Research & Development Healthcare
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Expert's statement on the compatibility of Incidin basic wipes with the hard surface disinfectant Incidin Pro

Summary

Incidin basic wipes were impregnated with Incidin Pro 0.5% use solution in the designated Incidin wipe dispenser. After storage at ambient conditions over 4 weeks the efficacy of the wipes was tested in a test simulating conditions of practice (4-field-test) in comparison to freshly impregnated wipes. The efficacy of the wipes after storage up to 4 weeks was equivalent to freshly impregnated wipes and met the pass criteria of the test.

We therefore recommend the following concentration and contact time for Incidin basic wipes impregnated with at least 2.2 l Incidin Pro use solution in the dedicated dispenser to achieve bactericidal and yeasticidal hard surface disinfection in the healthcare area under clean and dirty conditions, while the impregnated wipes may be stored at ambient conditions for up to 4 weeks:

- 0.5% Incidin Pro 30 min
- 1.0% Incidin Pro, 15 min

As in any surface disinfection process it is crucial that the entire surface is fully wetted with the disinfectant solution during the wiping procedure.

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Background

Ready to use wipes are a convenient way for disinfection of frequent touch surfaces in healthcare settings. However, it has been documented in the literature that prolonged contact of disinfectant use solutions with wipes may lead to adsorption of active ingredients to the wipe material[1)]. This may lead to decreased disinfectant efficacy, when using such wipes. Aim of this study was therefore to provide data on the efficacy of Incidin basic wipes impregnated with Incidin Pro under conditions of practice and prove compatibility of the wipes with this particular disinfectant.

Materials and methods

Incidin basic wipes were impregnated with 2.2 l of a freshly prepared 0.5% Incidin Pro use dilution. This concentration was chosen, because it is the lowest recommended use concentration of this disinfectant for surface disinfection according to certification by the German Society of Applied Hygiene (VAH). The impregnated wipes were stored at ambient conditions. These stored samples were tested for efficacy after 4 weeks. As a control the same wipes freshly impregnated with a freshly prepared use solution of the same concentration were tested.

A European standard test for disinfectant wipes simulating conditions of practice is not available. There fore a previously published method was used[2)]. In brief a marked area on a PVC surface was contaminated with the test organism in organic soil. Three more areas at a defined distance were marked and were kept primarily sterile. The entire surface was then wiped with the disinfectant and after the contact time of 1 h the test organism was recovered from the primarily contaminated and primarily sterile marked areas by swabbing. Microbial reduction of the test organism on the primarily contaminated area was calculated versus an untreated control as log reduction. The average microbial count of the three primarily sterile areas was calculated as the accumulation of test organisms on these surfaces. Appropriate controls were run to prove neutralisation of disinfectant residues upon recovery of surviving test organisms. *Staphylococcus aureus* was chosen as a test organism according to the published method. *Candida albicans* was chosen as a second test organism, because this is the most resistant test organism from the bactericidal/yeasticidal test spectrum according to available efficacy expertises for Incidin Pro[3)4)]. All tests were run under simulated dirty conditions according to the published method as a worst case.

Tests were performed at Henkel AG & Co. KgaA Microbiology and are documented in this laboratory under reference 13-19306.

Results

In the following table the log-reduction of the test organism on contaminated areas and the total count of test organism on the primarily sterile areas is given.

Incidin basic wipes impregnated with Incidin Pro 0.5% after 4 weeks storage		Incidin basic wipes freshly impregnated with Incidin Pro 0.5%	
Staphylococcus aureus			
Log reduction on primarily contaminated area	>6.o5	Log reduction on primarily contaminated area	>6.05
Accumulation of test organism on primarily sterile areas	<5 cfu	Accumulation of test organism on primarily sterile areas	<5 cfu
Candida albicans			
Log reduction on primarily contaminated area	>5.5	Log reduction on primarily contaminated area	>5.5
Accumulation of test organism on primarily sterile areas	<5 cfu	Accumulation of test organism on primarily sterile areas	<5 cfu

Discussion

A log reduction of $\geq$5 is defined by the published method for the test organism *Staphylococcus aureus* on the primarily contaminated surface area. An accumulation of $\leq$10 cfu is defined as an additional pass criterion. Incidin Basic wipes impregnated with 0.5% Incidin Pro fulfilled both pass criteria

However, goal of this study was to demonstrate equivalence of aged wipes to freshly impregnated wipes. No significant differences between freshly impregnated and stored wipes was demonstrated

Conclusion

The use of Incidin basic wipes impregnated with at least 2.2 l of a 0.5% Incidin Pro use solution in the designated Incidin wipe dispenser is regarded appropriate to achieve surface disinfection with bactericidal and yeasticidal efficacy spectrum at a contact time of 30 min, when the wipes are stored at ambient conditions for up to 4 weeks.

Since higher use concentrations will increase the margin of safety with regard to potential adsorption of active ingredients to the wipe, this conclusion can also be regarded valid for higher concentrations and shorter contact times according to the VAH certificate of Incidin Pro.

We therefore recommend the following concentration and contact time for Incidin basic wipes impregnated with at least 2.2 l Incidin Pro use solution in the dedicated dispenser to achieve bactericidal and yeasticidal hard surface disinfection in the healthcare area under clean and dirty conditions, while the impregnated wipes may be stored at ambient conditions for up to 4 weeks:

- 0.5% Incidin Pro, 30 min
- 1.0% Incidin Pro, 15 min

The amount of use dilution used on a surface has been demonstrated to have an influence on the efficacy of disinfectants in practice[5)]. As in any surface disinfection process it is therefore of outmost importance that the entire surface is fully wetted with the disinfectant solution during the wiping procedure, when using Incidin basic wipes.

Monheim, January 10th 2014

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References

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