

## Comparison of Alternative Influenza Hemagglutinin Protein Quantification Methods to SRID (Gold Standard)

	VaxArray <sup>®</sup> Influenza	ELISA	HPLC	IDMS	SPR	SRID
Time to Result						
Functional Assay				<sup>a</sup>		
Stability Indicating			<sup>a</sup>	<sup>a</sup>		
Eliminates Need for Antisera						
Subtype Specific			<sup>a</sup>			
Limit of Detection <sup>b</sup>	~0.01 µg/mL	~0.5 µg/mL <sup>d</sup>	~0.25 µg/mL <sup>c</sup>	~2 pmol/mL <sup>e</sup>	~0.5 µg/mL <sup>c</sup>	~3 µg/mL <sup>c</sup>
Quantification Range <sup>b</sup>	0.01-1 µg/mL	0.2-16 µg/mL <sup>d</sup>	2.5-100 µg/mL <sup>c</sup>	2-120 pmol/mL <sup>e</sup>	1.0-15 µg/mL <sup>c</sup>	8-32 µg/mL <sup>c</sup>
Cost Index <sup>f</sup>	5	17	7	329	301	158
Substrate Ready to Use						
No Sample Digestion Needed						
In Process Samples		<sup>a</sup>		<sup>a</sup>		
Mono → Quadrivalent						
Multiplexed						
Commercially Available						
Available as Service						

### References:

- a. May meet requirement but not always or only in certain conditions
- b. Subtype dependent
- c. Thompson, C.M., Petiot, E. Lennaertz, A., Henry, O., Kamen, A.A. "Analytical Technologies for Influenza Virus-Like Particle Candidate Vaccines: Challenges and Emerging Approaches" (2013) Virology Journal 10:141.
- d. Bodle J, Verity EE, Ong C, Vandenberg K, Shaw R, Barr IG, Rockman S. "Development of an Enzyme-Linked Immunoassay for the Quantitation of Influenza Haemagglutinin: an Alternative Method to Single Radial Immunodiffusion." Influenza Other Respir Viruses. (2013) 7(2):191-200.
- e. Pierce CL, Williams TL, Moura H, Pirkle JL, Cox NJ, Stevens J, Donis R, Barr JR. "Quantification of Immunoreactive Viral Influenza Proteins by Immunoaffinity Capture and Isotope-Dilution Liquid Chromatography- Tandem Mass Spectrometry." Analytical Chemistry (2011) 83, 4729-4737.
- f. Calculated based on industry factors: 
$$\text{Cost Index} = \frac{(\text{Capital Equipment} + \text{Reagents} + \text{Labor}) \times (\text{TTR Factor})}{(\text{Seasonal Dependence Factor} \times \text{QbD Factor} \times \text{Commercial Availability Factor})}$$