

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820002		
Moderna Lot Number:	5006820002	Specification:	SPC-1005
Date of Manufacture:	15May2020	Expiry Date:	15Aug2020

Product Attribute	Method	Parameter	Specification	Result
Appearance	SOP-0278	Appearance - Color	(b) (4)	
		Appearance - Particulates		
Identity	SOP-0544	Identity		
Concentration	SOP-0235	Concentration		
Purity	SOP-0383	Purity		
		% IG1		
		% IG2		
		% IG3		
		% Total Impurities		
% RNA Encapsulation	SOP-0298	% Encapsulation		
Dynamic Light Scattering	SOP-0107	Particle Size		
		Polydispersity		
Lipid Identification	SOP-0502	SM102		
		Cholesterol		
		DSPC		
		PEG-DMG		

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Generated Date: 19-Jun-2020

FDA-CBER-2022-1614-4622665

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820002		
Moderna Lot Number:	5006820002	Specification:	SPC-1005
Date of Manufacture:	15May2020	Expiry Date:	15Aug2020

Product Attribute	Method	Parameter	Specification	Result
Lipid Content		SM102	(b) (4)	
		Cholesterol		
		DSPC		
		PEG-DMG		
Lipid Impurities		% Area 1		
		% Area 2		
		% Area 3		
		% Area 4		
		RRT 1		
		RRT 2		
		RRT 3		
		RRT 4		
pH	SOP-0288	pH		
Osmolality	SOP-0279	Osmolality		
USP <467>	Advantar MRNA-C0000-GTM0018	Ethanol		
Bacterial Endotoxins	USP <85>	Bacterial Endotoxins		
Bioburden	SOP-0480	TAMC		
		TYMC		

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Generated Date: 19-Jun-2020

FDA-CBER-2022-1614-4622666

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820002		
Moderna Lot Number:	5006820002	Specification:	SPC-1005
Date of Manufacture:	15May2020	Expiry Date:	15Aug2020

Product Attribute	Method	Parameter	Specification	Result
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This material meets specification: Yes

Revision History:

1.0 - Original

Document Approvals
Approved Date: 19 Jun 2020

Approval Verdict: Approved	Steven Anderson, (b) (6) @modernatx.com) Quality Control Approval 19-Jun-2020 14:12:28 GMT+0000
QA Approval Verdict: Approved	(b) (6) (b) (6) @modernatx.com) Quality Assurance Approval 19-Jun-2020 15:26:54 GMT+0000

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820003		
Moderna Lot Number:	5006820003	Specification:	SPC-1005
Date of Manufacture:	16Jun2020	Expiry Date:	16Sep2020

Product Attribute	Method	Parameter	Specification	Result
Appearance	SOP-0278	Appearance - Color	(b) (4)	
		Appearance - Particulates		
Identity	SOP-0544	Identity		
Concentration	SOP-0235	Concentration		
Purity	SOP-0383	Purity		
		% IG1		
		% IG2		
		% IG3		
		% Total Impurities		
% RNA Encapsulation	SOP-0298	% Encapsulation		
Dynamic Light Scattering	SOP-0107	Particle Size		
		Polydispersity		
Lipid Identification	SOP-0502	SM102		
		Cholesterol		
		DSPC		
		PEG-DMG		

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Generated Date: 20-Jul-2020

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CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820003		
Moderna Lot Number:	5006820003	Specification:	SPC-1005
Date of Manufacture:	16Jun2020	Expiry Date:	16Sep2020

Product Attribute	Method	Parameter	Specification	Result
Lipid Content		SM102	(b) (4)	
		Cholesterol		
		DSPC		
		PEG-DMG		
Lipid Impurities		% Area 1		
		% Area 2		
		% Area 3		
		% Area 4		
		RRT 1		
		RRT 2		
		RRT 3		
		RRT 4		
pH	SOP-0288	pH		
Osmolality	SOP-0279	Osmolality		
Bacterial Endotoxins	USP <85>	Bacterial Endotoxins		
Bioburden	SOP-0480	TAMC		
		TYMC		

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Generated Date: 20-Jul-2020

FDA-CBER-2022-1614-4622670

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820003		
Moderna Lot Number:	5006820003	Specification:	SPC-1005
Date of Manufacture:	16Jun2020	Expiry Date:	16Sep2020

Product Attribute	Method	Parameter	Specification	Result
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This material meets specification: Yes

Revision History:

1.0 - Original

Document Approvals
Approved Date: 20 Jul 2020

Approval Verdict: Approved	Steven Anderson, (b) (6) @modernatx.com) Quality Control Approval 20-Jul-2020 14:49:08 GMT+0000
QA Approval Verdict: Approved	(b) (6) (b) (6) @modernatx.com) Quality Assurance Approval 20-Jul-2020 16:16:10 GMT+0000

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820004		
Moderna Lot Number:	5006820004	Specification:	SPC-1005
Date of Manufacture:	24Jun2020	Expiry Date:	24Sep2020

Product Attribute	Method	Parameter	Specification	Result
Appearance	SOP-0278	Appearance - Color	(b) (4)	
		Appearance - Particulates		
Identity	SOP-0544	Identity		
Concentration	SOP-0235	Concentration		
Purity	SOP-0383	Purity		
		% IG1		
		% IG2		
		% IG3		
		% Total Impurities		
% RNA Encapsulation	SOP-0298	% Encapsulation		
Dynamic Light Scattering	SOP-0107	Particle Size		
		Polydispersity		
Lipid Identification	SOP-0502	SM102		
		Cholesterol		
		DSPC		
		PEG-DMG		

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Generated Date: 24-Jul-2020

FDA-CBER-2022-1614-4622673

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820004		
Moderna Lot Number:	5006820004	Specification:	SPC-1005
Date of Manufacture:	24Jun2020	Expiry Date:	24Sep2020

Product Attribute	Method	Parameter	Specification	Result
Lipid Content		SM102	(b) (4)	
		Cholesterol		
		DSPC		
		PEG-DMG		
Lipid Impurities		% Area 1		
		% Area 2		
		% Area 3		
		RRT 1		
		RRT 2		
		RRT 3		
pH	SOP-0288	pH		
Osmolality	SOP-0279	Osmolality		
Bacterial Endotoxins	USP <85>	Bacterial Endotoxins		
Bioburden	SOP-0480	TAMC		
		TYMC		

This material meets specification: Yes

Revision History:
1.0 - Original

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FDA-CBER-2022-1614-4622674

Document Approvals
Approved Date: 24 Jul 2020

Approval Verdict: Approved	Steven Anderson, (b) (6) @modernatx.com) Quality Control Approval 24-Jul-2020 13:04:25 GMT+0000
QA Approval Verdict: Approved	(b) (6) (b) (6) @modernatx.com) Quality Assurance Approval 24-Jul-2020 13:51:11 GMT+0000

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820005		
Moderna Lot Number:	5006820005	Specification:	SPC-1005
Date of Manufacture:	02Jul2020	Expiry Date:	02Oct2020

Product Attribute	Method	Parameter	Specification	Result
Appearance	SOP-0278	Appearance - Color	(b) (4)	
		Appearance - Particulates		
Identity	SOP-0544	Identity		
Concentration	SOP-0235	Concentration		
Purity	SOP-0383	Purity		
		% IG1		
		% IG2		
		% IG3		
		% Total Impurities		
% RNA Encapsulation	SOP-0298	% Encapsulation		
Dynamic Light Scattering	SOP-0107	Particle Size		
		Polydispersity		
Lipid Identification	SOP-0502	SM102		
		Cholesterol		
		DSPC		
		PEG-DMG		

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Generated Date: 09-Aug-2020

FDA-CBER-2022-1614-4622676

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820005		
Moderna Lot Number:	5006820005	Specification:	SPC-1005
Date of Manufacture:	02Jul2020	Expiry Date:	02Oct2020

Product Attribute	Method	Parameter	Specification	Result
Lipid Content		SM102	(b) (4)	
		Cholesterol		
		DSPC		
		PEG-DMG		
Lipid Impurities		% Area 1		
		% Area 2		
		% Area 3		
		% Area 4		
		RRT 1		
		RRT 2		
		RRT 3		
		RRT 4		
pH	SOP-0288	pH		
Osmolality	SOP-0279	Osmolality		
Bacterial Endotoxins	USP <85>	Bacterial Endotoxins		
Bioburden	SOP-0480	TAMC		
		TYMC		

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Generated Date: 09-Aug-2020

FDA-CBER-2022-1614-4622677

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820005		
Moderna Lot Number:	5006820005	Specification:	SPC-1005
Date of Manufacture:	02Jul2020	Expiry Date:	02Oct2020

Product Attribute	Method	Parameter	Specification	Result
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This material meets specification: Yes

Revision History:

1.0 - Original

Document Approvals
Approved Date: 13 Aug 2020

Approval Verdict: Approved	Steven Anderson, (b) (6) @modernatx.com) Quality Control Approval 10-Aug-2020 17:21:16 GMT+0000
QA Approval Verdict: Approved	(b) (6) (b) (6) @modernatx.com) Quality Assurance Approval 12-Aug-2020 11:09:01 GMT+0000

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820006		
Moderna Lot Number:	5006820006	Specification:	SPC-1005
Date of Manufacture:	11Jul2020	Expiry Date:	11Oct2020

Product Attribute	Method	Parameter	Specification	Result
Appearance	SOP-0278	Appearance - Color	(b) (4)	
		Appearance - Particulates		
Identity	SOP-0544	Identity		
Concentration	SOP-0235	Concentration		
Purity	SOP-0383	Purity		
		% IG1		
		% IG2		
		% IG3		
		% Total Impurities		
% RNA Encapsulation	SOP-0298	% Encapsulation		
Dynamic Light Scattering	SOP-0107	Particle Size		
		Polydispersity		
Lipid Identification	SOP-0502	SM102		
		Cholesterol		
		DSPC		
		PEG-DMG		

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Generated Date: 17-Aug-2020

FDA-CBER-2022-1614-4622680

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820006		
Moderna Lot Number:	5006820006	Specification:	SPC-1005
Date of Manufacture:	11Jul2020	Expiry Date:	11Oct2020

Product Attribute	Method	Parameter	Specification	Result
Lipid Content		SM102	(b) (4)	
		Cholesterol		
		DSPC		
		PEG-DMG		
Lipid Impurities		% Area 1		
		% Area 2		
		% Area 3		
		% Area 4		
		RRT 1		
		RRT 2		
		RRT 3		
		RRT 4		
pH	SOP-0288	pH		
Osmolality	SOP-0279	Osmolality		
Bacterial Endotoxins	USP <85>	Bacterial Endotoxins		
Bioburden	SOP-0480	TAMC		
		TYMC		

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Generated Date: 17-Aug-2020

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CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820006		
Moderna Lot Number:	5006820006	Specification:	SPC-1005
Date of Manufacture:	11Jul2020	Expiry Date:	11Oct2020

Product Attribute	Method	Parameter	Specification	Result
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This material meets specification: Yes

Revision History:

1.0 - Original

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Generated Date: 17-Aug-2020

FDA-CBER-2022-1614-4622682

Document Approvals
Approved Date: 18 Aug 2020

Approval Verdict: Approved	Steven Anderson, (b) (6) @modernatx.com) Quality Control Approval 17-Aug-2020 17:27:09 GMT+0000
QA Approval Verdict: Approved	(b) (6) (b) (6) @modernatx.com) Quality Assurance Approval 18-Aug-2020 18:30:39 GMT+0000

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820007		
Moderna Lot Number:	5006820007	Specification:	SPC-1005
Date of Manufacture:	17Jul2020	Expiry Date:	15Oct2020

Product Attribute	Method	Parameter	Specification	Result
Appearance	SOP-0278	Appearance - Color	(b) (4)	
		Appearance - Particulates		
Identity	SOP-0544	Identity		
Concentration	SOP-0235	Concentration		
Purity	SOP-0383	Purity		
		% IG1		
		% IG2		
		% IG3		
		% Total Impurities		
% RNA Encapsulation	SOP-0298	% Encapsulation		
Dynamic Light Scattering	SOP-0107	Particle Size		
		Polydispersity		
Lipid Identification	SOP-0502	SM102		
		Cholesterol		
		DSPC		
		PEG-DMG		

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Generated Date: 18-Aug-2020

FDA-CBER-2022-1614-4622684

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820007		
Moderna Lot Number:	5006820007	Specification:	SPC-1005
Date of Manufacture:	17Jul2020	Expiry Date:	15Oct2020

Product Attribute	Method	Parameter	Specification	Result
Lipid Content		SM102	(b) (4)	
		Cholesterol		
		DSPC		
		PEG-DMG		
Lipid Impurities		% Area 1		
		% Area 2		
		% Area 3		
		% Area 4		
		RRT 1		
		RRT 2		
		RRT 3		
		RRT 4		
pH	SOP-0288	pH		
Osmolality	SOP-0279	Osmolality		
Bacterial Endotoxins	USP <85>	Bacterial Endotoxins		
Bioburden	SOP-0480	TAMC		
		TYMC		

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Generated Date: 18-Aug-2020

FDA-CBER-2022-1614-4622685

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50068
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5006820007		
Moderna Lot Number:	5006820007	Specification:	SPC-1005
Date of Manufacture:	17Jul2020	Expiry Date:	15Oct2020

Product Attribute	Method	Parameter	Specification	Result
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This material meets specification: Yes

Revision History:

1.0 - Original

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Page 3 of 3

Generated Date: 18-Aug-2020

FDA-CBER-2022-1614-4622686

Document Approvals
Approved Date: 19 Aug 2020

Approval Verdict: Approved	Steven Anderson, (b) (6) @modernatx.com) Quality Control Approval 18-Aug-2020 23:28:36 GMT+0000
QA Approval Verdict: Approved	(b) (6) (b) (6) @modernatx.com) Quality Assurance Approval 19-Aug-2020 16:21:22 GMT+0000

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50073
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5007320002		
Moderna Lot Number:	5007320002	Specification:	SPC-1005
Date of Manufacture:	24Sep2020	Expiry Date:	23Dec2020

Product Attribute	Method	Parameter	Specification	Result
Appearance	SOP-0278	Appearance - Color	(b) (4)	
		Appearance - Particulates		
Identity	SOP-0544	Identity		
Concentration	SOP-0235	Concentration		
Purity	SOP-0383	Purity		
		% IG1		
		% IG2		
		% IG3		
		% Total Impurities		
% RNA Encapsulation	SOP-0298	% Encapsulation		
Dynamic Light Scattering	SOP-0107	Particle Size		
		Polydispersity		
Lipid Identification	SOP-0502	SM102		
		Cholesterol		
		DSPC		
		PEG-DMG		

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Generated Date: 22-Oct-2020

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Confidential and Proprietary

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50073
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5007320002		
Moderna Lot Number:	5007320002	Specification:	SPC-1005
Date of Manufacture:	24Sep2020	Expiry Date:	23Dec2020

Product Attribute	Method	Parameter	Specification	Result
Lipid Content		SM102	(b) (4)	
		Cholesterol		
		DSPC		
		PEG-DMG		
Lipid Impurities		% Area 1		
		% Area 2		
		% Area 3		
		% Area 4		
		RRT 1		
		RRT 2		
		RRT 3		
		RRT 4		
		% Total Impurities		
pH	SOP-0288	pH		
Osmolality	SOP-0279	Osmolality		
Bacterial Endotoxins	USP <85>	Bacterial Endotoxins		
Bioburden	SOP-0480	TAMC		
		TYMC		

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Generated Date: 22-Oct-2020

FDA-CBER-2022-1614-4622689
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Confidential and Proprietary

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50073
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5007320002		
Moderna Lot Number:	5007320002	Specification:	SPC-1005
Date of Manufacture:	24Sep2020	Expiry Date:	23Dec2020

Product Attribute	Method	Parameter	Specification	Result
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This material meets specification: Yes

Revision History:

1.0 - Original

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FDA-CBER-2022-1614-4622690
Page 3 of 4

Confidential and Proprietary

Document Approvals
Approved Date: 23 Oct 2020

Approval Verdict: Approved	Steven Anderson, (b) (6) @modernatx.com) Quality Control Approval 23-Oct-2020 00:17:45 GMT+0000
QA Approval Verdict: Approved	(b) (6) (b) (6) @modernatx.com) Quality Assurance Approval 23-Oct-2020 21:43:07 GMT+0000

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50073
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5007320004		
Moderna Lot Number:	5007320004	Specification:	SPC-1005
Date of Manufacture:	30Sep2020	Expiry Date:	29Dec2020

Product Attribute	Method	Parameter	Specification	Result
Appearance	SOP-0278	Appearance - Color	(b) (4)	
		Appearance - Particulates		
Identity	SOP-0544	Identity		
Concentration	SOP-0235	Concentration		
Purity	SOP-0383	Purity		
		% IG1		
		% IG2		
		% IG3		
		% Total Impurities		
% RNA Encapsulation	SOP-0298	% Encapsulation		
Dynamic Light Scattering	SOP-0107	Particle Size		
		Polydispersity		
Lipid Identification	SOP-0502	SM102		
		Cholesterol		
		DSPC		
		PEG-DMG		

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Generated Date: 22-Oct-2020

FDA-CBER-2022-1614-4622692
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Confidential and Proprietary

CERTIFICATE OF ANALYSIS

Product Description:	mRNA-1273	Moderna Part #:	50073
Manufacturer Name:	Moderna	Container/Closure:	(b) (4)
Manufacturer Lot:	5007320004		
Moderna Lot Number:	5007320004	Specification:	SPC-1005
Date of Manufacture:	30Sep2020	Expiry Date:	29Dec2020

Product Attribute	Method	Parameter	Specification	Result
Lipid Content		SM102	(b) (4)	
		Cholesterol		
		DSPC		
		PEG-DMG		
Lipid Impurities		% Area 1		
		% Area 2		
		% Area 3		
		RRT 1		
		RRT 2		
		RRT 3		
		% Total Impurities		
pH	SOP-0288	pH		
Osmolality	SOP-0279	Osmolality		
Bacterial Endotoxins	USP <85>	Bacterial Endotoxins		
Bioburden	SOP-0480	TAMC		
		TYMC		

This material meets specification: Yes

Revision History:

1.0 - Original

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Page 2 of 2

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FDA-CBER-2022-1614-4622693
Page 2 of 3

Confidential and Proprietary

Document Approvals
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QA Approval Verdict: Approved	(b) (6) (b) (6) modernatx.com) Quality Assurance Approval 23-Oct-2020 21:34:29 GMT+0000