)	2016-05-30

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: kapa.coa@roche.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
Salt Works 271 Victoria Road,
Salt River 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

KAPABIOSYSTEMS

Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Hyper Prep End Repair & A-Tailing Buffer	
Code & Lot number	KB8504	66411
Pack size	930 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 Juli Kriel (QC Scientist) 2016-04-19

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor, Salt Works, 271 Victoria Road,
Salt River, 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Hyper Prep Ligation Buffer	
Code & Lot number	KB8505	66427
Pack size	3.8 ml	
Bulk Code & Lot number	BB0055	66334

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) 2016-04-19

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor, Salt Works, 271 Victoria Road,
Salt River, 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Hyper Prep End Repair & A-Tailing Enzyme	
Code & Lot number	KE8504	66405
Pack size	400 µl	
Bulk Code & Lot number	DE0038	66248

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 Juli Kriel (QC Scientist) 2016-04-19

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor, Salt Works, 271 Victoria Road,
Salt River, 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Hyper Prep DNA Ligase	
Code & Lot number	KE8505	66406
Pack size	1.26 ml	
Bulk Code & Lot number	KR0222	33111015

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) 2016-04-19

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor, Salt Works, 271 Victoria Road,
Salt River, 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Library Amplification Primer Mix (10X) for Illumina	
Code & Pack size	KP8201	600 µL
Lot number	65482	
Code and lot number of bulk corresponding solution	BP0014	65365

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 °C for one hour, in reaction with KAPA HiFi qPCR Master Mix and five most concentrated reference DNA standards, the CT score of each of the reactions generated with the test primer premix and the reference DNA standards is within 0.2 cycle of the CT 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 3 cycles after DNA Standard 5.	**Passed**

Generated by Toni Marinus (QC Scientist) 2015-12-09

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 250,
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor, Salt Works, 271 Victoria Road,
Salt River, 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

Certificate of Analysis

PRODUCT DETAILS		
Product name	2x KAPA HiFi HotStart ReadyMix	
Code & Pack size	KM2612	3 mL
Lot number	66043	
Code and lot number of bulk corresponding solution	BM0039	65931

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 50 ng –80 pg 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 Michael Siebritz (QC Scientist) 2016-02-18

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor Salt Works 271 Victoria Road,
Salt River 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Frag 10x Buffer	
Code & Lot number	KB8603	66440
Pack size	640 µl	
Bulk Code & Lot number	BB0057	66342

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

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor, Salt Works, 271 Victoria Road,
Salt River, 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Frag Enzyme	
Code & Lot number	KE8603	66479
Pack size	1.27 ml	
Bulk Code & Lot number	DE0044	66213

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

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor, Salt Works, 271 Victoria Road,
Salt River, 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503

Certificate of Analysis

PRODUCT DETAILS		
Product name	KAPA Frag Conditioning Solution	
Code & Lot number	KB8600	64945
Pack size	580 µL	
Bulk Code & Lot number	SS0353	63622

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 Danielle Volschenk (QC Scientist) 2015-10-16

KAPA Biosystems, Inc.
Wilmington, Massachusetts, United States
200 Ballardvale Street, Suite 350
Wilmington, MA 01887 U.S.A.
Tel: +1 781 497 2933 Fax: +1 781 497 2934
Email: coa@kapabiosystems.com

KAPA Biosystems (Pty) Ltd
Cape Town, South Africa
2nd Floor, Salt Works, 271 Victoria Road,
Salt River, 7925, Cape Town, South Africa
Tel: +27 21 448 8200 Fax: +27 21 448 6503