



The New Coronaviruses

Prevention Manual and Eco-Friendly Cleaner Introduction



CONTENTS

- 1 What is the new coronavirus
- 2 Condition symptoms
- 3 Susceptible people
- 4 How to prevent
- 5 Using Eco-friendly Biotic Cleaners

Part 01

What is the new coronavirus





New Coronavirus Outbreak Report

2019-nCoV is a new type of coronavirus that mainly causes infection of the respiratory system. On January 20th, the National Health and Health Commission included pneumonia infected with the new coronavirus as a Class B infectious disease and managed it as a Class A; at the same time, it included the quarantine infectious disease stipulated in the "People's Republic of China's Frontier Health and Quarantine Law".



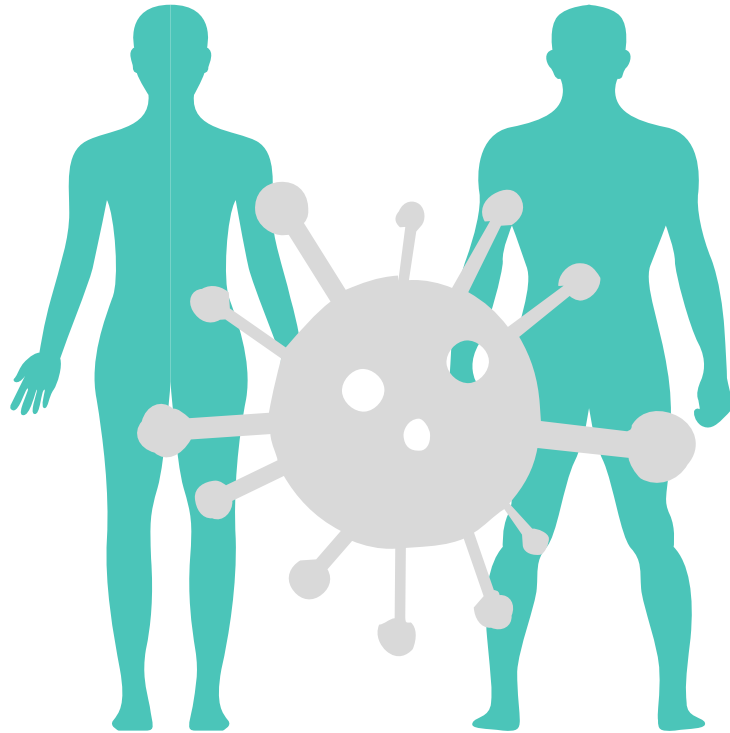
Part 02

Condition symptoms





Condition symptoms



—
Main symptoms: fever (≥ 37.3 °C), fatigue, dry cough

—
Severe symptoms: respiratory distress, sepsis, metabolic acidosis, coagulopathy



In addition to the above symptoms, there may be "atypical" symptoms, such as:

- (1) Only the first manifestations of digestive symptoms: such as mild appetite, fatigue, poor mentality, nausea and vomiting, diarrhea, etc
- (2) First manifestation with neurological symptoms: such as headache;
- (3) First manifestations of cardiovascular system symptoms: such as palpitation, chest tightness, etc .;
- (4) First manifestation with ophthalmic symptoms: such as conjunctivitis;
- (5) Only mild sore limbs or lower back muscles.



Part 03

Susceptible people





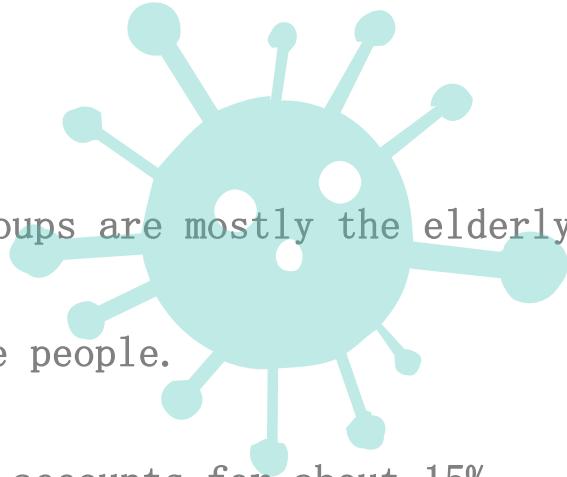
Susceptible people



Patients are concentrated in the age range of 40 to 60 years, and there are young children.

♥ The high-risk groups are mostly the elderly, those with underlying diseases, and obese people.

♥ Critical illness accounts for about 15%.



Part 04

How to prevent





How to prevent infection with a new coronavirus

- (1) Social distancing
- (2) Avoid crowded areas
- (3) Frequently wash or sanitise hands, including the thumb and wrist area
- (4) Avoid touching the face
- (5) Wear a mask in public spaces or in places close to people.



Part 05



Using Eco friendly Biotic Cleaners



Our Supplier, BioTechnic was founded in 1995 and created a range of environmentally friendly products, fully accredited, that would challenge the way people think about cleaning and disinfection in general. NMG Africa would like to offer this innovative products to our customers as well.

The Eco Friendly Cleaner is a biological multipurpose disinfectant which digests urine, fats, greases and contaminated surface grime quickly. It continues to do so long after application as opposed to conventional cleaning solutions.





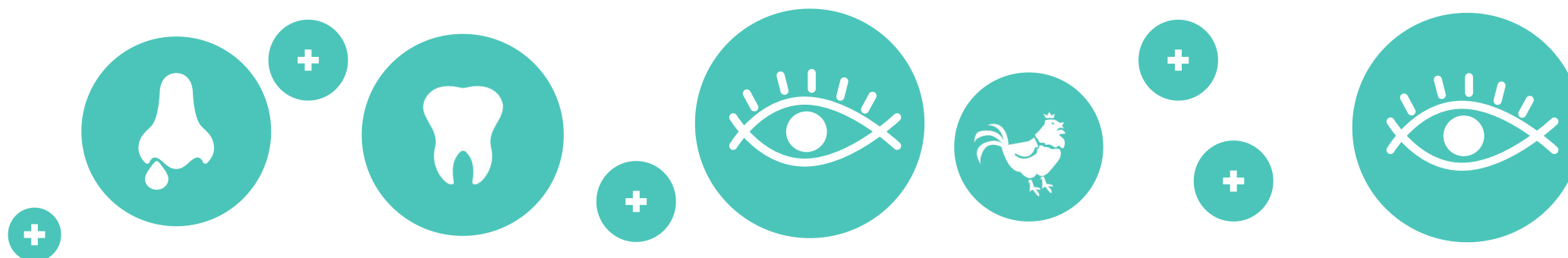
Our Ecofriendly Cleaning Product

Is it possible that a probiotic cleaning product can eradicate the Covid 19 virus and or other bacteria on hands and or hard surfaces that are frequently touched?

In short the answer is **yes.**

In as far as bacteria is concerned and for viruses such as Covid 19 the hypothesis is that it can cause membrane distruption , which is the same effect as with caustic soda in soaps and hypochlorite that are quite toxic in the environment (30–140 ug/1 LD50s vs Daphnia).

You can argue that hypochlorite are released into the environment in a very dilute form after use in the household, but long term, if we can reduce the use of such materials, it is good for the environment and for society

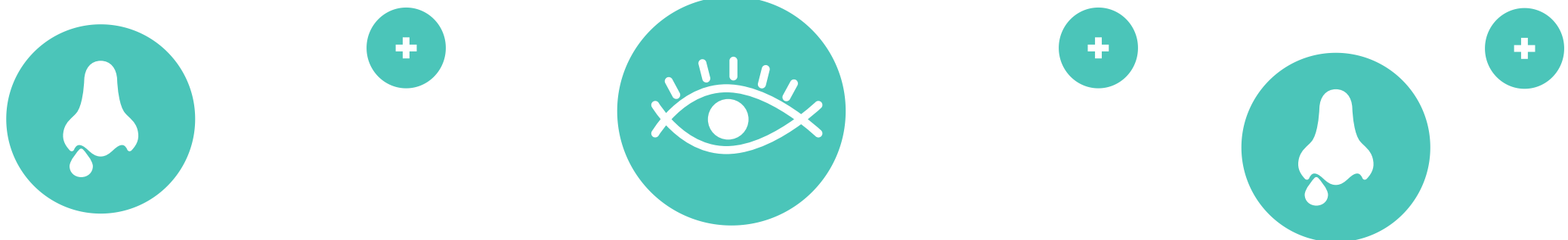




Mode of action: Enzymes



- The product works by releasing Bacillus spores, which can operate as mini enzyme factories, delivering these types of dissolving enzymes directly to the soiling source and without the issues of sensitisation by inhalation
- Bacillus will continue to work until all the available food has been used up, producing enzymes, and will then revert to the spore form and sit in the matrix until more food comes along.
- Thus Bacillus based formulae can give long term cleanliness and activity between product applications which no chemical can deliver





Mode of action: Enzymes

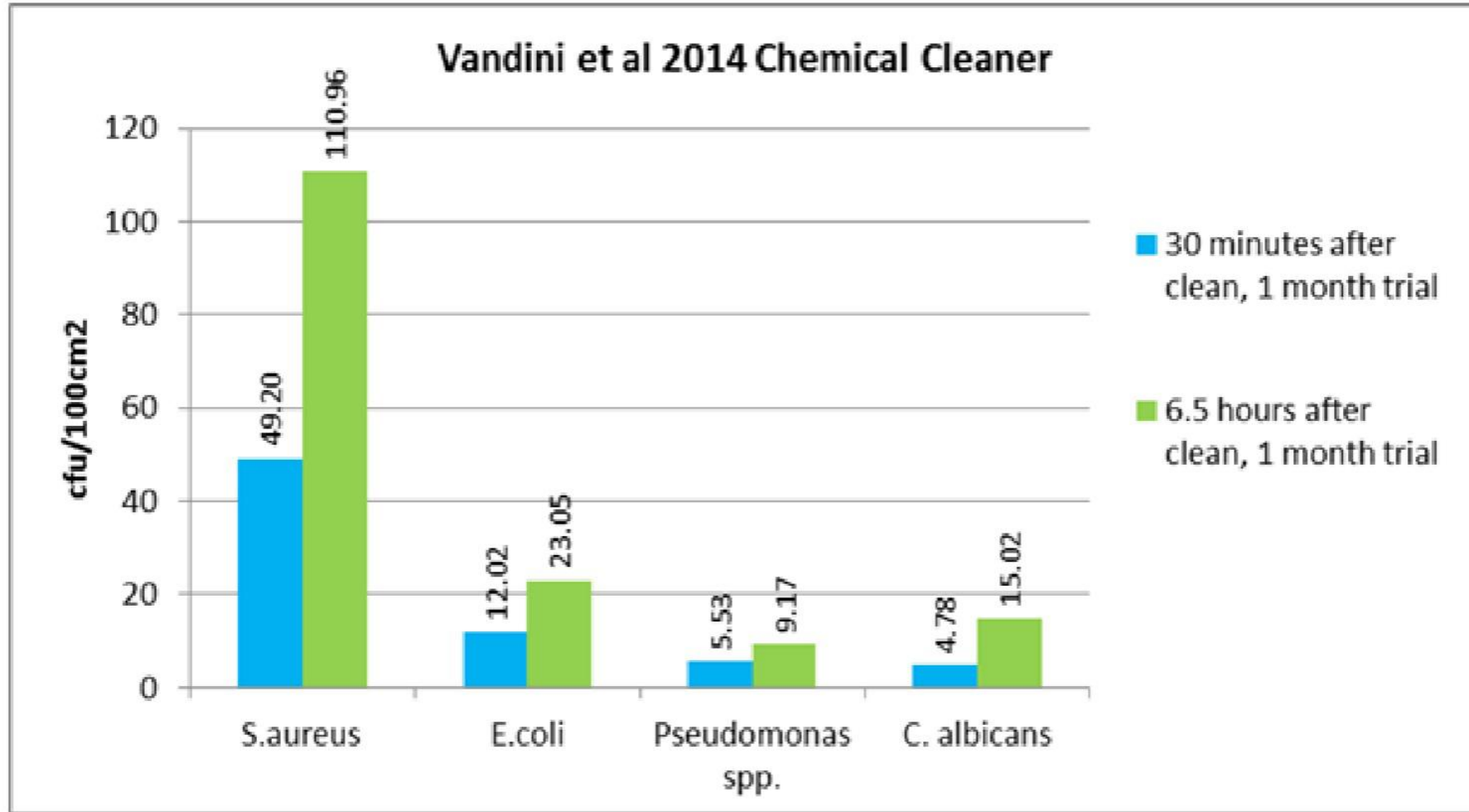


- We know that Bacillus strains are some of the most active in terms of producing extracellular metabolites that influence the growth of other organisms
- These go by a wide range of exotic names like butirosin, lichenicidin, macrolactin, bacillaene which have all been extensively characterised as broad spectrum anti- bacterials
- Other materials such as fengycin may be a vector in the broad range anti-fungal properties we see across a range of species (black and pink bathroom moulds??)
- We also know that Bacillus stains can produce surfactin, one of the most potent emulsifying agents ever identified
- This has a function of emulsifying non aqueous substrates like fats, oils and grease converting them to the ideal form for biodegradation
- Targeted surfactin production in situ by Bacillus spores reduce the need for chemical surfactants within a formula
- Concentrated surfactin may also have significant membrane disruption effects and may be a further mechanism for anti- microbial and anti- viral effects .



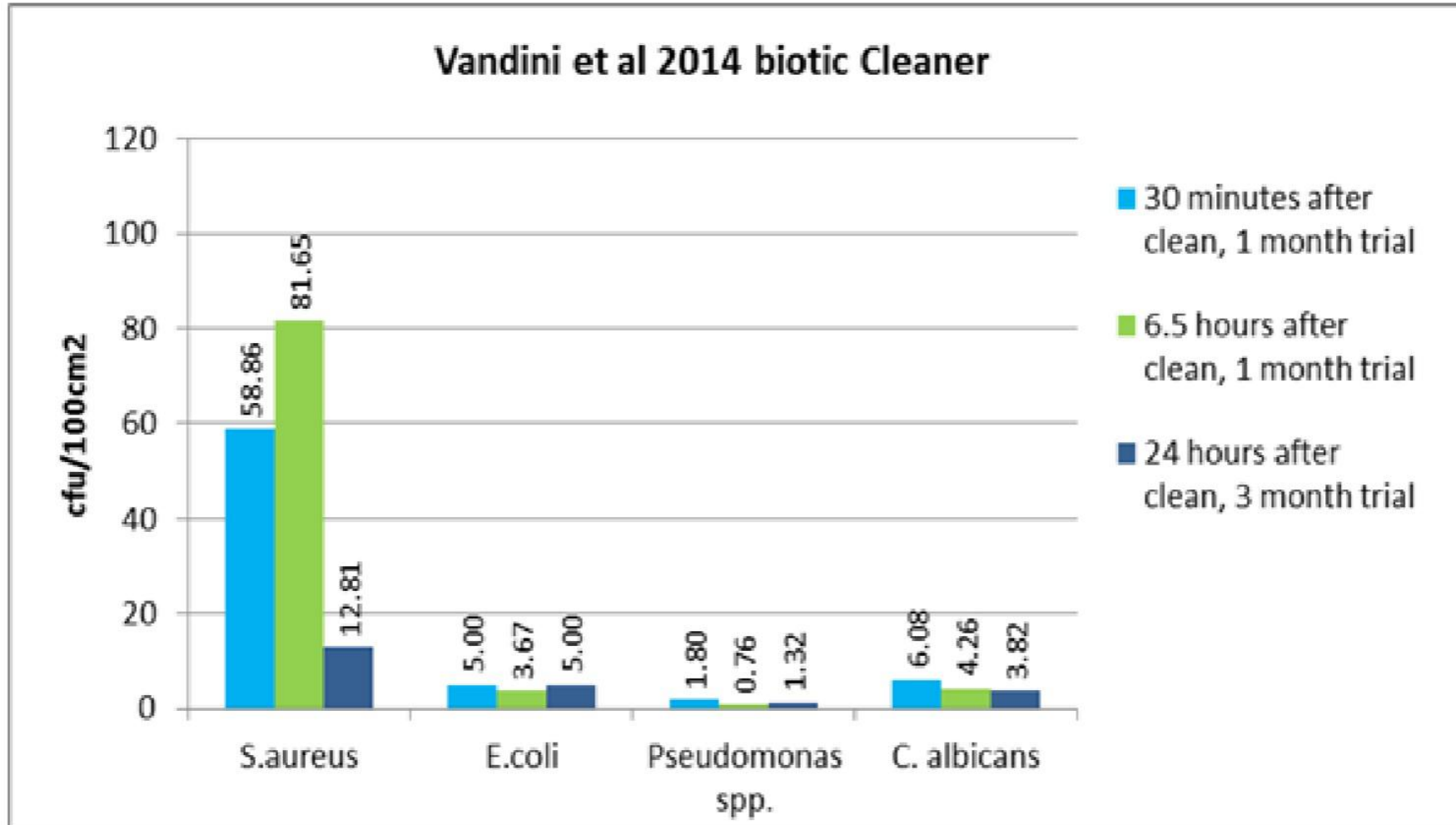


Comparison of Chemical Cleaner Vs Biocleaner (a)





Comparison of Chemical Cleaner Vs Biocleaner (b)





Some references showing efficacy of biotic cleaning.

- One of the most recently published conclusions from an 18 month trial (2016–17) at six Italian hospitals is that: “Probiotic Cleaning Hygiene System”, when replacing chlorine sanitisation, was associated with a significant decrease of HAI cumulative incidence from a global 4.8% (284 patients with HAI out of 5,930 total patients) to 2.3% (128 patients with HAI out of 5,531 total patients) ($P < 0.0001$).
- Ref: Vandini et al (2014): Reduction of the Microbiological Load on Hospital Surfaces Through Probiotic Based Cleaning Procedures: A New Strategy to Control Nosocomial Infections. Journal of Microbiology & Experimentation. Volume 1 Issue 5, <http://medcraveonline.com/JMEN/JMEN-0100027.pdf>
- Caselli et al (2018) Reducing healthcare-associated infections incidence by a probiotic based sanitation system: A multicentre, prospective, intervention study. PLoS ONE 13(7): e0199616. <https://doi.org/10.1371/journal.pone.0199616>





Research showing efficacy against Influenza viruses which are more complex than Corona viruses.



ANTIVIRAL AGENTS



Anti-influenza Activity of a *Bacillus subtilis* Probiotic Strain

Darya Starosila,^a Svetlana Rybalko,^a Ludmila Varbanetz,^b Naila Ivanskaya,^a Iryna Sorokulova^c

Gromashevsky Institute of Epidemiology and Infectious Diseases, National Academy of Medical Sciences of Ukraine, Kiev, Ukraine^a; Institute of Microbiology and Virology, National Academy of Sciences, Kiev, Ukraine^b; Department of Anatomy, Physiology and Pharmacology, Auburn University, Auburn, Alabama, USA^c

ABSTRACT Among *Bacillus* bacteria, *B. subtilis* is the species that produces the most antimicrobial compounds. In this study, we analyzed the activity of probiotic strain *B. subtilis* 3 against the influenza virus. The antiviral effect of this strain has been demonstrated *in vitro* and *in vivo*. A new peptide, P18, produced by the probiotic strain was isolated, purified, chemically synthesized, and characterized. Cytotoxicity studies demonstrated no toxic effect of P18 on Madin-Darby canine kidney (MDCK) cells, even at the highest concentration tested (100 $\mu\text{g}/\text{ml}$). Complete inhibition of the influenza virus *in vitro* was observed at concentrations of 12.5 to 100 $\mu\text{g}/\text{ml}$. The protective effect of P18 in mice was comparable to that of oseltamivir phosphate (Tamiflu). Further study will assess the potential of peptide P18 as an antiviral compound and as a promising candidate for the development of new antiviral vaccines.

KEYWORDS *Bacillus subtilis*, antiviral peptide, influenza virus, probiotics

Received 13 March 2017 **Returned for modification** 28 March 2017 **Accepted** 10 April 2017

Accepted manuscript posted online 17 April 2017

Citation Starosila D, Rybalko S, Varbanetz L, Ivanskaya N, Sorokulova I. 2017. Anti-influenza activity of a *Bacillus subtilis* probiotic strain. *Antimicrob Agents Chemother* 61:e00539-17. <https://doi.org/10.1128/AAC.00539-17>.

Copyright © 2017 American Society for Microbiology. All Rights Reserved.

Address correspondence to Iryna Sorokulova, sorokib@auburn.edu.





We hope this presentation was
helpfull. Keep Safe!

Contact : Whatsapp
+27 (0) 82 0433495
email: info@nmgafrica.com
OR
greenworld@nmgafrica.com
NMG Africa
Postnet box #88
Private Bag X3
Glosderry
7702

