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Test Report

*Determination of antiviral activity of textile products
against SARS-CoV-2*

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Test description

In this report, antiviral samples were tested for the ability to inactivated SARS-CoV-2, according to **ISO 18184:2019**. Textile samples (20 mm x 20 mm) were inoculated with 200 µL of a SARS-CoV-2 stock suspension at 10⁶ PFU/mL (corresponding to 200 000 plaque-forming units) for several contact times (30 min and 1 hour) at room temperature. After the contact period, deposited viruses were washed and the number of PFUs were determined by plaque assay.

Test conditions

Virus:	SARS-CoV-2, isolate 606 from Portuguese clinical samples processed at iMM
Host cells:	Vero cells, ATCC CCL-81
Textile sample:	Untreated fabric (100% cotton) and MOxAd-Tech social masks (polyester containing elastane AD-001, 10xW60°C and 50xW60°C)
Sample size:	20 mm x 20 mm
Washing solution:	TSB with 0.07% lecithin and 0.5% Tween
Contact time:	30 min and 1 hour
Contact temperature:	Room temperature (approx. 22C)



Test result summary

No cytotoxicity was observed, media was sterile and cells remained viable in all tests.

All the control tests required in ISO 18184:2019 met the criteria for a valid test.

Table 1 – Test results

Number of PFU (plaque-forming units) recovered at each contacting time and corresponding percentages (%) of reduction. Values represent the average of at least three replicates of each fabric. The limit of detection was calculated as 400 PFU.

Sample		Input PFU	0 min	30 min		1 h	
			PFU	PFU	Reduction (%)	PFU	Reduction (%)
Untreated fabric		200 000	126 666	116 000	8,4	60 000	52,6
Treated fabric	AD-001			<400	>99,7	<400	>99,7
	10xW60°C			<400	>99,7	933	99,3
	50xW60°C			57 333	54,7	1 267	99,0

Conclusions

According to the results in Table 1, **AD-001 sample (treated fabric without washes) showed to be effective against SARS-CoV-2 with more than 99,7 % of reduction after 30 min exposure.** Untreated fabric exhibited a weak effect (only 8,4 % of reduction) against SARS-CoV-2 at the same exposure time. Washing of fabric at 60°C had no effect on virus inactivation after 10 washes and even after 50 washes this fabric showed more than 50 % of viral reduction.

References

ISO 18184:2019: Textiles — Determination of antiviral activity of textile products.

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