## **Supporting information**

## Long-term Antibacterial Protected Cotton Fabric Coating by Controlled Release of Chlorhexidine Gluconate from Halloysite Nanotubes

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Fig. S1 Structural formula of chlorhexidine gluconate.



Fig. S2 Photographs of inhibition zone test of HNTs/CG after one week release against S. aureus,

E. coli and P. aeruginosa.



Fig. S3 SEM of raw cotton (a) and the HNTs/CG coated cotton after washing 20 times (b), respectively. Scale bar:  $20 \ \mu m$ .



**Fig. S4** Fluorescent microscopic images of bacterial species *E. coli* treated with raw cotton (a) and HNTs/CG-coated cotton (b), the red colour represent the dead cells and the green colour represent the live cells. Scale bar: 200 μm.



**Fig. S5** SEM mophoogy of *E.coli* treated with raw cotton (a) and HNTs/CG-coated cotton (b), respectively. Scale bar: 2 μm.

Number	Response of skin		Scores			
	stimulation		1h	24h	48h	72h
1 (male)	sample	Erythema	0	0	0	0
		Edema	0	0	0	0
	control	Erythema	0	0	0	0
		Edema	0	0	0	0
	sample	Erythema	0	0	0	0
2 (female)		Edema	0	0	0	0
	control	Erythema	0	0	0	0
		Edema	0	0	0	0
3 (female)	sample	Erythema	0	0	0	0
		Edema	0	0	0	0
	control	Erythema	0	0	0	0
		Edema	0	0	0	0

Table S1 Skin stimulation test of HNTs/CG composite.