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**Evaluation of the
effectiveness of**

CHEMISEPT G

against

**Bovine Viral Diarrhea Virus
(Surrogate of Hepatitis C Virus)**

Test method according to guideline of BGA and DVV

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tests were also performed with the interfering substances and with MicroSpin™ S-400 HR columns.

5.5 Elimination of cytotoxicity

Since the cytotoxicity did not allow following the reduction of residual infectivity titre over the range of four \log_{10} steps, ready to use MicroSpin™ S-400 HR columns (Amersham Biosciences Europe GmbH, D-79021 Freiburg, Germany) were used according to the instructions of the manufacturer with addition of a 0.5 % BSA solution before loading.

5.6 Calculation of the virucidal activity

The virucidal activity of the test disinfectant was evaluated by calculating the decrease in titre in comparison with the control titration without disinfectant. The difference is given as reduction factor (RF).

6. Results

In parallel with the inactivation tests, the cytotoxicity of the hand disinfectant CHEMISEPT G (80.0%) and 0.7% formaldehyde was measured. The formaldehyde solution was toxic for the KOP-R cells in the 1:1000 dilutions. This corresponds to a $\log_{10}CD_{50}/mL$ of 4.50 (Table 1). Examinations also showed that without treatment the hand disinfectant CHEMISEPT G (80.0%) had a $\log_{10}CD_{50}/mL$ of 2.50 (cytotoxicity in the 1:10 dilution), where-as no cytotoxic effect after treatment with the columns was measured resulting in a $\log_{10}CD_{50}/mL$ of ≤ 1.50 (Table 1).

These tests to measure cytotoxicity are imperative, because in this way the lower detection threshold for non-inactivated BVDV is determined.

Virus titres without treatment with MicroSpin™ S-400 HR columns were 5.50 (assay without protein load), 5.88 (assay with BSA) and 5.75 $\log_{10}TCID_{50}/mL$ (assay with FCS) (data not shown in table).

Results of inactivation tests are found in table 2. Formaldehyde (0.7%) reduced the BVDV titre after 5 minutes by $\geq 0.25 \log_{10}$ steps. After 15, 30 and 60 minutes reduction factors were ≥ 1.25 (Table 2).

The hand disinfectant CHEMISEPT G was examined undiluted. Due to the addition of virus suspension and interfering substances a test concentration of 80.0% resulted. Exposure times were 30, 60 and 120 seconds.

Testing CHEMISEPT G undiluted, an efficacy was measured after an exposure time of 30 s (Table 2). At this time, no BVDV was detectable any longer. The reduction factors were ≥ 4.25 (assay without soil load), ≥ 4.25 (assay with BSA) and ≥ 4.38 (assay with FCS). This corresponds in all cases to an inactivation of $\geq 99.99\%$. According to the guideline of BGA/DVV, a disinfectant or a disinfectant solution at a particular concentration is having virus-inactivating efficacy if within the recommended exposure period the titre is reduced at least by four \log_{10} steps.

Due to the lack of virological guidelines simulating practical conditions in Europe (phase 2, step 2 tests) the data of this quantitative suspension test lead to the recommendation to use the hand disinfectant CHEMISEPT G for inactivation of BVDV (surrogate of hepatitis C virus) as follows:

undiluted

30 s



Dr. J. Steinmann