हाफकिन प्रशिक्षण, संशोधन व चाचणी संस्था

महाराष्ट्र शासन अनुदानित सोसायटीज् रजिस्ट्रेशन ॲक्ट १८६० अधिनियमान्वये नोंदणी कृत स्वायत्त संस्था
भारत सरकार, विज्ञान व प्रौद्योगिक मंत्रालय, मान्यताप्राप्त "वैज्ञानिक आणि औद्योगिक संशोधन संस्था"

Haffkine Institute for Training, Research & Testing

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19 SEP 2013

HI / BY-R / 8657

Report on *In vitro* anti-microbial efficacy testing of one electrolytically generated disinfectant solution sample -"Sterisol", submitted by M/s. Faith Innovations, New Delhi–110 024 , vide their letter dated 22 March, 2013.

Sample : Sample labelled as: **"Sterisol"** – Electrolytically generated Disinfectant Solution. Colour: Colourless. Batch No.: SGS / 13-14 / 001, date: 01.07.2013.

Test procedure : The 5-ml aliquots of undiluted and 1 : 4 diluted disinfectant solution **"Sterisol"** (dilution was done in sterile distilled water), were placed in sterile test tubes. 0.1 ml of each bacterial culture suspension containing approximately 10^6 cells (In case of Bacillus cereus, spores suspension were used), was suspended individually in these tubes, mixed thoroughly, and kept at room temperature. After different intervals of time, a loopful of suspension from each tube was inoculated in individual tubes containing approximately 8 ml sterile nutrient broth. These tubes were incubated at 37 ^{0}C. After 48 hours, the tubes were checked for growth or inhibition, if any.

This procedure was applied for the fungal species viz. Candida albicans (ATCC 10231) & Aspergillus niger (by using its conidial suspension i.e. 0.1 ml (having 10^6 conidia) by using Sabouraud's broth as the nutrient medium and nutrient medium tubes were incubated at 28 ^{0}C temperature for 72 hours.

Results:

Sr. No.	Test Organism	Dilution of Disinfectant "Sterisol"	Viability of the organisms by the disinfectant **"Sterisol"** after the killing / inhibition contact time of (contact time in minutes)		
			5	7	10
1.	*Shigella flexneri* (Clincal isolate)	Undiluted	N	N	N *
		1 : 4	N	N	N
2.	*Klebsiella pneumonae* (clinical isolate)	Undiluted	N	N	N
		1 : 4	N	N	N

Contd. on pg. 2..

HI / BY-R / 8057

9 SEP 2013

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Sr. No.	Test Organism	Dilution of Disinfectant "Sterisol"	Viability of the organisms by the disinfectant **"Sterisol"** after the killing / inhibition contact time (contact time in minutes) 5	7	10
3.	*Staphylococcus aureus* (NCTC 3750)	Undiluted	N	N	N
		1 : 4	N	N	N
4.	*Methicillin resistant staphylococcus aureus [MRSA]* (ATCC 25923)	Undiluted	N	N	N
		1 : 4	N	N	N
5.	*Spores of Bacillus cereus* (ATCC 11778)	Undiluted	N	N	N
		1 : 4	N	N	N
6.	*Pseudomonas aeruginosa* (Fisher's Immunotype IV)	Undiluted	N	N	N
		1 : 4	N	N	N
7.	*Clostridium perfringens* (ATCC 13124)	Undiluted	N	N	N
		1 : 4	N	N	N
8.	*Candida albicans* (ATCC 10231)	Undiluted	N	N	N
		1 : 4	N	N	N
9.	*Aspergillus niger* (ATCC 16404)	Undiluted	N	N	N
		1 : 4	N	N	N

Contd. on pg. 3.

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भारत सरकार, विज्ञान व प्रौद्योगिक मंत्रालय, मान्यताप्राप्त "वैज्ञानिक आणि औद्योगिक संशोधन संस्था"

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9 SEP 2013

* 'N'= not viable, i.e. the bacterial / fungal species was killed / inhibited.

Results: The electrolytically generated Disinfectant solution **"Sterisol"** in **undiluted** and as well as in **1 : 4 diluted forms kills / inhibits** the test organisms *Shigella flexneri* (Clincal isolate), *Klebsiella pneumonae* (Clinical isolate), *Staphylococcus aureus* (NCTC 3750), *Methicillin resistant staphylococcus aureus [MRSA]* (ATCC 25923), *Spores of Bacillus cereus* (ATCC 11778), *Pseudomonas aeruginosa* (Fisher's Immunotype IV), *Clostridium perfringens* (ATCC 13124), *Candida albicans* (ATCC 10231) and *Aspergillus niger* (ATCC 16404) after the killing / inhibition contact time of 5 (five) minutes.

N.B.: This report is issued with an explicit understanding that it would neither be used for the purpose of advertisement nor it would be produced as an evidence in any form without the prior permission of the undersigned. Further, this report is restricted to the sample submitted to the department only.

Dr. Abhay Chowdhary
Director.

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9 SEP 2013

1.

HI /BY-R / 8457

Report on *in vitro* anti-mycobacterium (against Mycobacterium tuberculosis) activity of one Electrolytically generated Disinfectant solution sample-"Sterisol", New Delhi – 110 024, vide their dated 22nd March, 2013.

Sample : Sample labelled as: **"Sterisol"** – Electrolytically generated Disinfectant Solution. Colour: Colourless. Batch No.: SGS / 13-14 / 001, date: 01.07.2013.

organism used: Mycobacterium tuberculosis $H37R_v$.

Culture suspension was prepared by picking up the growth (colonies)of Mycobacterium tuberculosis from previously inoculated on Lowenstein-Jenson (L.J.) medium with inoculating loop of 3 mm diameter (in sterile test tube already having 8 sterile glass beads and normal saline of about 10 ml. quantity, then it was shaken on vortex mixture for 35 minutes. (cell density approximately was 1.0×10^6 per ml).

Test procedure : Initially, the 5-ml aliquots of **undiluted** and as well as in **1 : 4 diluted form** solution of **"Sterisol"**, was placed in sterile test tube. 0.1 ml of each bacterial culture suspension containing approximately 10^6 cells, was suspended in this tube, mixed thoroughly,and kept at room temperature. After different intervals of time (Killing / inacivation contact time), a loopful of suspension from the tube was inoculated in individual tubes containing 8 ml. sterile Dubos and Youman's broth and as well as separately on tube containing sterile L. J.medium slope. These tubes were incubated at 37 0C for four weeks with intermittent checking for growth or inhibition.

Results :-

Sr. No.	Test Organism	Dilution of Disinfectant "Sterisol	Viability of the organisms by the disinfectant **"Sterisol"** after the killing / inhibition contact time (contact time in minutes) 5	7	10
1.	*Mycobacteruim tuberculosis* (H37Rv)	Undiluted	N	N	N
		1 : 4	N	N	N

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HI / BY-R / 8057

9 SEP 2013

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* 'N' = not viable, i.e. the bacterial species was killed / inhibited.

Remarks: The electrolytically generated Disinfectant solution **"Sterisol"** in **undiluted** and as well as in **1 : 4 diluted forms kills / inhibits** the test organism Mycobacterium tuberculosis ($H37R_v$) after a killing / inactvation contact time of 5 (Five) minutes.

N.B.: This report is issued with an explicit understanding that it would neither be used for the purpose of advertisement nor it would be produced as an evidence in any form without the prior permission of the undersigned. Further, this report is restricted to the sample (of the batch No. as mentioned above) submitted to the department only.

Dr. Abhay Chowdhary
Director.