

## USP Reference Standards/ARMS to support various vaccine platforms

Vaccine type	Vaccine platform	Carrier protein	Identity	Molar mass and sizing standards			Formulation assessment	Impurities	
		CRM197 <sup>1</sup> <a href="#">↗</a>	PS NMR SS <sup>2</sup> <a href="#">↗</a>	Thyroglobulin <a href="#">↗</a>	BSA <a href="#">↗</a>	Pullulan	Squalene <a href="#">↗</a>	Octoxynol-9 <a href="#">↗</a>	gDNA <a href="#">↗</a>
Viral	Inactivated			X	X		X	X	X
	Attenuated virus			X	X				X
Nucleic acid	Viral vector			X	X			X	X
	mRNA		X						X
	DNA		X						
Isolated antigen presentation	Subunit	X	X	X	X	X	X	X	X
	VLP			X	X	X	X		

<sup>1</sup> CRM: Cross-Reacting Material 197

<sup>2</sup> PS NMR SS: Polysaccharide Nuclear Magnetic Resonance System Suitability

[↗](#) External link for additional information