

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 1: Stability Data for Product 60075, Lot 6007520002 at -60°C to -90°C

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	3 Months	6 Months	9 Months	12 Months
Appearance	Visual	White to off-white dispersion.	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion	NT*	White to off-white dispersion	White to off-white dispersion
		May contain visible, white or translucent product-related particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates	NT*	Essentially Free of Particulates	Essentially Free of Particulates
RNA Content	AEX-HPLC	(b) (4)			-	(b) (4)	NT*	(b) (4)	
Purity	RP-HPLC				(b) (4)		NT*		
Product-related Impurities	RP-HPLC						NT*		
							NT*		
							NT*		
							NT*		
% RNA Encapsulation	(b) (4)						NT*		
In vitro Translation	In vitro translation / methionine labelling						-		

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 1: Stability Data for Product 60075, Lot 6007520002 at -60°C to -90°C (continued)

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	3 Months	6 Months	9 Months	12 Months
pH	USP <791>	(b) (4)	(b) (4)		-	(b) (4)	NT*	NT*	(b) (4)
Particle Size	Dynamic light scattering				(b) (4)			(b) (4)	(b) (4)
Polydispersity									
Lipid Identification									
SM-102	UPLC-CAD				-			NT*	
Cholesterol					-			NT*	
DSPC					-			NT*	
PEG2000-DMG					-			NT*	
Lipid Content									
SM-102	UPLC-CAD				-			NT*	
Cholesterol					-			NT*	
DSPC					-			NT*	
PEG2000-DMG					-			NT*	
Lipid Impurities	UPLC-CAD				-			NT*	
			-		NT*				

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 1: Stability Data for Product 60075, Lot 6007520002 at -60°C to -90°C (continued)

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	3 Months	6 Months	9 Months	12 Months
Particulate Matter									
≥ 10 µm	USP <788> Method 2	(b) (4)	(b) (4)	-	-	-	-	-	(b) (4)
≥ 25 µm				-	-	-	-	-	
Bacterial Endotoxins	USP <85>, Ph. Eur. 2.6.14			-	-	-	-	-	
Sterility	USP <71>, Ph. Eur. 2.6.1			-	-	-	-	-	
Container Closure Integrity	USP <1207>	Pass	-	-	-	-	-	-	Pass

^a %RNA Encapsulation method changed from (b) (4) to (b) (4) during the study. Methods are equivalent.

NT: Not Tested, Refer to QE-005517

"-": Not applicable per the stability protocol

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 2: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at -60°C to -90°C

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
Release	Release	Lipid Impurities	1	(b) (4)		
Release	Release	Lipid Impurities	1			
Release	Release	Lipid Impurities	2			
Release	Release	Lipid Impurities	2			
Release	Release	Lipid Impurities	3			
Release	Release	Lipid Impurities	3			
Release	Release	Lipid Impurities	4			
Release	Release	Lipid Impurities	4			
Release	Release	Lipid Impurities	5			
Release	Release	Lipid Impurities	5			
Release	Release	Lipid Impurities	6			
Release	Release	Lipid Impurities	6			

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 2: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at -60°C to -90°C (continued)

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
-60°C to -90°C	1 Month	Lipid Impurities	1	(b) (4)		
-60°C to -90°C	1 Month	Lipid Impurities	1			
-60°C to -90°C	1 Month	Lipid Impurities	2			
-60°C to -90°C	1 Month	Lipid Impurities	2			
-60°C to -90°C	1 Month	Lipid Impurities	3			
-60°C to -90°C	1 Month	Lipid Impurities	3			
-60°C to -90°C	1 Month	Lipid Impurities	4			
-60°C to -90°C	1 Month	Lipid Impurities	4			
-60°C to -90°C	3 Month	Lipid Impurities	1			
-60°C to -90°C	3 Month	Lipid Impurities	1			
-60°C to -90°C	3 Month	Lipid Impurities	2			
-60°C to -90°C	3 Month	Lipid Impurities	2			
-60°C to -90°C	3 Month	Lipid Impurities	3			
-60°C to -90°C	3 Month	Lipid Impurities	3			
-60°C to -90°C	3 Month	Lipid Impurities	4			
-60°C to -90°C	3 Month	Lipid Impurities	4			

Stability Study : STY_00689
Lot Number: 6007520002
Product: 60075
Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap
Manufacturing Date: 02Jun2020
Construct/mRNA Code: mRNA-1273
Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 2: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at -60°C to -90°C (continued)

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
-60°C to -90°C	9 Month	Lipid Impurities	1	(b) (4)		
-60°C to -90°C	9 Month	Lipid Impurities	1			
-60°C to -90°C	9 Month	Lipid Impurities	2			
-60°C to -90°C	9 Month	Lipid Impurities	2			
-60°C to -90°C	9 Month	Lipid Impurities	3			
-60°C to -90°C	9 Month	Lipid Impurities	3			
-60°C to -90°C	9 Month	Lipid Impurities	4			
-60°C to -90°C	9 Month	Lipid Impurities	4			
-60°C to -90°C	9 Month	Lipid Impurities	5			
-60°C to -90°C	9 Month	Lipid Impurities	5			
-60°C to -90°C	9 Month	Lipid Impurities	6			
-60°C to -90°C	9 Month	Lipid Impurities	6			
-60°C to -90°C	9 Month	Lipid Impurities	7			
-60°C to -90°C	9 Month	Lipid Impurities	7			

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 2: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at -60°C to -90°C (continued)

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
-60°C to -90°C	12 Month	Lipid Impurities	1	(b) (4)		
-60°C to -90°C	12 Month	Lipid Impurities	1			
-60°C to -90°C	12 Month	Lipid Impurities	2			
-60°C to -90°C	12 Month	Lipid Impurities	2			
-60°C to -90°C	12 Month	Lipid Impurities	3			
-60°C to -90°C	12 Month	Lipid Impurities	3			
-60°C to -90°C	12 Month	Lipid Impurities	4			
-60°C to -90°C	12 Month	Lipid Impurities	4			
-60°C to -90°C	12 Month	Lipid Impurities	5			
-60°C to -90°C	12 Month	Lipid Impurities	5			
-60°C to -90°C	12 Month	Lipid Impurities	6			
-60°C to -90°C	12 Month	Lipid Impurities	6			
-60°C to -90°C	12 Month	Lipid Impurities	7			
-60°C to -90°C	12 Month	Lipid Impurities	7			
-60°C to -90°C	12 Month	Lipid Impurities	8			
-60°C to -90°C	12 Month	Lipid Impurities	8			
-60°C to -90°C	12 Month	Lipid Impurities	9			
-60°C to -90°C	12 Month	Lipid Impurities	9			

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 3: Stability Data for Product 60075, Lot 6007520002 at -20°C ± 5°C

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	3 Months	4.5 Months	6 Months	9 Months	12 Months
Appearance	Visual	White to off-white dispersion.	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion	-	NT*	White to off-white dispersion	White to off-white dispersion
		May contain visible, white or translucent product-related particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates	-	NT*	Essentially Free of Particulates	Essentially Free of Particulates
RNA Content	AEX-HPLC	(b) (4)			-	(b) (4)	-	NT*	NT*	(b) (4)
Purity	RP-HPLC	(b) (4)							(b) (4)	
Product-related Impurities	RP-HPLC									
% RNA Encapsulation	(b) (4)	(b) (4)					-	NT*		
In vitro Translation	In vitro translation / methionine labelling	(b) (4)			-	(b) (4)	-	(b) (4)		

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 3: Stability Data for Product 60075, Lot 6007520002 at -20°C ± 5°C (continued)

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	3 Months	4.5 Months	6 Months	9 Months	12 Months		
pH	USP <791>	(b) (4)			-	(b) (4)	-	NT*	NT*	(b) (4)		
Particle Size	Dynamic light scattering				(b) (4)		-	(b) (4)				
Polydispersity							-					
Lipid Identification												
SM-102	UPLC-CAD				-		-	NT*	NT*			
Cholesterol					-		-	NT*	NT*			
DSPC					-		-	NT*	NT*			
PEG2000-DMG					-		-	NT*	NT*			
Lipid Content												
SM-102	UPLC-CAD				-		-	NT*	NT*			
Cholesterol					-		-	NT*	NT*			
DSPC					-		-	NT*	NT*			
PEG2000-DMG					-		-	NT*	NT*			
Lipid Impurities	UPLC-CAD				-		-	NT*	NT*			
					-		-	NT*	NT*			

Stability Study : STY_00689
Lot Number: 6007520002
Product: 60075
Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap
Manufacturing Date: 02Jun2020
Construct/mRNA Code: mRNA-1273
Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 3: Stability Data for Product 60075, Lot 6007520002 at -20°C ± 5°C (continued)

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	3 Months	4.5 Months	6 Months	9 Months	12 Months
Osmolality	USP <785> Freezing Point Depression	(b) (4)		-	-	-	-	NT*	-	-

* %RNA Encapsulation method changed from (b) (4) to (b) (4) during the study. Methods are equivalent.

NT: Not Tested, Refer to QE-005517

"-": Not applicable per the stability protocol

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 4: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at -20°C ± 5°C

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
Release	Release	Lipid Impurities	1	(b) (4)		
Release	Release	Lipid Impurities	1			
Release	Release	Lipid Impurities	2			
Release	Release	Lipid Impurities	2			
Release	Release	Lipid Impurities	3			
Release	Release	Lipid Impurities	3			
Release	Release	Lipid Impurities	4			
Release	Release	Lipid Impurities	4			
Release	Release	Lipid Impurities	5			
Release	Release	Lipid Impurities	5			
Release	Release	Lipid Impurities	6			
Release	Release	Lipid Impurities	6			
Release	1 Month	Lipid Impurities	1			
Release	1 Month	Lipid Impurities	1			
Release	1 Month	Lipid Impurities	2			

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) -

(b) (4)

Table 4: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at -20°C ± 5°C (continued)

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
-20°C ± 5°C	1 Month	Lipid Impurities	2	(b) (4)		
-20°C ± 5°C	1 Month	Lipid Impurities	3			
-20°C ± 5°C	1 Month	Lipid Impurities	3			
-20°C ± 5°C	1 Month	Lipid Impurities	4			
-20°C ± 5°C	1 Month	Lipid Impurities	4			
-20°C ± 5°C	3 Month	Lipid Impurities	1			
-20°C ± 5°C	3 Month	Lipid Impurities	1			
-20°C ± 5°C	3 Month	Lipid Impurities	2			
-20°C ± 5°C	3 Month	Lipid Impurities	2			
-20°C ± 5°C	3 Month	Lipid Impurities	3			
-20°C ± 5°C	3 Month	Lipid Impurities	3			
-20°C ± 5°C	3 Month	Lipid Impurities	4			
-20°C ± 5°C	3 Month	Lipid Impurities	4			
-20°C ± 5°C	3 Month	Lipid Impurities	5			
-20°C ± 5°C	3 Month	Lipid Impurities	5			

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 5: Stability Data for Product 60075, Lot 6007520002 at 5°C ± 3°C

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	2.5 Months	3 Months	4 Months	6 Months
Appearance	Visual	White to off-white dispersion.	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion	NT*
		May contain visible, white or translucent product-related particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates	NT*
RNA Content	AEX-HPLC	(b) (4)			-	-	(b) (4)	-	(b) (4)
Purity	RP-HPLC	(b) (4)							NT*
Product-related Impurities	RP-HPLC								NT*
									NT*
									NT*
% RNA Encapsulation	(b) (4)	(b) (4)			-	-	(b) (4)	-	NT*
In vitro Translation	In vitro translation / methionine labelling	(b) (4)			-	-	(b) (4)	-	(b) (4)

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 5: Stability Data for Product 60075, Lot 6007520002 at 5°C ± 3°C (continued)

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	2.5 Months	3 Months	4 Months	6 Months
pH	USP <791>	(b) (4)			-	-	(b) (4)	-	NT*
Particle Size	Dynamic light scattering	(b) (4)						(b) (4)	NT*
Polydispersity									NT*
Lipid Identification									
SM-102	UPLC-CAD	(b) (4)			-	-		-	NT*
Cholesterol					-	-		-	NT*
DSPC					-	-		-	NT*
PEG2000-DMG					-	-		-	NT*
Lipid Content									
SM-102	UPLC-CAD	(b) (4)			-	-		-	NT*
Cholesterol					-	-		-	NT*
DSPC					-	-		-	NT*
PEG2000-DMG					-	-		-	NT*
Lipid Impurities	UPLC-CAD	(b) (4)			-	-		-	NT*
					-	-	-	NT*	

Stability Study : STY_00689
Lot Number: 6007520002
Product: 60075
Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap
Manufacturing Date: 02Jun2020
Construct/mRNA Code: mRNA-1273
Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 5: Stability Data for Product 60075, Lot 6007520002 at 5°C ± 3°C (continued)

Test	Method	Shelf-life Acceptance Criteria	Release	1 Month	2 Months	2.5 Months	3 Months	4 Months	6 Months
Particulate Matter									
≥ 10 µm	USP <788> Method 2	(b) (4)		-	-	-	-	-	(b) (4)
≥ 25 µm				-	-	-	-	-	
Bacterial Endotoxins	USP <85>, Ph. Eur. 2.6.14			-	-	-	-	-	
Sterility	USP <71>, Ph. Eur. 2.6.1			-	-	-	-	-	

^a Tested with (b) (4) method NT: Not Tested, Refer to QE-005517 "-": Not applicable per the stability protocol

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 6: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at 5°C ± 3°C

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
Release	Release	Lipid Impurities	1	(b) (4)		
Release	Release	Lipid Impurities	1			
Release	Release	Lipid Impurities	2			
Release	Release	Lipid Impurities	2			
Release	Release	Lipid Impurities	3			
Release	Release	Lipid Impurities	3			
Release	Release	Lipid Impurities	4			
Release	Release	Lipid Impurities	4			
Release	Release	Lipid Impurities	5			
Release	Release	Lipid Impurities	5			
Release	Release	Lipid Impurities	6			
Release	Release	Lipid Impurities	6			

Stability Study : STY_00689
Lot Number: 6007520002
Product: 60075
Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020
Construct/mRNA Code: mRNA-1273
Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 6: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at 5°C ± 3°C (continued)

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
5°C ± 3°C	1 Month	Lipid Impurities	1	(b) (4)		
5°C ± 3°C	1 Month	Lipid Impurities	1			
5°C ± 3°C	1 Month	Lipid Impurities	2			
5°C ± 3°C	1 Month	Lipid Impurities	2			
5°C ± 3°C	1 Month	Lipid Impurities	3			
5°C ± 3°C	1 Month	Lipid Impurities	3			
5°C ± 3°C	1 Month	Lipid Impurities	4			
5°C ± 3°C	1 Month	Lipid Impurities	4			
5°C ± 3°C	1 Month	Lipid Impurities	5			
5°C ± 3°C	1 Month	Lipid Impurities	5			
5°C ± 3°C	1 Month	Lipid Impurities	6			
5°C ± 3°C	1 Month	Lipid Impurities	6			
5°C ± 3°C	1 Month	Lipid Impurities	7			
5°C ± 3°C	1 Month	Lipid Impurities	7			

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 6: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at 5°C ± 3°C (continued)

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
5°C ± 3°C	3 Month	Lipid Impurities	1	(b) (4)		
5°C ± 3°C	3 Month	Lipid Impurities	1			
5°C ± 3°C	3 Month	Lipid Impurities	2			
5°C ± 3°C	3 Month	Lipid Impurities	2			
5°C ± 3°C	3 Month	Lipid Impurities	3			
5°C ± 3°C	3 Month	Lipid Impurities	3			
5°C ± 3°C	3 Month	Lipid Impurities	4			
5°C ± 3°C	3 Month	Lipid Impurities	4			
5°C ± 3°C	3 Month	Lipid Impurities	5			
5°C ± 3°C	3 Month	Lipid Impurities	5			
5°C ± 3°C	3 Month	Lipid Impurities	6			
5°C ± 3°C	3 Month	Lipid Impurities	6			
5°C ± 3°C	3 Month	Lipid Impurities	7			
5°C ± 3°C	3 Month	Lipid Impurities	7			
5°C ± 3°C	3 Month	Lipid Impurities	8			
5°C ± 3°C	3 Month	Lipid Impurities	8			

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 7: Stability Data for Product 60075, Lot 6007520002 at 25°C ± 2°C

Test	Method	Shelf-life Acceptance Criteria	Release	24 Hours	72 Hours
Appearance	Visual	White to off-white dispersion.	White to off-white dispersion	White to off-white dispersion	White to off-white dispersion
		May contain visible, white or translucent product-related particulates	Essentially Free of Particulates	Essentially Free of Particulates	Essentially Free of Particulates
RNA Content	AEX-HPLC	(b) (4)			
Purity	RP-HPLC				
Product-related Impurities	RP-HPLC				
% RNA Encapsulation	(b) (4)				
In vitro Translation	In vitro translation / methionine labelling				

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 7: Stability Data for Product 60075, Lot 6007520002 at 25°C ± 2°C (continued)

Test	Method	Shelf-life Acceptance Criteria	Release	24 Hours	72 Hours
pH	USP <791>	(b) (4)			
Particle Size	Dynamic light scattering				
Polydispersity					
Lipid Identification					
SM-102	UPLC-CAD				
Cholesterol					
DSPC					
PEG2000-DMG					
Lipid Content					
SM-102	UPLC-CAD				
Cholesterol					
DSPC					
PEG2000-DMG					
Lipid Impurities	UPLC-CAD				

^a Tested with (b) (4) method "-": Not applicable per the stability protocol

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 8: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at 25°C ± 2°C

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
Release	Release	Lipid Impurities	1	(b) (4)		
Release	Release	Lipid Impurities	1			
Release	Release	Lipid Impurities	2			
Release	Release	Lipid Impurities	2			
Release	Release	Lipid Impurities	3			
Release	Release	Lipid Impurities	3			
Release	Release	Lipid Impurities	4			
Release	Release	Lipid Impurities	4			
Release	Release	Lipid Impurities	5			
Release	Release	Lipid Impurities	5			
Release	Release	Lipid Impurities	6			
Release	Release	Lipid Impurities	6			

Stability Study : STY_00689

Lot Number: 6007520002

Product: 60075

Container: 10R Glass Vial, 20mm Stopper, 20mm Plascap

Manufacturing Date: 02Jun2020

Construct/mRNA Code: mRNA-1273

Manufacturing Site: Moderna Technology Center (MTC) - (b) (4)

Table 8: Lipid Impurity Stability Data for Product 60075, Lot 6007520002 at 25°C ± 2°C (continued)

Condition	Time Point	Test	Replicate ID	Parameter	Shelf-life Acceptance Criteria	Result
25°C ± 2°C	24 Hours	Lipid Impurities	1	(b) (4)		
25°C ± 2°C	24 Hours	Lipid Impurities	1			
25°C ± 2°C	24 Hours	Lipid Impurities	2			
25°C ± 2°C	24 Hours	Lipid Impurities	2			
25°C ± 2°C	24 Hours	Lipid Impurities	3			
25°C ± 2°C	24 Hours	Lipid Impurities	3			
25°C ± 2°C	24 Hours	Lipid Impurities	4			
25°C ± 2°C	24 Hours	Lipid Impurities	4			
25°C ± 2°C	24 Hours	Lipid Impurities	5			
25°C ± 2°C	24 Hours	Lipid Impurities	5			
25°C ± 2°C	72 Hours	Lipid Impurities	1			
25°C ± 2°C	72 Hours	Lipid Impurities	1			
25°C ± 2°C	72 Hours	Lipid Impurities	2			
25°C ± 2°C	72 Hours	Lipid Impurities	2			
25°C ± 2°C	72 Hours	Lipid Impurities	3			
25°C ± 2°C	72 Hours	Lipid Impurities	3			
25°C ± 2°C	72 Hours	Lipid Impurities	4			
25°C ± 2°C	72 Hours	Lipid Impurities	4			
25°C ± 2°C	72 Hours	Lipid Impurities	5			
25°C ± 2°C	72 Hours	Lipid Impurities	5			