

THE LANCET Infectious Diseases

Supplementary webappendix

This webappendix formed part of the original submission and has been peer reviewed.
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Supplement to: Su S, Wong G, Qiu X, Kobinger G, Bi Y, Zhou J. Diagnostic strategies for Ebola virus detection. *Lancet Infect Dis* 2016; **16**: 294–95.

Appendix. List of assays for detecting filovirus infections, as approved by the FDA for emergency use. The three kits also approved by the WHO and discussed in the commentary are in bold.

Assay name (approval date for use)	Manufacturer	Detection technique	Viruses detected*	Target viral gene	Time to results	Limit of detection	Patient specimen needed	Reference
EZ1 Real-time RT PCR Assay (Aug 2014)	US Dept. of Defense (in house assay)	RT-qPCR	EBOV	GP	4-6 hours	5,000 PFU/ml of whole blood or plasma, 1,000 PFU/mL with live virus spiked into whole blood	Whole blood or plasma	http://www.fda.gov/downloads/ MedicalDevices/Safety/Emerge ncySituations/UCM408334.pdf
CDC Ebola Virus NP Real-time RT-PCR Assay (Oct 2014)	US CDC (in house assay)	RT-qPCR	EBOV	NP	4-6 hours	30 TCID ₅₀ /reaction	Venous whole blood, serum, and plasma. Urine tested with matched blood specimen	http://www.fda.gov/downloads/ MedicalDevices/Safety/Emerge ncySituations/UCM418810.pdf
CDC Ebola Virus VP40 Real-time RT-PCR Assay (Oct 2014)	US CDC (in house assay)	RT-qPCR	EBOV	VP40	4-6 hours	30 TCID ₅₀ /reaction	Venous whole blood, serum, and plasma. Urine tested with matched blood specimen	http://www.fda.gov/downloads/ MedicalDevices/Safety/Emerge ncySituations/UCM418815.pdf

FilmArray NGDS BT-E Assay (Oct 2014)	BioFire Defense, LLC	Multiplex, 2-step RT-PCR	EBOV	NP	75 minutes	1.00E+4 PFU/ml (4.36E+5 copies/ml) of whole blood, plasma or sera	Venous whole blood, plasma and serum	http://www.fda.gov/downloads/ EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/MCMLegalRegulatoryandPolicyFramework/UCM420419.pdf
FilmArray Biothreat-E test (Oct 2014)	BioFire Defense, LLC	Multiplex, 2-step RT-PCR	EBOV	L	75 minutes	4,059 RNA copies/reaction, 95% CI 3,272 to 5,097 copies/reaction	Venous whole blood, undiluted urine	http://www.fda.gov/downloads/ EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/MCMLegalRegulatoryandPolicyFramework/UCM420424.pdf
RealStar® Filovirus Screen RT-PCR Kit 1.0 (Nov 2014)	Altona Diagnostics GmbH	RT-qPCR	EBOV SUDV RESTV TAFV BDBV MARV	L	4-6 hours (negative), less for a positive	1 PFU EBOV or SUDV/ml plasma (1 PFU = approx. 3,400 copies)	Plasma collected in EDTA, cell free-bodily fluids, swab washes	http://www.who.int/diagnostics_laboratory/procurement/141125_evd_public_report_altona_v1.pdf?ua=1
LightMix® Ebola Zaire rRT-PCR Test (Dec 2014)	Roche Molecular Systems, Inc	RT-qPCR	EBOV	L	4-6 hours	4,781 PFU/ml	Whole blood collected in EDTA	http://www.fda.gov/downloads/ MedicalDevices/Safety/EmergencySituations/UCM428004.pdf
ReEBOV™ Antigen Rapid Test (Feb 2015)	Corgenix, Inc	Rapid chromatographic immunoassay	EBOV	VP40	15-25 minutes	2.11 E+8 RNA copies/ml (extrapolated)	Finger-prick (capillary) whole blood, venous whole blood or plasma collected in EDTA	http://www.who.int/diagnostics_laboratory/procurement/150219_reebov_antigen_rapid_test_public_report.pdf?ua=1

Xpert® Ebola Assay (May 2015)	Cepheid AB	RT-qPCR	EBOV	NP, GP	90 minutes	82.0 RNA copies/reaction, 95% CI (39.7-3,193.6 copies/reaction)	Venous whole blood collected in EDTA	http://www.who.int/medicines/ebola-treatment/150508FinalPublicReportExpertEbola_Cepheid.pdf?ua=1
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*Ebola virus (EBOV); Bundibugyo virus (BDBV); Reston virus (RESTV); Sudan virus (SUDV); Tai Forest virus (TAFV); Marburg virus (MARV).