WHO Guidelines on Hand Hygiene in Health Care

Health-care settings currently using commercially-available handrubs should continue to use them, provided that they meet recognized standards for microbicidal efficacy (ASTM or EN standards) and are well accepted/tolerated by HCWs (see also Implementation Toolkit available at http://www.who.int/gpsc/en/). It is obvious that these products should be regarded as acceptable, even if their contents differ from those of the WHO-recommended formulations described below. WHO recommends the local production of the following formulations as an alternative when suitable commercial products are either unavailable or too costly.

Formulation I

To produce final concentrations of ethanol 80% *v/v*, glycerol 1.45% *v/v*, hydrogen peroxide (H_2O_2) 0.125% *v/v*.

Pour into a 1000 ml graduated flask:

a) ethanol 96% *v/v*, 833.3 ml
b) H_2O_2 3%, 41.7 ml
c) glycerol 98% ,14.5 ml

Top up the flask to 1000 ml with distilled water or water that has been boiled and cooled; shake the flask gently to mix the content.

World Health Organization | Patient Safety
A World Alliance for Safer Health Care

Formulation II

To produce final concentrations of isopropyl alcohol 75% *v/v*, glycerol 1.45% *v/v*, hydrogen peroxide 0.125% *v/v*:

Pour into a 1000 ml graduated flask:

a) isopropyl alcohol (with a purity of 99.8%), 751.5 ml
b) H_2O_2 3%, 41.7 ml
c) glycerol 98%, 14.5 ml

Top up the flask to 1000 ml with distilled water or water that has been boiled and cooled; shake the flask gently to mix the content.

https://www.who.int/gpsc/5may/tools/who_guidelines-handhygiene_summary.pdf

The Journal of Infectious Diseases

BRIEF REPORT

Virucidal Activity of World Health Organization–Recommended Formulations Against Enveloped Viruses, Including Zika, Ebola, and Emerging Coronaviruses

Anindya Siddharta,[1,a] Stephanie Pfaender,[5,7,a] Nathalie Jane Vielle,[5,6,7] Ronald Dijkman,[5,7] Martina Friesland,[1] Britta Becker,[2] Jaewon Yang,[8] Michael Engelmann,[1] Daniel Todt,[1] Marc P. Windisch,[8] Florian H. Brill,[2] Joerg Steinmann,[3] Jochen Steinmann,[2] Stephan Becker,[4] Marco P. Alves,[5,7] Thomas Pietschmann,[1] Markus Eickmann,[4] Volker Thiel,[5,7] and Eike Steinmann[1]

The Journal of Infectious Diseases® 2017;215:902–6

DOI: 10.1093/infdis/jix046

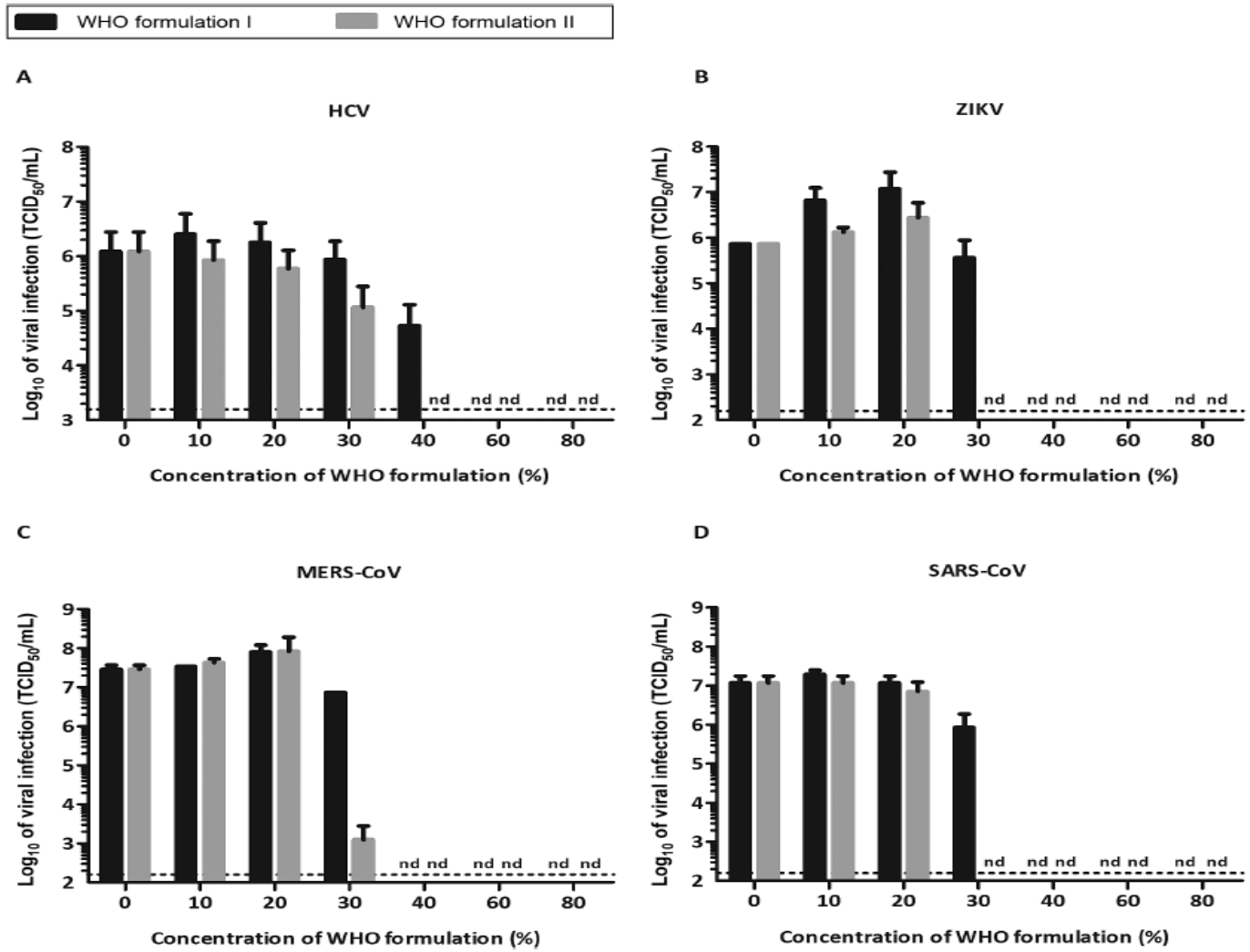

Figure 1. Virucidal activity of World Health Organization (WHO) formulations I and II against hepatitis C virus (HCV), Zika virus (ZIKV), Middle East respiratory syndrome coronavirus (MERS-CoV), and severe acute respiratory syndrome coronavirus (SARS-CoV). *A*, World Health Organization formulations I and II were tested for their efficacy in inactivating HCV. The biocide concentrations ranged from 0% to 80% with an exposure time of 30 seconds. For this inactivation assay, 1 part virus and 1 part organic load were mixed with 8 parts biocide. Residual infectivity was determined by a limiting dilution assay. Viral titers are displayed as 50% tissue culture infectious dose ($TCID_{50}$) values. The cytotoxicity was calculated in analogy to the determination of virus titer ($TCID_{50}$/mL) and is depicted as a dashed line. The means of 2 independent experiments with standard deviations are shown. Efficacy of WHO formulations I and II against ZIKV (*B*), MERS-CoV (*C*), and SARS-CoV (*D*) was addressed by a quantitative suspension assay as described for panel *A*. Abbreviation: nd, not detected.