

**Table SI:** Reduction in protein recovered from the internal components of 10 contra angle dental handpieces (DHPs) under two different sets of dirty conditions following washer-disinfection relative to inoculated DHPs not subjected to washer-disinfection

Conditions <sup>b</sup>	Challenge microorganisms	DHP site <sup>c</sup>	Percentage reduction in protein <sup>a</sup> (+/- standard deviation)										Overall average
			DHP1	DHP2	DHP3	DHP4	DHP5	DHP6	DHP7	DHP8	DHP9	DHP10	
Dirty (3% BSA)	<i>Staphylococcus aureus</i> ATCC 6538	Head	98.1 (1.5)	97.3 (2.3)	97.8 (2.3)	98.1 (1.8)	98.2 (1.4)	98.2 (1.6)	98.3 (1.2)	98.5 (1.1)	98.1 (1.7)	97.3 (3.9)	<b>97.6 (1.9)</b>
		Channels	95.1 (1.1)	94.6 (1.4)	94.8 (1.4)	95.2 (1.8)	95.9 (0.3)	94.6 (0.9)	95.1 (1.2)	95.1 (1.9)	94.1 (2.8)	94.5 (2.1)	<b>94.9 (1.4)</b>
	<i>Enterococcus hirae</i> ATCC 10542	Head	99.3 (0.3)	98.8 (0.6)	99.2 (0.2)	99.1 (0.6)	99.3 (0.5)	99.5 (0.2)	99.7 (0.3)	99.6 (0.3)	98.6 (0.8)	99.3 (0.4)	<b>99.2 (0.1)</b>
		Channels	92.6 (2.6)	93.5 (0.8)	92.9 (1.6)	92.5 (1.0)	95.1 (6.3)	93.6 (1.2)	94.6 (1.0)	92.7 (2.1)	95.5 (5.3)	93.1 (2.7)	<b>93.6 (2.4)</b>
	<i>Pseudomonas aeruginosa</i> ATCC 15442	Head	98.7 (0.4)	98.5 (0.6)	98.1 (1.1)	98.6 (0.6)	98.7 (0.3)	98.2 (0.5)	98.4 (0.7)	98.1 (0.9)	98.7 (1.2)	98.8 (1.1)	<b>98.5 (0.3)</b>
		Channels	98.4 (1.0)	98.9 (0.6)	98.6 (0.7)	98.8 (0.5)	98.5 (0.6)	98.3 (0.9)	98.7 (0.4)	98.8 (0.6)	98.4 (0.8)	98.8 (0.3)	<b>98.6 (0.6)</b>
	<i>Candida albicans</i> ATCC MYA-2876	Head	98.9 (0.7)	98.3 (0.3)	98.9 (0.5)	98.9 (0.3)	98.7 (0.1)	98.1 (0.4)	98.4 (0.3)	98.9 (0.5)	99.1 (0.6)	99.2 (0.5)	<b>98.8 (0.2)</b>
		Channels	96.9 (0.2)	95.9 (0.5)	96.5 (0.2)	96.2 (0.3)	96.2 (0.4)	96.3 (0.5)	96.1 (0.7)	95.9 (1.2)	96.4 (0.4)	96.5 (0.5)	<b>96.3 (0.3)</b>
Dirty (10% Test soil)	<i>Staphylococcus aureus</i> ATCC 6538	Head	98.7 (0.5)	98.3 (0.7)	98.7 (0.5)	98.7 (0.8)	98.5 (0.2)	98.6 (0.8)	98.5 (0.2)	98.7 (0.3)	98.4 (0.8)	98.5 (0.5)	<b>98.6 (0.5)</b>
		Channels	92.8 (0.4)	92.5 (1.4)	92.7 (2.0)	92.8 (1.9)	92.8 (2.6)	92.9 (2.1)	93.1 (1.6)	92.5 (2.3)	92.5 (2.3)	92.6 (1.9)	<b>92.7 (1.8)</b>
	<i>Enterococcus hirae</i> ATCC 10542	Head	99.6 (0.3)	99.2 (0.4)	99.3 (0.1)	99.5 (0.3)	99.1 (0.2)	98.9 (0.6)	99.6 (0.2)	99.6 (0.3)	99.3 (0.4)	99.4 (0.2)	<b>99.4 (0.3)</b>
		Channels	92.3 (2.7)	92.5 (3.9)	92.8 (3.8)	94.7 (1.9)	93.2 (2.4)	93.3 (4.1)	94.1 (2.2)	93.6 (3.2)	92.3 (4.6)	92.4 (4.3)	<b>93.1 (3.1)</b>
	<i>Pseudomonas aeruginosa</i> ATCC 15442	Head	97.6 (0.9)	98.5 (0.8)	98.1 (1.6)	97.8 (2.3)	97.9 (1.9)	97.7 (1.2)	98.2 (1.7)	97.9 (1.8)	98.1 (1.5)	97.4 (1.2)	<b>97.9 (1.4)</b>
		Channels	93.3 (4.7)	95.1 (4.2)	93.9 (6.3)	95.5 (3.7)	95.2 (4.5)	94.1 (6.2)	94.3 (6.2)	94.4 (6.2)	93.5 (4.9)	92.5 (4.9)	<b>94.2 (5.1)</b>
	<i>Candida albicans</i> ATCC MYA-2876	Head	99.4 (0.2)	99.4 (0.2)	99.6 (0.4)	99.1 (0.3)	99.6 (0.3)	99.5 (0.3)	99.2 (0.2)	99.5 (0.3)	99.2 (0.2)	99.5 (0.2)	<b>99.4 (0.1)</b>
		Channels	95.1 (3.1)	92.5 (5.9)	93.1 (5.9)	93.4 (4.8)	92.9 (5.6)	92.8 (6.1)	92.8 (5.6)	92.9 (5.2)	93.1 (5.8)	93.2 (5.8)	<b>93.2 (5.4)</b>
Dirty (10% Test soil)	No challenge microorganisms	Head	97.9 (1.5)	97.6 (1.4)	93.9 (6.3)	96.8 (3.6)	98.6 (0.9)	96.2 (5.5)	98.4 (1.6)	97.9 (1.7)	96.4 (3.0)	95.9 (5.0)	<b>96.9 (2.7)</b>
		Channels	95.3 (5.5)	95.2 (6.0)	95.2 (5.7)	94.9 (6.4)	94.6 (6.4)	95.3 (5.3)	94.9 (5.9)	94.9 (6.2)	95.1 (5.9)	95.1 (5.8)	<b>95.1 (5.9)</b>

Each challenge microorganism was inoculated separately into the head and air and water channels of 11 DHPs. Ten of these DHPs were processed by washer-disinfection. For each washer-disinfector cycle, one inoculated DHP was left untreated as a control. Following washer-disinfection, all 11 DHPs were tested for recovery of protein as described in the Methods and the percentage reduction in protein calculated relative to the untreated control inoculated DHP in each case. The results shown are the average of three separate experiments for each DHP under each set of conditions.

<sup>a</sup>Mean average result from three separate experiments.

<sup>b</sup>The artificial test soil (Edinburgh test soil, Cúram Medical, Dublin, Ireland) used was compliant with ISO-15883-5-2021.

<sup>c</sup>Protein levels shown for channels represent the average recovery data from both air and water channels for each DHP tested under each set of conditions. Protein recovered from heads includes protein recovered from the DHP head, press button plate, head gear and middle gear of each DHP under each set of conditions (see Figure 1). Abbreviations: BSA, bovine serum albumin; DHP, dental handpiece.

Reference: International Organization for Standardization (ISO). BS EN ISO 15883-5. 2021. Washer-disinfectors — Part 5: Performance requirements and test method criteria for demonstrating cleaning efficacy. London: British Standards Institute.