

The Cost of Innovation: Comparative Analysis of LAL vs. rFC/rCR in Butantan's Flu Vaccine Production

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Analytical R&D



Current Status of LAL testing in Butantan



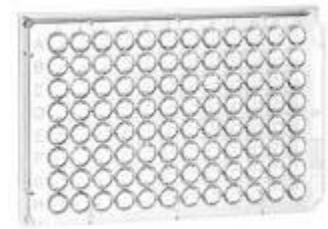
Gel-Clot



**LAL Cartridge
Kinetic Chromogenic**



**LAL Kinetic Turbidimetric
Plate**



Implementation of Recombinant endotoxin testing

Implementation of Recombinant endotoxin testing

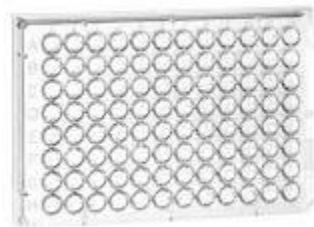
rCR Cartridges

Kinetic Chromogenic



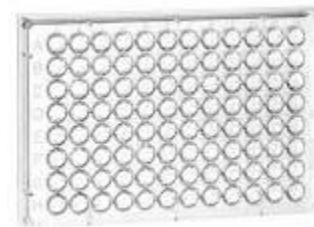
rCR Plate

Kinetic Chromogenic



rFC Plate

Kinetic Fluorescence



Implementation of Recombinant endotoxin testing

	rCR Cartridges	rCR Plate	rFC Plate
Equipment	✓ LAL Cartridges	✓ LAL Turbidimetric	\$ US\$ 67,000.00
Software	✓ LAL Cartridges	✓ LAL Turbidimetric	
Reagents	\$	\$	\$

Implementation of Recombinant endotoxin testing



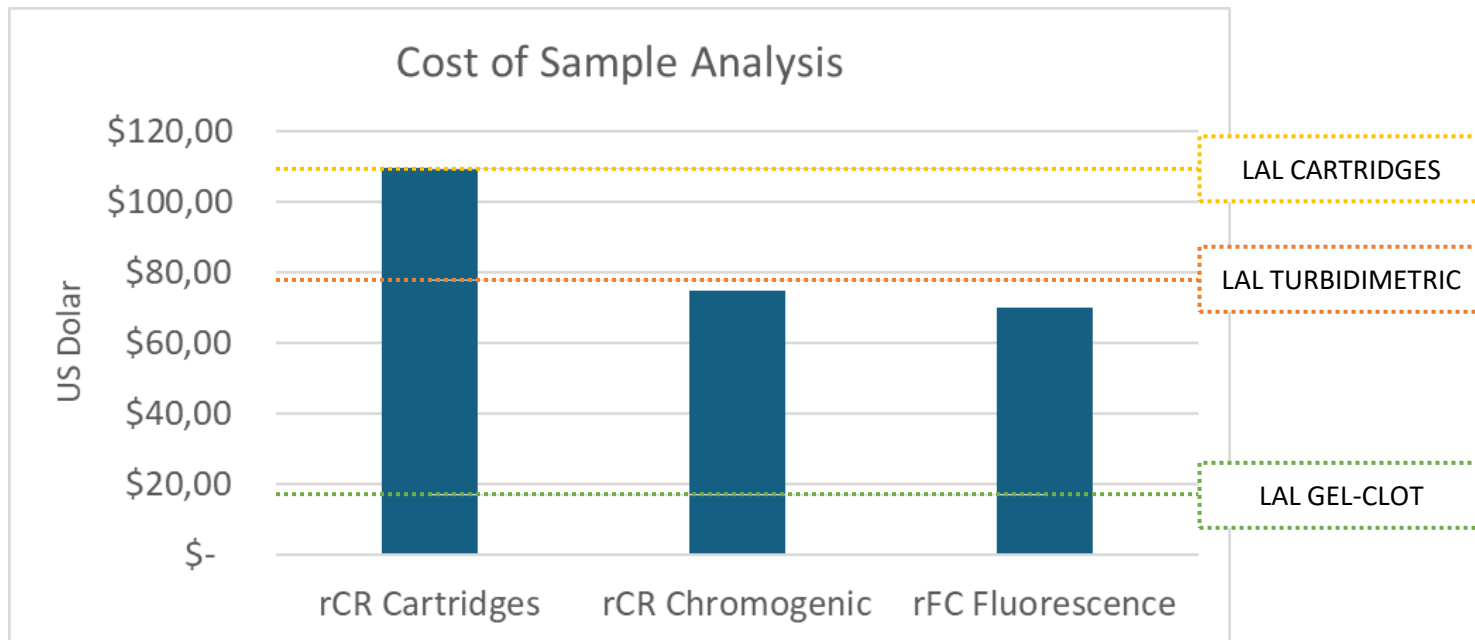
	Preliminary Tests	Analytical Development	Analytical Validation	Comparability
rCR cartridge (chromogenic)	✓	✓	✓	3rd Trimester 2026
rCR plate (chromogenic)	✓	🚶	1st Trimester 2026	
rFC plate (fluorescence)	✓	2nd Trimester 2026	2nd Trimester 2026	

Implementation of Recombinant endotoxin testing



	Preliminary Tests	Analytical Development	Analytical Validation	Comparability
rCR cartridge (chromogenic)	✓	\$ US\$ 1,887.00	\$ US\$ 4,082.00	...
rCR plate (chromogenic)	✓		...	
rFC plate (fluorescence)	✓	

Implementation of Recombinant endotoxin testing



Estimative of the Impact of Implementation of Recombinant endotoxin testing for Flu Vaccine

	rCR Cartridges	rCR Plate	rFC Plate
Monovalent DS	+ US\$ 4532,29	- US\$ 432.24	- US\$ 1.133,75
Trivalent DP	+ US\$ 2,884,18	- US\$ 275,06	- US\$ 721,48
TOTAL	+ US\$ 7,416.48	- US\$ 707,30	- US\$ 1.855,22



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Thank you! Obrigada!

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GOVERNO DO ESTADO
SÃO PAULO SÃO TODOS