Invitrogen Custom Primers

Certificate of Analysis

EPA	
Order Number:	26629392
Order Date:	02-Sep-2014

Line 3 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	NorGIBF	Primer Number:	**272538B03**
Researcher	Shay Fout	Primer Length:	18
Sequence (5' to 3'):	(DNA) - CGC TGG ATG CGN TTC CAT	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	5,487.4	µg per OD:	29.81
Millimolar Extinction Coeff.: (OD/µmol):	184.1	nmoles per OD:	5.43
Purity	**Desalt**	**OD's**	**6.33**
% GC Content:	**58**	**µg's**	**188.76**
Tm (1M Na+)	**86**	**nmoles**	**34.4**
Tm (50 mM Na+)	**64**		
Notes:			

Line 11 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	NorGIBF	Primer Number:	**272538B04**
Researcher	Shay Fout	Primer Length:	18
Sequence (5' to 3'):	(DNA) - CGC TGG ATG CGN TTC CAT	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	5,487.4	µg per OD:	29.81
Millimolar Extinction Coeff.: (OD/µmol):	184.1	nmoles per OD:	5.43
Purity	**Desalt**	**OD's**	**6.66**
% GC Content:	**58**	**µg's**	**198.68**
Tm (1M Na+)	**86**	**nmoles**	**36.2**
Tm (50 mM Na+)	**64**		
Notes:			

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Certificate of Analysis

EPA	
Order Number:	26629392
Order Date:	02-Sep-2014

Line 1 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	EntF	Primer Number:	**272527A05**
Researcher	Shay Fout	Primer Length:	17
Sequence (5' to 3'):	(DNA) - CCT CCG GCC CCT GAA TG	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	5,108.4	µg per OD:	30.98
Millimolar Extinction Coeff.: (OD/µmol):	164.9	nmoles per OD:	6.06
Purity	**Desalt**	**OD's**	**8.39**
% GC Content:	**71**	**µg's**	**260.07**
Tm (1M Na+)	**87**	**nmoles**	**50.9**
Tm (50 mM Na+)	**65**		
Notes:			

Line 2 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	EntR	Primer Number:	**272527A06**
Researcher	Shay Fout	Primer Length:	18
Sequence (5' to 3'):	(DNA) - ACC GGA TGG CCA ATC CAA	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	5,478.6	µg per OD:	27.12
Millimolar Extinction Coeff.: (OD/µmol):	202.0	nmoles per OD:	4.95
Purity	**Desalt**	**OD's**	**7.93**
% GC Content:	**56**	**µg's**	**215.18**
Tm (1M Na+)	**86**	**nmoles**	**39.3**
Tm (50 mM Na+)	**65**		
Notes:			

Line 4 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	NorGIBR	Primer Number:	**272527A07**
Researcher	Shay Fout	Primer Length:	23
Sequence (5' to 3'):	(DNA) - CCT TAG ACG CCA TCA TCA TTT AC	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	6,919.6	µg per OD:	28.87
Millimolar Extinction Coeff.: (OD/µmol):	239.7	nmoles per OD:	4.17
Purity	**Desalt**	**OD's**	**10.47**
% GC Content:	**44**	**µg's**	**302.38**
Tm (1M Na+)	**81**	**nmoles**	**43.7**
Tm (50 mM Na+)	**60**		
Notes:			

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EPA	
Order Number:	26629392
Order Date:	02-Sep-2014

Line 5 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	NorGIIF	Primer Number:	**272527A08**
Researcher	Shay Fout	Primer Length:	26
Sequence (5' to 3'):	(DNA) - ATG TTC AGR TGG ATG AGR TTC TCW GA	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	8,061.7	µg per OD:	27.31
Millimolar Extinction Coeff.: (OD/µmol):	295.2	nmoles per OD:	3.39
Purity	**Desalt**	**OD's**	**10.91**
% GC Content:	**42**	**µg's**	**297.90**
Tm (1M Na+)	**88**	**nmoles**	**37.0**
Tm (50 mM Na+)	**66**		
Notes:			

Line 6 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	NorGIIR	Primer Number:	**272527A09**
Researcher	Shay Fout	Primer Length:	21
Sequence (5' to 3'):	(DNA) - TCG ACG CCA TCT TCA TTC ACA	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	6,302.2	µg per OD:	29.30
Millimolar Extinction Coeff.: (OD/µmol):	215.1	nmoles per OD:	4.65
Purity	**Desalt**	**OD's**	**8.17**
% GC Content:	**48**	**µg's**	**239.46**
Tm (1M Na+)	**87**	**nmoles**	**38.0**
Tm (50 mM Na+)	**65**		
Notes:			

Line 7 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	HepF	Primer Number:	**272527A10**
Researcher	Shay Fout	Primer Length:	20
Sequence (5' to 3'):	(DNA) - CGG CCA AAA GGT GGT GGA TG	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	6,248.0	µg per OD:	26.84
Millimolar Extinction Coeff.: (OD/µmol):	232.8	nmoles per OD:	4.30
Purity	**Desalt**	**OD's**	**10.97**
% GC Content:	**60**	**µg's**	**294.43**
Tm (1M Na+)	**89**	**nmoles**	**47.2**
Tm (50 mM Na+)	**68**		
Notes:			

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EPA	
Order Number:	26629392
Order Date:	02-Sep-2014

Line 8 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	HepR	Primer Number:	**272527A11**
Researcher	Shay Fout	Primer Length:	19
Sequence (5' to 3'):	(DNA) - CGA CGA GCC TGA CGT CGG G	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	5,855.8	µg per OD:	28.80
Millimolar Extinction Coeff.: (OD/µmol):	203.3	nmoles per OD:	4.92
Purity	**Desalt**	**OD's**	**9.43**
% GC Content:	**74**	**µg's**	**271.57**
Tm (1M Na+)	**92**	**nmoles**	**46.4**
Tm (50 mM Na+)	**70**		
Notes:			

Line 9 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	EntF	Primer Number:	**272527A12**
Researcher	Shay Fout	Primer Length:	17
Sequence (5' to 3'):	(DNA) - CCT CCG GCC CCT GAA TG	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	5,108.4	µg per OD:	30.98
Millimolar Extinction Coeff.: (OD/µmol):	164.9	nmoles per OD:	6.06
Purity	**Desalt**	**OD's**	**7.04**
% GC Content:	**71**	**µg's**	**218.11**
Tm (1M Na+)	**87**	**nmoles**	**42.7**
Tm (50 mM Na+)	**65**		
Notes:			

Line 10 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	EntR	Primer Number:	**272527B01**
Researcher	Shay Fout	Primer Length:	18
Sequence (5' to 3'):	(DNA) - ACC GGA TGG CCA ATC CAA	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	5,478.6	µg per OD:	27.12
Millimolar Extinction Coeff.: (OD/µmol):	202.0	nmoles per OD:	4.95
Purity	**Desalt**	**OD's**	**6.42**
% GC Content:	**56**	**µg's**	**174.20**
Tm (1M Na+)	**86**	**nmoles**	**31.8**
Tm (50 mM Na+)	**65**		
Notes:			

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Order Number:	26629392
Order Date:	02-Sep-2014

Line 12 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	NorGIBR	Primer Number:	**272527B02**
Researcher	Shay Fout	Primer Length:	23
Sequence (5' to 3'):	(DNA) - CCT TAG ACG CCA TCA TCA TTT AC	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	6,919.6	µg per OD:	28.87
Millimolar Extinction Coeff.: (OD/µmol):	239.7	nmoles per OD:	4.17
Purity	**Desalt**	**OD's**	**10.88**
% GC Content:	**44**	**µg's**	**313.97**
Tm (1M Na+)	**81**	**nmoles**	**45.4**
Tm (50 mM Na+)	**60**		
Notes:			

Line 13 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	NorGIIF	Primer Number:	**272527B03**
Researcher	Shay Fout	Primer Length:	26
Sequence (5' to 3'):	(DNA) - ATG TTC AGR TGG ATG AGR TTC TCW GA	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	8,061.7	µg per OD:	27.31
Millimolar Extinction Coeff.: (OD/µmol):	295.2	nmoles per OD:	3.39
Purity	**Desalt**	**OD's**	**10.43**
% GC Content:	**42**	**µg's**	**284.88**
Tm (1M Na+)	**88**	**nmoles**	**35.4**
Tm (50 mM Na+)	**66**		
Notes:			

Line 14 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	NorGIIR	Primer Number:	**272527B04**
Researcher	Shay Fout	Primer Length:	21
Sequence (5' to 3'):	(DNA) - TCG ACG CCA TCT TCA TTC ACA	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	6,302.2	µg per OD:	29.30
Millimolar Extinction Coeff.: (OD/µmol):	215.1	nmoles per OD:	4.65
Purity	**Desalt**	**OD's**	**8.65**
% GC Content:	**48**	**µg's**	**253.42**
Tm (1M Na+)	**87**	**nmoles**	**40.2**
Tm (50 mM Na+)	**65**		
Notes:			

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EPA	
Order Number:	26629392
Order Date:	02-Sep-2014

Line 15 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	HepF	Primer Number:	**272527B05**
Researcher	Shay Fout	Primer Length:	20
Sequence (5' to 3'):	(DNA) - CGG CCA AAA GGT GGT GGA TG	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	6,248.0	µg per OD:	26.84
Millimolar Extinction Coeff.: (OD/µmol):	232.8	nmoles per OD:	4.30
Purity	**Desalt**	**OD's**	**11.97**
% GC Content:	**60**	**µg's**	**321.15**
Tm (1M Na+)	**89**	**nmoles**	**51.5**
Tm (50 mM Na+)	**68**		
Notes:			

Line 16 - Cat No. 10336022 - - Manufactured: 9/2/2014

Primer Name:	HepR	Primer Number:	**272527B06**
Researcher	Shay Fout	Primer Length:	19
Sequence (5' to 3'):	(DNA) - CGA CGA GCC TGA CGT CGG G	Scale of Synthesis:	50 N
Molecular Weight (µg/µmole):	5,855.8	µg per OD:	28.80
Millimolar Extinction Coeff.: (OD/µmol):	203.3	nmoles per OD:	4.92
Purity	**Desalt**	**OD's**	**10.09**
% GC Content:	**74**	**µg's**	**290.65**
Tm (1M Na+)	**92**	**nmoles**	**49.7**
Tm (50 mM Na+)	**70**		
Notes:			

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Email: techsupport@lifetech.com

DATA SHEET

Organization: EPA
Address: 181186
CINCINNATI , OH 45268
Contact: Shannon Griffin

Order Id: 5395765
Order Date: 09/02/2014
Ship-To: 6111
PO No.: 01193558
Phone: 5135697174
FAX No:

450025	**TaqMan TAMRA probe 6,000 pmoles**	
CONC	**CONSTANT**	
DILUENT	**1xTE**	**100uM**
PUR	**HPLC**	

Line No: 1 **Sap No:** 10
Name: EntP
Sequence: 6FAMCGGAACCGACTACTTTGGGTGTCCGTTAMRA
Base Ct: 26
Inosine Ct: 0
Syn Dt: 09/03/2014
Ext.Coeff: 317970

MW: 9136.64
Volume: 60 uL
Pmol: 6000

450025	**TaqMan TAMRA probe 6,000 pmoles**	
CONC	**CONSTANT**	
DILUENT	**1xTE**	**100uM**
PUR	**HPLC**	

Line No: 2 **Sap No:** 20
Name: EntP
Sequence: 6FAMCGGAACCGACTACTTTGGGTGTCCGTTAMRA
Base Ct: 26
Inosine Ct: 0
Syn Dt: 09/03/2014
Ext.Coeff: 317970

MW: 9136.64
Volume: 60 uL
Pmol: 6000

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Order Date: 09/02/2014
Ship-To: 6111
PO No.: 01193558
Phone: 5135697174
FAX No:

450025 **TaqMan TAMRA probe 6,000 pmoles**
CONC **CONSTANT**
DILUENT **1xTE** **100uM**
PUR **HPLC**

Line No: 3 **Sap No:** 30
Name: NorGIBP
Sequence: 6FAMTGGACAGGAGAYCGCRATCTTAMRA
Base Ct: 20
Inosine Ct: 0
Syn Dt: 09/03/2014
Ext.Coeff: 275730

MW: 7325
Volume: 60 uL
Pmol: 6000

450025 **TaqMan TAMRA probe 6,000 pmoles**
CONC **CONSTANT**
DILUENT **1xTE** **100uM**
PUR **HPLC**

Line No: 4 **Sap No:** 40
Name: NorGIBP
Sequence: 6FAMTGGACAGGAGAYCGCRATCTTAMRA
Base Ct: 20
Inosine Ct: 0
Syn Dt: 09/03/2014
Ext.Coeff: 275730

MW: 7325
Volume: 60 uL
Pmol: 6000

Date Printed: 09/08/2014 04:30 PM

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Phone: 5135697174
FAX No:

450025 **TaqMan TAMRA probe 6,000 pmoles**
CONC **CONSTANT**
DILUENT **1xTE** **100uM**
PUR **HPLC**

Line No: 5 **Sap No:** 50
Name: NorGIIP
Sequence: 6FAMAGCACGTGGGAGGGCGATCGTAMRA
Base Ct: 20
Inosine Ct: 0
Syn Dt: 09/03/2014
Ext.Coeff: 278840

MW: 7406.53
Volume: 60 uL
Pmol: 6000

450025 **TaqMan TAMRA probe 6,000 pmoles**
CONC **CONSTANT**
DILUENT **1xTE** **100uM**
PUR **HPLC**

Line No: 6 **Sap No:** 60
Name: NorGIIP
Sequence: 6FAMAGCACGTGGGAGGGCGATCGTAMRA
Base Ct: 20
Inosine Ct: 0
Syn Dt: 09/03/2014
Ext.Coeff: 278840

MW: 7406.53
Volume: 60 uL
Pmol: 6000

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Contact: Shannon Griffin

Order Id: 5395765
Order Date: 09/02/2014
Ship-To: 6111
PO No.: 01193558
Phone: 5135697174
FAX No:

450025 TaqMan TAMRA probe 6,000 pmoles
CONC CONSTANT
DILUENT 1xTE 100uM
PUR HPLC

Line No: 7 **Sap No:** 70
Name: HepP
Sequence: 6FAMAGGTCCCTCTGGCGCTTGTGGCGAGTAMRA
Base Ct: 25
Inosine Ct: 0
Syn Dt: 09/03/2014
Ext.Coeff: 303190

MW: 8864.45
Volume: 60 uL
Pmol: 6000

450025 TaqMan TAMRA probe 6,000 pmoles
CONC CONSTANT
DILUENT 1xTE 100uM
PUR HPLC

Line No: 8 **Sap No:** 80
Name: HepP
Sequence: 6FAMAGGTCCCTCTGGCGCTTGTGGCGAGTAMRA
Base Ct: 25
Inosine Ct: 0
Syn Dt: 09/03/2014
Ext.Coeff: 303190

MW: 8864.45
Volume: 60 uL
Pmol: 6000

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