3.2.S.4.3 Validation of Analytical Procedures

The analytical procedures for used for release and stability testing of mRNA-1273 LNP lots were confirmed as suitable for their intended use through method validation and/or qualification studies. Summaries of these studies are indexed in Table 1. All methods except Bioburden are the same as used for Drug Product, thus reference is made for those summaries to Section 3.2.P.5.3.

Table 1: Index of Method Validation Summaries for mRNA-1273 LNP

Test	Method	Section
Appearance	Visual	Section 3.2.P.5.3 {Appearance}
Identity	RTSS	Section 3.2.P.5.3 {Identity}
Total RNA Content	AEX-HPLC	Section 3.2.P.5.3 {RNA Content}
Purity Product-Related Impurities	RPIP-HPLC	Section 3.2.P.5.3 {Purity and Product-Related Impurities}
%RNA Encapsulation	(b) (4)	Section 3.2.P.5.3 {% RNA Encapsulation}
Filtered Mean Particle Size	DLS	Section 3.2.P.5.3 {Particle Size and Polydispersity}
Filtered Polydispersity		
Lipid Identification	HPLC-CAD	Section 3.2.P.5.3 (Lipid ID, Lipid Content, Lipid Impurities}
Lipid Content		
pH	USP <791>	Section 3.2.P.5.3 {pH}
Osmolality – Freezing Point Depression	USP <785>	Section 3.2.P.5.3 {Osmolality}
Bacterial Endotoxins	USP <85>, Ph. Eur. 2.6.14	Section 3.2.P.5.3 {Bacterial Endotoxin}
Bioburden	USP <61>, Ph. Eur. 2.6.12	Section 3.2.S.4.3 {mRNA-1273 LNP - Bioburden}

Abbreviations: AEX-HPLC = anion exchange high-performance liquid chromatography; DLS = dynamic light scattering; (b) (4) RP-HPLC = reverse-phase high-performance liquid chromatography; RPIP-HPLC = reverse-phase ion-paired high-performance liquid chromatography; RTSS = reverse transcription Sanger sequencing