

Cobalt Bis-Dicarbollide Enhances Antibiotics Action towards *Staphylococcus epidermidis* Planktonic Growth due to Cell Envelopes Disruption

Eva Vaňková ^{1,*}, Kristýna Lokočová ¹, Petra Kašparová ¹, Romana Hadravová ², Ivana Křížová ¹, Olga Maťátková ¹, Jan Masák ¹ and Václav Šícha ³

¹ Department of Biotechnology, University of Chemistry and Technology Prague, Technická 5, 166 28 Prague, Czech Republic; kristynalokocova@gmail.com (K.L.); petra.kasparova@vscht.cz (P.K.); ivana.krizova@vscht.cz (I.K.); olga.matatkova@vscht.cz (O.M.); jan.masak@vscht.cz (J.M.)

² Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences, Flemingovo náměstí 542/2, 166 10 Prague, Czech Republic; romana.hadravova@uochb.cas.cz

³ Chemistry Department, Faculty of Science, Jan Evangelista Purkyně University in Ústí nad Labem, Pasteurova 15, 40096 Ústí nad Labem, Czech Republic; vaclav.sicha@ujep.cz

* Correspondence: eva.vankova@vscht.cz

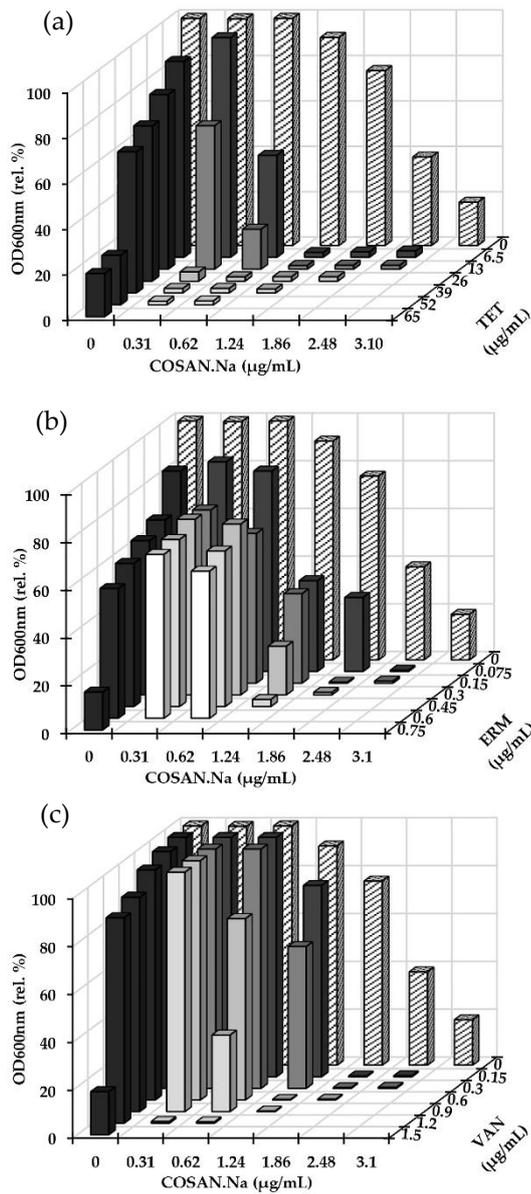


Figure S1. Inhibitory activity of tetracycline (TET), erythromycin (ERM), vancomycin (VAN) and sodium salt of cobalt bis-dicarbollide (COSAN.Na) alone or in their combination against *S. epidermidis* DBM 3179 planktonic growth. **(a)** TET + COSAN.Na; **(b)** ERM + COSAN.Na; **(c)** VAN + COSAN.Na. Results of optical density (OD) measured at 600 nm are given in relative percentages. Standard deviations ranged from (\pm) 1 to 15 %.

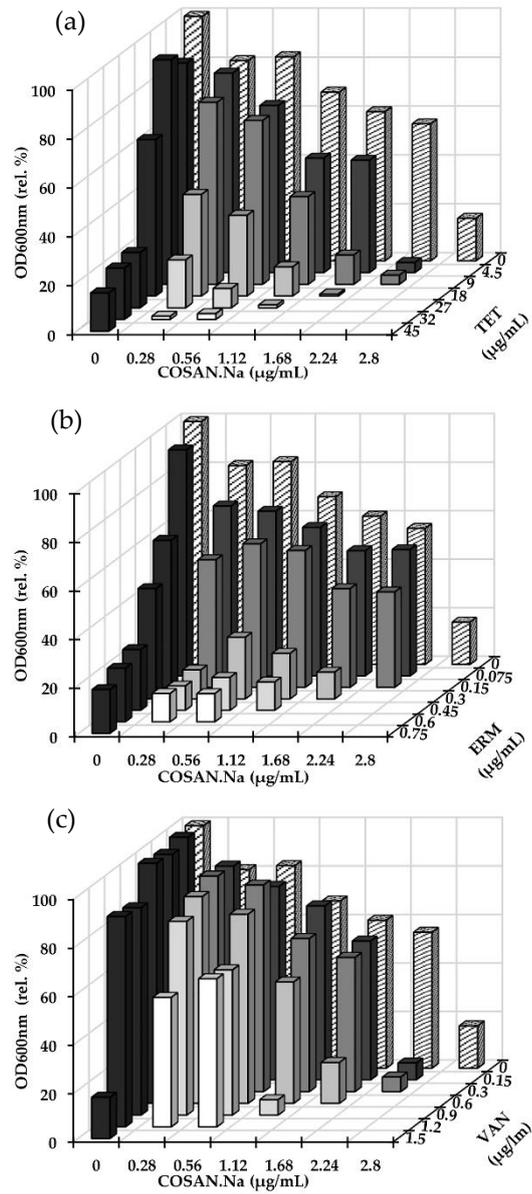


Figure S2. Inhibitory activity of tetracycline (TET), erythromycin (ERM), vancomycin (VAN) and sodium salt of cobalt bis-dicarbollide (COSAN.Na) alone or in their combination against *S. epidermidis* CNCTC 5671 planktonic growth. **(a)** TET + COSAN.Na; **(b)** ERM + COSAN.Na; **(c)** VAN + COSAN.Na. Results of optical density (OD) measured at 600 nm are given in relative percentages. Standard deviations ranged from (\pm) 1 to 15 %.

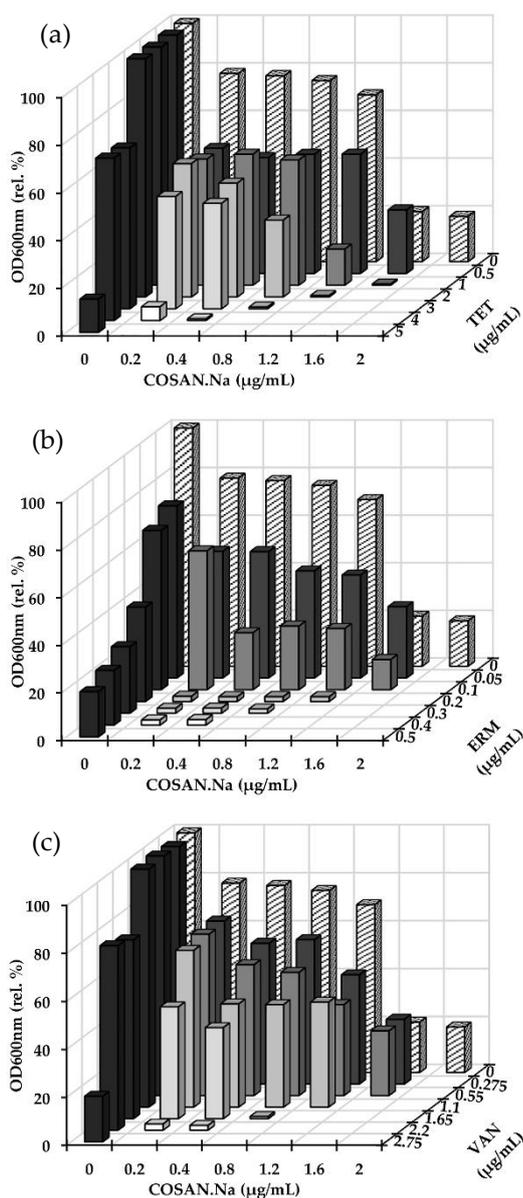


Figure S3. Inhibitory activity of tetracycline (TET), erythromycin (ERM), vancomycin (VAN) and sodium salt of cobalt bis-dicarbollide (COSAN.Na) alone or in their combination against *S. epidermidis* CCM 2343 planktonic growth. **(a)** TET + COSAN.Na; **(b)** ERM + COSAN.Na; **(c)** VAN + COSAN.Na. Results of optical density (OD) measured at 600 nm are given in relative percentages. Standard deviations ranged from (\pm) 1 to 15 %.

Table S1 Cytotoxicity of tetracycline (TET), erythromycin (ERM), vancomycin (VAN), sodium salt of cobalt bis-dicarbollide (COSAN.Na) and their combination against HEK 293T cells.

HEK 293T viability (rel. %)					
TET	TET	ERM	ERM	VAN	VAN
4.5 $\mu\text{g/mL}$	45 $\mu\text{g/mL}$	0.3 $\mu\text{g/mL}$	0.75 $\mu\text{g/mL}$	0.15 $\mu\text{g/mL}$	2 $\mu\text{g/mL}$
98.63	97.84	96.39	98.39	99.81	97.86
COSAN.Na	COSAN.Na	COSAN.Na	TET 4.5 $\mu\text{g/mL}$	ERM 0.3 $\mu\text{g/mL}$	VAN 0.15 $\mu\text{g/mL}$
1.68 $\mu\text{g/mL}$	2.24 $\mu\text{g/mL}$	2.8 $\mu\text{g/mL}$	+ COSAN.Na	+ COSAN.Na	+ COSAN.Na
			2.24 $\mu\text{g/mL}$	1.68 $\mu\text{g/mL}$	2.24 $\mu\text{g/mL}$
98.77	98.00	99.09	95.58	97.85	97.26

