VAH List of Disinfectants

A list of procedures for prophylactic disinfection and hygienic handwash issued by the Disinfectants Commission in the Association for Applied Hygiene (VAH) in collaboration with DGHM, DGKH, GfV, GHUP and BVÖGD, tested and deemed to be effective according to the Requirements and Methods for VAH-Certification of Chemical Disinfection Procedures

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Introduction

This List is an inventory of all procedures which had a valid certificate as of 15th September 2020. The exact validity dates can be directly requested from the manufacturer. The current status of certificates by VAH is also available online https://vah-liste.mhp-verlag.de/ .

Issuance of certificates and listing of disinfection procedures were carried out by the Disinfectants Commission in the Association for Applied Hygiene (Verbund für Angewandte Hygiene e. V. (VAH) (Prof. M. Exner, M. D., Chairman; Institute of Hygiene and Public Health, Bonn University Hospital, Venusberg-Campus 1, 53127 Bonn, Germany). The List is compiled by the Association for Applied Hygiene in collaboration with the following scientific societies and professional associations: German Society for Hygiene and Microbiology (DGHM), German Society for Hospital Hygiene (DGKH), German Society of Hygiene, German Society for Virology (GfV), Environmental and Public Health Sciences (GHUP), and the German Federal Association of Physicians in Public Health (BVÖGD). In addition the Disinfectant Commission cooperates with the Bundeswehr (German Armed Forces), the Federal Institute for Occupational Safety and Health (baua), the Federal Institute for Drugs and Medical Devices (BfArM), the German Veterinary Society (DVG), the German Association for Controlling Viral Diseases (DVV), and the Robert Koch-Institut (RKI).

The certificates were issued on the basis of two expert opinions that provided proof of the disinfectant action of the preparation in the specified concentrations and for the contact times given for the respective application. These expert opinions were reviewed by the Commission and accepted if they met the provisions of the "Requirements and Methods for VAH Certification of Chemical Disinfection Procedures" formulated by the Disinfectants Commission [1], or the transitional provisions [2] as well as pertinent communications on test requirements published in the journal "Hygiene & Medizin".

The "Requirements and Methods for VAH Certification of Chemical Disinfection Procedures" [1] were published reflecting the valid status as per 2 April 2015 and have been amended several times since then. The current requirements and transitional provisions are described in a communication by the Disinfectants Commission [2]. This approach meant that the stock of knowledge valid at that time and the methods based on European standardization endeavours in CEN TC 216 were integrated into the activities of the Disinfectants Commission and extended by the principle of efficacy limit value ascertainment.

The products are listed solely on the basis of the criteria specified above. Registration and licensing procedures, such as those stipulated by the German Medicinal Products Act (AMG), the Biocidal Product Regulation, or the German Medical Devices Act (MPG), are not assessed.

The manufacturers or distributors have issued binding statements that the preparations are marketed only in the formulations in which they were tested for acceptance in the List.

This List of Disinfectants serves as the basis for selection of appropriate disinfection procedures for routine and prophylactic disinfection to prevent infections in hospitals, medical and dental surgeries, public areas (children's daycare centres, schools, sporting establishments, etc.) and other areas in which the transmission of infections is to be prevented. By using VAH listed products, establishments meet the quality assurance requirements stipulated by German infection control regulations at state (Länder) level.

For statutorily mandated disinfection procedures in Germany, please consult the Infection Control Act (IfSG) of 20 July 2000 [3] (with amendments/updates) and the List of Disinfectants of the Robert Koch Institute (RKI) (www.rki.de) [4].

In the interest of standardisation, the VAH List takes account only of the disinfectant ingredients as declared by the manufacturer. To facilitate orientation, the products are classified according to the following active substance groups: aldehydes, aldehyde releasing agents, alcohols, alkylamines and/or alkylamine derivatives, amphoterics, compounds releasing chlorine, bromine or iodine, chloramines, glycol derivatives, guanidines or guanidine derivatives, bases, peroxide acids, peroxide compounds, phenol derivatives, phenol ethers, pyridine derivatives, quaternary compounds, inorganic acids, organic acids or heavy metal compounds. The active ingredients and the trademark symbols® are listed according to the specifications of the manufacturers and distributors. The annex to this List provides information on the spectrum of action of the active substances as well as on the nomenclature.

The manufacturers or distributors are required to declare on the label the quantity of each active ingredient.

The listing of a preparation applies only to the specified application process. Any change of the formulation of a listed product must be reported to the head office of the Disinfectants Commission. In such cases the Commission will decide whether, and to what extent, new tests are required.

The Disinfectants Commission reserves the right to undertake further tests if new developments in the testing methodology or regarding the efficacy of particular products come to light. Moreover, it reserves the right to withdraw the corresponding certificate in the event of evidence of no, or insufficient, efficacy.

When their products are accepted for certification, the manufacturers and distributors are required to state the listed disinfection values on the label, in the instructions for use, and in advertising prospectuses if they make reference to testing according to the "VAH Requirements and Methods" ("tested and found effective") or to the List. Reference may be made to the "VAH Requirements and Methods" only if the specified concentration/contact-time relationships are in agreement with the "Requirements and Methods for VAH Certification of Chemical Disinfection Procedure" or the transitional provisions [1, 2]. This reference may only be used if the stated concentration-contact-time relationships are in accordance with the currently valid "VAH Requirements and Methods" [1, 2].

Testing of the listed products refers only to the effectiveness of the disinfectant. No statements are made about other characteristics of the products, such as skin compatibility, corrosive or cleansing effects.

The disinfectant action of many preparations is impaired in the presence of organic material (e.g., blood, wound secretions, mucus). Therefore the recommendations given here for the respective applications must not be unconditionally applied to other procedures, such as mucous membranes and wound antisepsis or irrigation of body cavities.

As a general rule, freshly prepared working solutions must be used, if they are not available as 'ready-to-use products'. This rule must always be observed for disinfectants based on peroxide compounds and for chlorine releasing agents since they are not stable (follow instructions given by the manufacturer).

If chlorine-releasing solutions are produced by means of membrane cell electrolysis at the site of use, the manufacturer has to ensure that the product will correspond to the same quality which formed the basis for the two test reports and whose efficacy has been confirmed by both reviewing experts.

The concentrations specified in the List must be exactly observed. Under no circumstances should what is known as a 'shot method' be used. Nor should users add a detergent, e. g. soap or wash-active substances, to the disinfectant at their own discretion (soap effects).

All products published in the VAH List are bactericidal and, hence, also effective against methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococci (VRE), or multiresistant Gram-negative rods. Although the underlying resistance mechanisms do have an impact on the efficacy of antibiotics, they do not influence the activity of disinfectants which are used in microbicidal concentrations [5]. Consequently, VAH-certified concentration/contact time ratios are effective when used as prescribed. In certain situations (e.g. in the event of the cumulated incidence of infections by specific pathogens) the Disinfectants Commission will conduct tests with these bacteria as test organisms in order to ensure that the concentration/contact time ratios listed are also effective in these instances.

Handwash and Disinfection Procedures

The List is divided into the following sections on the basis of the requirements of the users:

– Hygienic Handwash

Disinfection procedures:

– Hand disinfection
– Skin antisepsis
– Surface disinfection
– Instrument disinfection
– Textile disinfection

Detailed information on the test criteria for the individual procedures is given in the respective section.

Listing Antiviral Properties in the VAH List of Disinfectants

The Disinfectants Commission has received numerous questions over the last years concerning the application of suitable disinfection procedures in the event of viral infections. On a national and European level great efforts have been made in order to advance and standardize methods for evaluating disinfectants by means of quantitative suspension tests as well as with tests simulating practical conditions. As a result, test requirements will be extended and modified in the upcoming years.

With *listing* antiviral properties in the present VAH List, the user will be provided with the necessary information to make a choice for a suitable disinfectant which has proven efficacy for limited spectrum, limited spectrum plus Adeno-, Noro-, and Rotavirus and/or full virucidal activity according to what is known today.

If the listing of antiviral properties was requested by the manufacturer, the pertaining test protocols and test reports of the products were assessed by independent experts. The conformity assessment procedure mainly followed the bylaws of the DVV Disinfectants Commission, item 4a. Listing antiviral properties required the submission of at least one test protocol/expert report according to the current DVV/RKI guidelines of 2005, 2008, 2015 or EN 14476 for the quantitative suspension test or, for surface disinfectants, additionally according to the DVV guideline 2012 or EN 16777, or, for instrument disinfectants, according to EN 17111 for the simulated-use test [6, 7, 8, 9, 10, 11, 12]. If new test methods are established and integrated in the conformity assessment procedure, this is included in the information on the test methodology for the pertinent field of application (Chapter on Test Methods in this List).

Currently, antiviral activity is divided into activity against enveloped viruses, limited spectrum virucidal activity, and virucidal activity. Virucidal activity comprises the spectrum of both enveloped and non-enveloped viruses.

The test organisms and test methods are included in the Statement by the Working Group "Virucidal Activity" at Robert Koch Institute [13] and listed in the respective fields of application.

In the VAH List of Disinfectant, the concentration-contact time ratios for activity against viruses are listed in a separate row for the respective product.

Independent of the concentration-contact ratio for activity against viruses stated in the experts reports, the values listed for bactericidal activity must be considered as minimum requirement for practical use. Therefore, the antiviral activity values stated in the VAH List are never lower than the ones for bactericidal activity.

Table 1, listing selected relevant viruses and/or viral diseases, provides the user with information on the viruses which are covered by the efficacy tests performed with the corresponding test viruses.

References

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ten (DVV) e.V. und der Gesellschaft für Virologie (GfV) e.V. sowie der Desinfektionsmittelkommission des Verbundes für Angewandte Hygiene (VAH) e.V. Prüfung und Deklaration der Wirksamkeit von Desinfektionsmitteln gegen Viren zur Anwendung im human-medizinischen Bereich. Bundesgesundheitsbl 2017;60:353–363.

Note:

Some communications by VAH are available in English online

https://vah-online.de/en/expertise

Translated from:

Desinfektionsmittel-Kommission im VAH (Hrsg.). Desinfektionsmittel-Liste des VAH. Stand 15.9.2020. Wiesbaden: mhp Verlag, 2020.

Table 1: Test viruses for efficacy testing of disinfectants and selected viruses covered by these test viruses.

	Test Viruses	Activity Spectrum (Examples) [1, 2]
Virucidal: Enveloped and non-enveloped viruses	Adenovirus, *non-enveloped* (Adenovirus Typ 5, strain Adenoid 75) Murine Norovirus, *non-enveloped* (MNV, strain S99 Berlin) Poliovirus, *non-enveloped* (Poliovirus Typ 1, strain LSc-2ab) Polyomavirus SV40, *non-enveloped* (Simianvirus 40, strain 777)	**Papillomaviridae** **Parvoviruses** – Parvovirus B19 – Bocavirus **Picornaviridae** – Enteroviruses: Coxsackie, Echo, Polioviruses, Rhinoviruses (Human rhinovirus) – Hepatovirus: Hepatitis A virus (HAV) [3] – Parechoviruses: Echovirus 22 and 23 **plus activity against Adenovirus, Norovirus Rotavirus and enveloped viruses (limited spectrum virucidal activity)**
Limited spectrum virucidal activity	Adenovirus, *non-enveloped* (Adenovirus Type 5, strain Adenoid 75) Murine Norovirus, *non-enveloped* (MNV, strain S99 Berlin)	**Causative organisms of viral gastrointestinal infections** – Adenovirus serotypes 40 and 41 – Norovirus – Rotavirus **Causative organism of respiratory infections** – Adenovirus serotype 7 **Causative organisms of keratoconjunctivitis** – Adenovirus serotypes 8, 19 and 37 **plus activity spectrum against enveloped viruses**
Virucidal activity against enveloped viruses	BVDV*, *enveloped* (Bovine Viral Diarrhea Virus) *surrogate virus for Hepatitis C Virus Vacciniavirus, *enveloped* (strain Elstree and/or MVA)	**Causative organism of blood-borne infections** – Hepatitis B virus (HBV) – Hepatitis C virus (HCV) – Human Immunodeficiency Virus (HIV) **Causative organisms of respiratory infections** – Human coronavirus (HCoV) 229E and OC43 – Influenza virus A (e.g. H1N1, H3N2) and B – Metapneumonievirus – Respiratory Syncytial Virus (RSV) **Causative organisms of travel-associated infections** – Bunyavirus (Sandfly Fever) – Dengue virus, Ebola virus, Yellow fever virus, Hantaanvirus, Lassa virus, Marburg virus – FSME virus – Krim Kongo haemorrhagic viral fever – Rabies virus – SARS-CoV, MERS-CoV – West Nile virus (West-Nile-Fever) **Herpesviridae** – Cytomegalievirus (CVM) – Herpes-simplex-viruses type 1 and 2 (HSV-1, HSV-2) – Epstein-Barr virus (EBV) – Varizella-Zoster-Virus (VZV) **Paramyxoviruses** – Measles virus – Mumps virus **Rubella virus**
Chemical-thermal Textile Disinfetion	Minute Virus of Mice, *non-enveloped* (MVM, Murines Parvovirus)	**Please refer to virucidal activity**

Restrictions:

1. This classification is simply an orientation; the efficacy cannot be estimated with absolute certainty because it is dependend on the active ingredient.
2. Currently the studies on antiviral activity are largely based on quantitative suspension tests, which is why only limited conclusions can be drawn with respect to efficacy on surfaces.
3. There is also a possible restriction of virucidal activity against HAV and parvovirus as explained in the guideline [8].