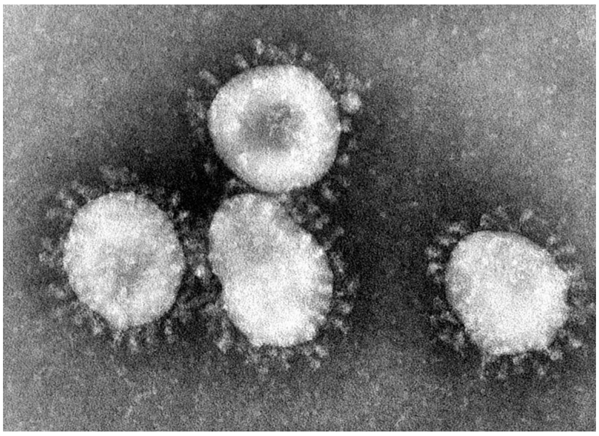
Chlorine Dioxide against Coronavirus: a revolutionary, simple and effective approach

March 2020 DOI: 10.13140/RG.2.2.23856.71680 *Project: Toxicity study of chlorine dioxide in solution (CDS) ingested orally* *Andreas Ludwig Kalcker co. : Liechtensteiner Verein für Wissenschaft und Gesundheit LI-9491 Ruggel www.lvwg.org E-mail alk@lvwg.org*

Chlorine dioxide (ClO2) has been used for over 100 years to combat all types of bacteria, viruses and fungi successfully. It acts as a disinfectant, since in its mode of action it turns out to be an oxidant. *[1# BiologicalEfficacyList]* It is very similar to the way our own body acts, for example in phagocytosis, where an oxidation process is used to eliminate all kinds of pathogens. Chlorine dioxide (ClO2) is a yellowish gas that, to date, has not been introduced into the conventional pharmacopoeia as an active ingredient, although it is used on a mandatory basis to disinfect and preserve blood bags for transfusions. *[2# Alcide studies on blood disinfection]* It is also used in most bottled waters suitable for consumption, since it does not leave toxic residues; besides, it is a gas that is very soluble in water and evaporates from 11 ºC.



The recent Covid-19 coronavirus pandemic demands urgent solutions with new approaches. Therefore, chlorine dioxide (ClO2) in low-dose aqueous solution promises to be an ideal, rapid and effective solution. All too often, the solution is in the simplest of ways. The approach is as follows: on the one hand we know that viruses are absolutely sensitive to oxidation and on the other hand, if it works in human blood bags against viruses such as HIV and other pathogens, why would it not work organically against the coronavirus?

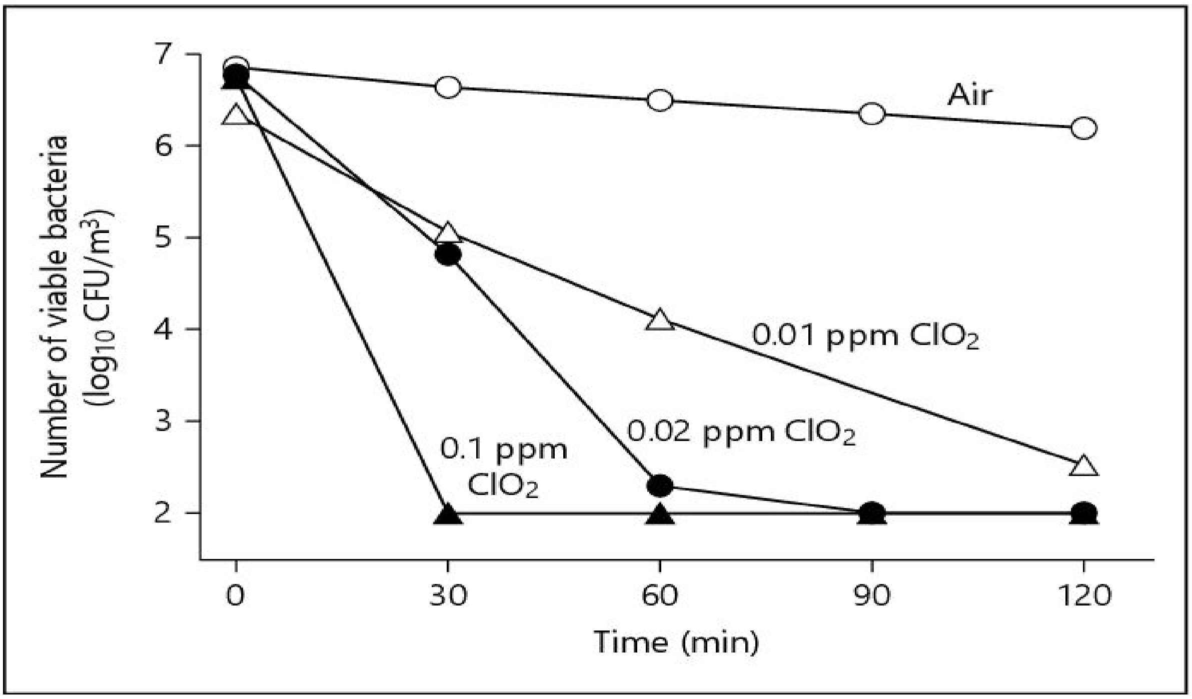
1. Chlorine dioxide removes viruses through the process of selective oxidation in a very short time. It does this by denaturing the capsid proteins, and then oxidizes the genetic material of the virus, disabling it.

The application of chlorine dioxide (ClO2) orally or even parenterally is a different approach that has been studied by Andreas Ludwig Kalcker for more than thirteen years with a result of three pharmaceutical patents for parenteral use.It can be produced by any pharmacy as an extemporaneous preparation and has been used in a similar form as (DAC N-055) in the old German Drug Codex as "Sodium Chlorosum" since 1990.

So far, only vaccine based solutions have been proposed, resulting in extremely slow and risky processes, as they always require sufficient energy reserves that a body affected with the disease cannot provide. The great advantage of chlorine dioxide (ClO2) is that it works for any viral subspecies and there is no possible resistance to this type of oxidation (let's not forget that this substance has been used for 100 years in waste water without generating any resistance). *[#3 Investigation on virucidal activity of chlorine dioxide]* 2. There is already scientific evidence that chlorine dioxide is effective on coronavirus SARS-CoV-2, a base virus of COVID-19 *[SARS Fact Sheet, National Agricultural Biosecurity Center, Kansas State University]* and the Coronavirus family in general - *[Chlorine Dioxide, Part 1 A Versatile, High-Value Sterilant for the Biopharmaceutical Industry, Barry Wintner, Anthony Contino, Gary O'Neill. BioProcess International DECEMBER 2005.]* It has also been shown to be effective in human coronavirus *[#4 BASF Aseptrol document]* and in animals such as dogs, known as canine respiratory coronavirus, or cats, including the feline enteric coronavirus (FECV) and the better known feline infectious peritonitis virus (FIPV), since it denatures the capsules by oxidation inactivating the virus in a short time *[2-log 4.2 / 4-log 25.1 Source USEPA 2003 WHO Guidelines for drinking water Quality]*.

Pharmacology. 2016;97(5-6):301-6. doi: 10.1159/000444503. Epub 2016 Mar 1.

Inactivation of Airborne Bacteria and Viruses Using Extremely Low Concentrations of Chlorine Dioxide Gas.



It should be noted that chlorine dioxide for ingestion is a new antiviral approach because it is an oxidant and manages to eliminate any subspecies or variations of viruses by combustion.*[6#ClO2 is a size selective biocide]* Given the emergency situation in which we currently find ourselves with Covid-19, the oral use of ClO2 is considered immediately through a protocol already known and used.

3. Toxicity: The biggest problems with drugs in general are due to their toxicity and side effects.New studies show its feasibility.*[7#New Clo2 safety evaluation 2017]* Although the toxicity of chlorine dioxide is known for mass inhalation, there is not a single clinically proven death even at high doses from oral ingestion.*[8#Controlled Clinical Evaluations of Clo2 in Man]* The LD50 is considered to be 292 mg per kilogram for 14 days, where its equivalent

in a 50 kg adult would be 15,000 mg per two weeks of a gas dissolved in water (something almost impossible). .*[9# toxicity of clo2 and clorite ions]* The sub toxic oral doses used are around 50 mg dissolved in 100 ml of water 10 times a day which is equivalent to 0.5 g per day. (and therefore only 1/30 of the above LD50 dose of 15 g ClO2 per day).

Chlorine dioxide dissociates, it decomposes in the human body in a few hours into an insignificant amount of common salt (NaCL) and oxygen(O2) within the human body. Measurements of venous blood gas have indicated that the affected patient's lung oxygenation capacity is substantially improved.

Ejemplo con Voluntaria y aplicación I.V. de 500 ml con 50 ppm de concentración

Patiënt-ID: ANNA
Datum en tijd: 31/12/16 13:56:22

Resultaten: Gassen+

pH	7,271		Laag
pCO2	64,6	mmHg	Hoog
pO2	34,0	mmHg	Laag
cHCO3-	29,7	mmol/L	Hoog
BE(ecf)	2,8	mmol/L	
cSO2	55,2	%	Laag

Resultaten: Chem+

Na+	143	mmol/L	
K+	3,8	mmol/L	
Ca++	1,33	mmol/L	
Cl-	102	mmol/L	
cTCO2	31,7	mmol/L	Hoog
Hct	38	%	
cHgb	8,0	mmol/L	
BE(b)	1,3	mmol/L	

Resultaten: Meta+

Glu	88	mg/dL	
Lac	3,59	mmol/L	Hoog
Crea	91	umol/L	

Referentiebereiken

pH	7,350 - 7,450	
pCO2	35,0 - 48,0	mmHg
pO2	83,0 - 108,0	mmHg
cHCO3-	21,0 - 28,0	mmol/L
cSO2	94,0 - 98,0	%
cTCO2	22,0 - 29,0	mmol/L
Lac	0,56 - 1,39	mmol/L

Type monster: Veneus
Hemodilutie: Nee
Leeftijd: 32 jaar
Geslacht: Vrouw

Patiënt-ID: ANNA
Datum en tijd: 31/12/16 15:58:39

Resultaten: Gassen+

pH	7,420		
pCO2	39,9	mmHg	
pO2	57,8	mmHg	Laag
cHCO3-	25,8	mmol/L	
BE(ecf)	1,4	mmol/L	
cSO2	90,1	%	Laag

Resultaten: Chem+

Na+	141	mmol/L	
K+	4,1	mmol/L	
Ca++	1,24	mmol/L	
Cl-	105	mmol/L	
cTCO2	27,1	mmol/L	
Hct	35	%	Laag
cHgb	7,3	mmol/L	Laag
BE(b)	1,3	mmol/L	

Resultaten: Meta+

Glu	90	mg/dL	
Lac	0,74	mmol/L	
Crea	108	umol/L	Hoog

Referentiebereiken

pO2	83,0 - 108,0	mmHg
cSO2	94,0 - 98,0	%
Hct	38 - 51	%
cHgb	7,4 - 10,6	mmol/L
Crea	45 - 105	umol/L

Type monster: Veneus
Hemodilutie: Nee
Leeftijd: 32 jaar
Geslacht: Vrouw

Ejemplo con Voluntario y aplicación I.V. de 500 ml con 50 ppm de concentración

epoc BGEM bloedtest

Patiënt-ID: Andrea
Datum en tijd: 15/07/17 00:09:51

Resultaten: Gassen+

pH	7,329		Laag
pCO2	56,7	mmHg	Hoog
pO2	35,6	mmHg	Laag
cHCO3-	29,8	mmol/L	Hoog
BE(ecf)	3,9	mmol/L	Hoog
cSO2	62,5	%	Laag

Resultaten: Chem+

Na+	141	mmol/L	
K+	3,6	mmol/L	
Ca++	1,20	mmol/L	
Cl-	102	mmol/L	
cTCO2	31,6	mmol/L	Hoog
Hct	45	%	
cHgb	9,5	mmol/L	
BE(b)	2,3	mmol/L	

Resultaten: Meta+

Glu	88	mg/dL	
Lac	2,49	mmol/L	Hoog
Crea	151	umol/L	Hoog

Referentiebereiken

pH	7,350 - 7,450	
pCO2	35,0 - 48,0	mmHg
pO2	83,0 - 108,0	mmHg
cHCO3-	21,0 - 28,0	mmol/L
BE(ecf)	-2,0 - 3,0	mmol/L
cSO2	94,0 - 98,0	%
cTCO2	22,0 - 29,0	mmol/L
Lac	0,56 - 1,39	mmol/L
Crea	45 - 105	umol/L

epoc BGEM bloedtest

Patiënt-ID: Andr.2
Datum en tijd: 15/07/17 01:16:59

Resultaten: Gassen+

pH	7,404		
pCO2	42,0	mmHg	
pO2	40,0	mmHg	Laag
cHCO3-	26,3	mmol/L	
BE(ecf)	1,6	mmol/L	
cSO2	75,0	%	Laag

Resultaten: Chem+

Na+	143	mmol/L	
K+	3,4	mmol/L	Laag
Ca++	1,13	mmol/L	Laag
Cl-	107	mmol/L	
cTCO2	27,6	mmol/L	
Hct	38	%	
cHgb	8,0	mmol/L	
BE(b)	1,3	mmol/L	

Resultaten: Meta+

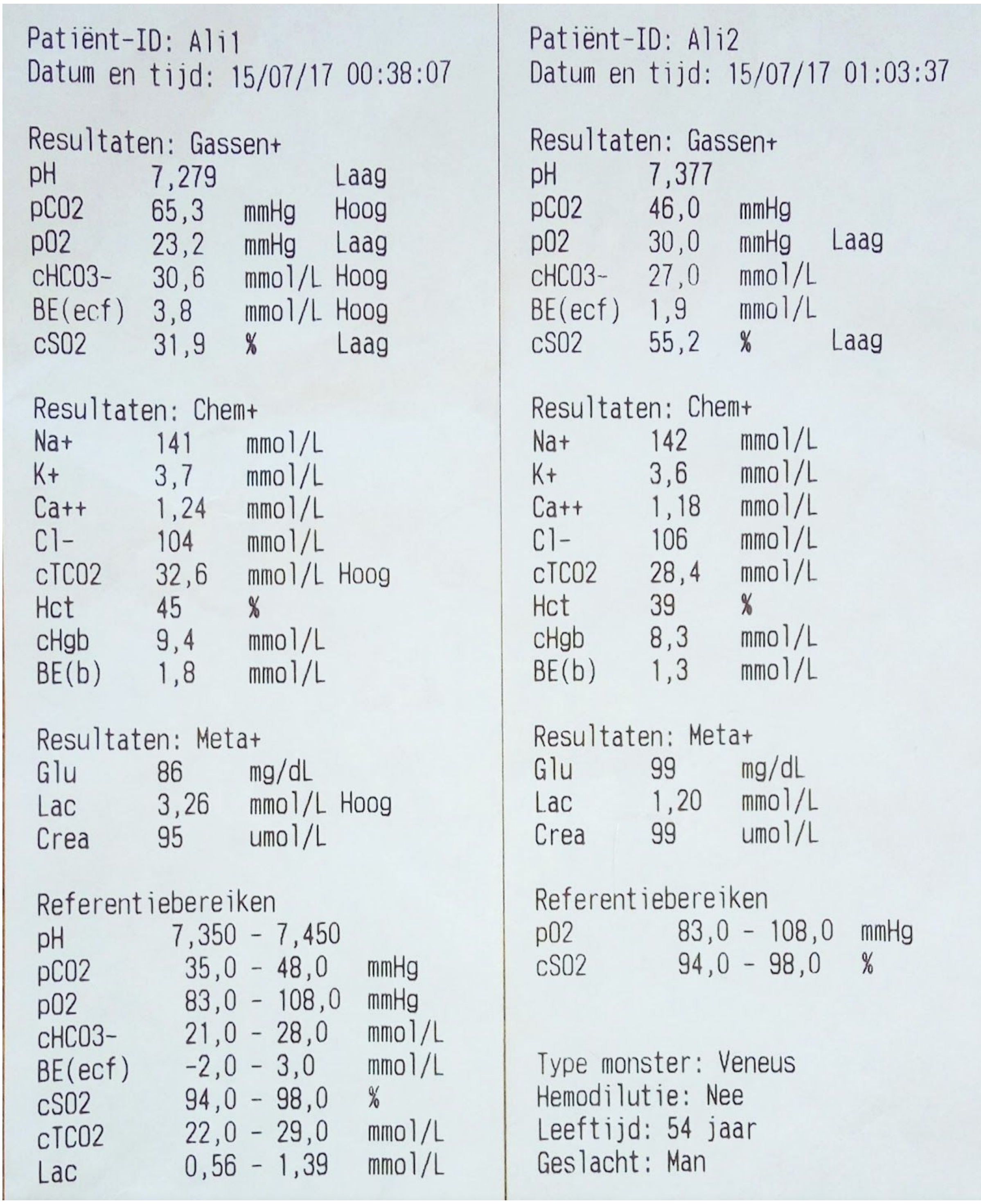
Glu	79	mg/dL	
Lac	0,79	mmol/L	
Crea	122	umol/L	Hoog

Referentiebereiken

pO2	83,0 - 108,0	mmHg
cSO2	94,0 - 98,0	%
K+	3,5 - 4,5	mmol/L
Ca++	1,15 - 1,33	mmol/L
Crea	45 - 105	umol/L

Type monster: Veneus
Hemodilutie: Nee
Leeftijd: 57 jaar
Geslacht: Man

Ejemplo con Voluntaria y aplicación I.V. de 250 ml con 50 ppm de concentración



Patiënt-ID: Ali1
Datum en tijd: 15/07/17 00:38:07

Resultaten: Gassen+

pH	7,279		Laag
pCO2	65,3	mmHg	Hoog
pO2	23,2	mmHg	Laag
cHCO3-	30,6	mmol/L	Hoog
BE(ecf)	3,8	mmol/L	Hoog
cSO2	31,9	%	Laag

Resultaten: Chem+

Na+	141	mmol/L	
K+	3,7	mmol/L	
Ca++	1,24	mmol/L	
Cl-	104	mmol/L	
cTCO2	32,6	mmol/L	Hoog
Hct	45	%	
cHgb	9,4	mmol/L	
BE(b)	1,8	mmol/L	

Resultaten: Meta+

Glu	86	mg/dL	
Lac	3,26	mmol/L	Hoog
Crea	95	umol/L	

Referentiebereiken

pH	7,350 - 7,450	
pCO2	35,0 - 48,0	mmHg
pO2	83,0 - 108,0	mmHg
cHCO3-	21,0 - 28,0	mmol/L
BE(ecf)	-2,0 - 3,0	mmol/L
cSO2	94,0 - 98,0	%
cTCO2	22,0 - 29,0	mmol/L
Lac	0,56 - 1,39	mmol/L

Patiënt-ID: Ali2
Datum en tijd: 15/07/17 01:03:37

Resultaten: Gassen+

pH	7,377		
pCO2	46,0	mmHg	
pO2	30,0	mmHg	Laag
cHCO3-	27,0	mmol/L	
BE(ecf)	1,9	mmol/L	
cSO2	55,2	%	Laag

Resultaten: Chem+

Na+	142	mmol/L
K+	3,6	mmol/L
Ca++	1,18	mmol/L
Cl-	106	mmol/L
cTCO2	28,4	mmol/L
Hct	39	%
cHgb	8,3	mmol/L
BE(b)	1,3	mmol/L

Resultaten: Meta+

Glu	99	mg/dL
Lac	1,20	mmol/L
Crea	99	umol/L

Referentiebereiken

pO2	83,0 - 108,0	mmHg
cSO2	94,0 - 98,0	%

Type monster: Veneus
Hemodilutie: Nee
Leeftijd: 54 jaar
Geslacht: Man

WORKING MECHANISM OF CHLORINE DIOXIDE AGAINST VIRUSES

As a rule, most viruses behave similarly and once they bind to the appropriate host type - bacteria or cell, depending on the case - the nucleic acid component of the virus being injected takes over after the protein synthesis processes of the infected cell. Certain segments of the viral nucleic acid are responsible for the replication of the genetic material in the capsid. In the presence of these nucleic acids, the CLO2 molecule becomes unstable and dissociates, releasing the resulting oxygen into the environment, which in turn helps to oxygenate the surrounding tissue by increasing mitochondrial activity and thus the immune system response.*[6#ClO2 is a size selective biocide]*

The nucleic acids, DNA-RNA, consist of a chain of puric and pyrimidine bases, see: guanine (G), cytosine (C), adenine (A) and thymine (T). It is the sequence of these four units along the chain that makes one segment different from another. The guanine base, which is found in both RNA and DNA, is very sensitive to oxidation, forming 8-oxoguanine as a byproduct of it. Therefore, when the CLO2 molecule comes into contact with guanine and oxidizes it and leads to the formation of 8-oxoguanine, thus blocking the replication of the viral nucleic acid by base pairing. Although replication of the protein capsid can continue; the formation of the fully functional virus is blocked by oxidation thanks to CLO2.

The CLO2 molecule presents characteristics that make it an ideal candidate for treatment in the clinical setting, as it is a product with a high power of selective oxidation and a great capacity to reduce acidosis, increasing oxygen in tissues and mitochondria, thus facilitating the rapid recovery of patients with lung diseases as shown in the data above..

POSSIBLE PRECAUTIONS AND CONTRAINDICATIONS

Chlorine dioxide reacts with antioxidants and various acids, so the use of **vitamin C** or ascorbic acid during treatment is **not recommended**, as it cancels out the effectiveness of chlorine dioxide in eliminating pathogens (the antioxidant effect of one prevents the selective oxidation of the other). Therefore, it is not recommended to take antioxidants during the days of treatment.
It has been shown that stomach acid does not affect their effectiveness. In the cases of patients with Warfarin treatment, they should constantly check the values to avoid cases of overdose, since it has been proven that chlorine dioxide improves blood flow.

Although chlorine dioxide is very soluble in water, it has the advantage that it does not hydrolyze, so it does not generate toxic carcinogenic THMs (trihalomethanes) like chlorine. It also does not cause genetic mutations or malformations.

A protocol has been developed whereby a solution of this compound can be taken orally and intravenously.

Legal basis for immediate application:

*The respective national legislation must be observed in any case, and in particular its provisions for use in the event of a national emergency

WORLD MEDICAL ASSOCIATION DECLARATION OF HELSINKI

Excerpt:

Ethical Principles for Medical Research Involving Human Subjects
Adopted by the 18th WMA General Assembly, Helsinki, Finland, June 1964, and amended by the Committee

64th WMA General Assembly, Fortaleza, Brazil, October 2013

General principles

3. The Declaration of Geneva of the World Medical Association binds the physician to the formula "to look after the health of my patient first and foremost", and the International Code of Medical Ethics states that: "A physician shall consider the best interests of the patient in providing medical care.

4. It is the duty of physicians to promote and safeguard the health, well-being and rights of patients, including those involved in medical research. A physician's knowledge and conscience should be subordinate to the fulfillment of that duty.

5. Progress in medicine is based on research that must ultimately include studies in human beings.

………

Unproven interventions in clinical practice

37. When proven interventions do not exist in the care of a patient or other known interventions have proven ineffective, the physician, after seeking expert advice, with the informed consent of the patient or a legally authorized representative, may be permitted to use unproven interventions if, in his or her judgment, this gives some hope of saving life, restoring health or alleviating suffering. Such interventions should be subsequently investigated to assess their safety and efficacy. In all cases, such new information should be recorded and, where appropriate, made available to the public.

Pathogen Efficacy Listing (referenced)

Virus

Adenovirus Type 40 6
Calicivirus 42
Canine Parvovirus 8
Coronavirus 3
Feline Calicivirus 3
Foot and Mouth disease 8
Hantavirus 8
Hepatitis A, B & C Virus 3,8
Human coronavirus 8
Human Immunodeficiency Virus 3
Human Rotavirus type 2 (HRV)15
Influenza A22
Minute Virus of Mouse (MVM-i)8
Mouse Hepatitis Virus spp.8
Mouse Parvovirus type 1 (MPV-1)8
Murine Parainfluenza Virus Type 1 (Sendai)8
Newcastle Disease Virus 8
Norwalk Virus 8
Poliovirus 20
Rotavirus 3
Severe Acute Respiratory Syndrome (SARS) coronavirus 43
Sialo Cryo Adenitis Virus 8
Simian rotavirus SA-1115
Theiler's Mouse Encephalomyelitis Virus 8
Vaccinia Virus 10

Bacteria

Blakeslea trispora 28
Bordetella bronchiseptica 8
Brucella suis 30
Burkholderia spp.36
Campylobacter jejuni 39
Clostridium botulinum 32
Clostridium difficile 44
Corynebacterium bovis 8
Coxiella burnetii (Q-fever) 35
E. coli spp .1,3,13
Erwinia carotovora (soft rot) 21

Francisella tularensis 30
Fusarium sambucinum (dry rot) 21
Helicobacter pylori 8
Helminthosporium solani (silver scurf) 21
Klebsiella pneumoniae 3
Lactobacillus spp .1,5
Legionella spp. 38,42
Leuconostoc spp.1,5
Listeria spp. 1,19
Methicillin-resistant Staphylococcus aureus 3
Mycobacterium spp.8,42
Pediococcus acidilactici PH31
Pseudomonas aeruginosa 3,8
Salmonella spp.1,2,4,8,13
Shigella 38
Staphylococcus spp.1,23
Tuberculosis 3
Vancomycin-resistant Enterococcus faecalis 3
Vibrio spp.37
Multi-Drug Resistant Salmonella typhimurium 3
Yersinia spp.30,31,40

Bacterial Spores

Alicyclobacillus acidoterrestris 17
Bacillus spp.10,11,12,14,30,31
Clostridium. sporogenes ATCC 1940412
Geobacillus stearothermophilus spp.11,31
Bacillus thuringiensis 18
OTHER
Beta Lactams 29
Amplicons 46
Volatile organic compounds (VOCs)47
PROTOZOA
Chironomid larvae 27
Cryptosporidium 34
Cryptosporidium parvum Oocysts 9
Cyclospora cayetanensis Oocysts 41
Giardia 34
Alternaria alternata 26
Aspergillus spp.12,28
Botrytis species 3
Candida spp.5, 28
Chaetomium globosum 7
Cladosporium cladosporioides 7
Debaryomyces etchellsii 28

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