



ECOCLEAN-50 PLUS
(PHARMA GRADE)
or
ECOCLEAN-BGR

PRODUCT DESCRIPTION

Ecoclean-50 Plus (Pharma Grade), also commercially branded as **ECOCLEAN-BGR**, is a nano-emulsion of Neem concentrate, derived from the bitter element of cold-pressed neem oil. Neem (*Azadirachta indica*) is recognized globally as a medicinal plant well known for its antibacterial, anti-malarial, anti-viral, and anti-fungal properties. Neem nano-emulsion (NE) is formulated using neem oil, Tween 20, and DM water by high-energy ultrasonication. The formulated neem NE showed a high level of anti-bacterial activity against the bacterial pathogens like *Vibrio vulnificus*, *Escherichia coli*, *Legionella* and *Salmonella* strains by disrupting the integrity of the bacterial cell membrane.

STUDIES HIGHLIGHTING THE ANTI-BACTERIAL ACTIVITY OF NEEM

Werner Fabry (Fabry *et al* 1998) in his study tested the extracts of *Azadirachta indica* (stem bark and leaves) against 105 strains of bacteria from seven genera (*Staphylococcus*, *Enterococcus*, *Pseudomonas*, *Escherichia*, *Klebsiella*, *Salmonella*, *Mycobacterium*). The minimum inhibitory concentration reached by 50% (MIC50%) and 90% (MIC90%) of the strains for the extracts of *A. indica* (stem bark) ranged from 0.25–2 mg/ml and from 0.5 to 2 mg/ml, respectively. Moreover extracts of the edible part (flowers) of *A. indica* also showed antibacterial activity against *Bacillus cereus*, *Staphylococcus aureus*, *Listeria monocytogenes*, *Escherichia coli* and *Salmonella infantis* (Alzoreky and Nakahara 2003).

From a preliminary study it has been found that β -sitosterol, a phytochemical found in *A. indica* has a role in strengthening the immune system (Bumrela and Naik 2011). Hence, many people apply it on skin for treating wounds, burns and for curing skin diseases (Pandey *et al*, 2014). The phyto-constituents, β -sitosterol along with β carotene in the methanol extract are also well-known antibacterial agents functioning against a broad spectrum of both Gram negative and Gram positive bacteria, including *S. aureus* (Bumrela and Naik 2011).

A clinical treatment study using formulation of muco-adhesive dental gel containing *Azadirachta indica* leaf extract (25 mg/g) showed microbial evaluation of *Streptococcus mutans* and *Lactobacilli* species which was carried out to determine the total decrease in the salivary bacterial count (Pai *et al*, 2004). *Enterococcus faecalis* is the most commonly found bacteria in failed root canal. Sodium hypochlorite (NaOCl) and 2% chlorhexidine (CHX) are used as the root canals irrigants (Bazvand *et al*, 2014), whereas, constant increase in antibiotic resistant strains and side effects of chemical irrigants has led to the search for alternative herbal medicaments.

Thus, Gonmode *et al*, Bazvand *et al* (2014), Hegde *et al* (2013), and Damre (2015) in their studies observed higher inhibition zone of *E. faecalis* culture by neem leaves extract compared to that of NaOCl. Further studies showed that the antibacterial activity of neem could be due to the presence of several active constituents like nimbidin, nimbin, nimbolide, gedunin, azadirachtin, mahmoodin, margolone and cyclictrisulphide (Biswas *et al* 2002).

Antibacterial activity along with anti-secretory and anti-hemorrhagic activity was found against the multi-drug-resistant *Vibrio cholera* (serotypes O1, O139 and non-O1, non-O139), a causative agent of watery diarrhea such as cholera, from the methanol extract of neem leaf (Thakurta *et al* 2007).

Methanolic extract of **neem** leaves has shown virucidal **activity** against coxsackievirus virus B-4 (27) . The **antiviral activity of neem** leaves has been found to be **due** to the presence of flavonoids, triterpenoids and their glycosides. Neem is known to latch on to the lipids on the outer sheath of viruses and absorbing them, thereby preventing the virus from entering or infecting cells. This makes neem an excellent preventive aid in tackling viral infections as is demonstrated by the extensive use of neem in India during attacks of small pox, chicken pox, measles and herpes.

Some bioactive compounds from neem (Biswas *et al* 2002):

Neem compound	Source	Biological activity
Nimbidin	Seed oil	Anti-inflammatory, Antiarthritic, Antipyretic, Hypoglycaemic, Antigastric ulcer, Spermicidal, Antifungal, Antibacterial, Diuretic
Nimbin	Seed oil	Spermicidal
Azadirachtin	Seed	Antimalarial
Mahmoodin	Seed oil	Antibacterial
Gallic acid, (-) epicatechin and catechin	Bark	Anti-inflammatory, Immunomodulatory
Polysaccharides Gla , G1b	Bark	Antitumour
Cyclic trisulphide and cyclic tetrasulphide	Leaf	Antifungal



Long before the advent of vaccines, Neem has been traditionally used in India for combating the spread of viral infections such as measles, small-pox and chicken-pox. Experiments with small-pox, chicken-pox and fowl-pox have shown that neem is very effective for preventing the spread, if not for curing, these conditions. The neem extracts absorb the viruses, preventing them from spreading to unaffected cells. Neem has also been shown to be effective against herpes virus and the viral DNA polymers of the hepatitis B virus.

In 1993, in a preliminary study, the National Institute of Health reported positive results from *in-vitro* tests where neem bark extracts killed the AIDS virus. Using extracts made by soaking neem bark in water, Dr Van Der Nat of the Netherlands found that the extract produced a strong immune stimulating reaction. Neem contains immune modulating polysaccharide compounds; the polysaccharide may be responsible for increasing antibody production. Other elements of neem may stimulate immune function by enhancing cellular mediated response. This dual action can help the body ward off the frequent infections that generally accompany AIDS.

Ecoclean-50 Plus, thanks to its effective anti-microbial action, even against very stubborn strains of bacteria, algae and even viruses, is recommended for use not only in fermented organic effluents, which give out a foul odour, post treatment, but also as a disinfectant cum sanitizer to prevent the spread of viral infections. A dosing of 15 to 20 ppm is recommended. **Ecoclean-50 Plus** is also recommended for use in AC cooling towers and chilling plants where slimy algal growth and proliferation of disease-causing bacterial strains like *Legionella* (pneumonia causing bacteria) are common. 15 to 20 ppm dosing for a week to 10 days would be sufficient to totally control the infection. A maintenance dosing of 15 ppm once a month is recommended to prevent re-infection.

COMPARISON OF ALTERNATIVES

SODIUM HYPOCHLORITE	HYDROGEN PEROXIDE	ULTRA VIOLET
1. Commonly called Liquid Bleach	Industrial oxidising agent that is used as laundry bleach	Point of contact bactericide used in water treatment
2. Reacts with water to release Chlorine which acts as disinfectant and bleaching agent	Corrosive to skin, eyes and respiratory tract	Excessive exposure causes damage to the eye dioptric system and retina
3. Has bleaching effect on skin and clothes	At high concentrations it is a hazardous chemical – it can catch flames or even explode	Known to cause skin cancer and may affect the immune system
4. Irritating to the eyes and can trigger allergic skin reactions	Accidental ingestion causes bloating of the stomach	Has damaging effect on DNA and can trigger cell mutation
5. Effective only at high concentrations	It is a known animal carcinogen with human relevance undocumented	UV radiation accelerates skin aging

WHAT THE WORLD HEALTH ORGANISATION HAS TO SAY ABOUT BODY DISINFECTANTS

UV lamps should not be used to sterilize hands or other areas of skin as UV radiation can cause skin irritation.

Can an ultraviolet disinfection lamp kill the new coronavirus?



No. Spraying alcohol or chlorine all over your body will not kill viruses that have already entered your body. Spraying such substances can be harmful to clothes or mucous membranes (i.e., eyes, mouth). Be aware that both alcohol and chlorine can be useful to disinfect surfaces, but they need to be used under appropriate recommendations.

Can spraying alcohol or chlorine all over your body kill the new coronavirus?





USAGE :

Ecoclean-50 Plus (Ecoclean-BGR) mixed into aerosol sprays (1 ml of concentrate for 10 litres of spray) or floor swabbing water (2 ml of concentrate for 5 litres of water) can be used in hospitals, airports, passenger flights, etc to prevent the unchecked spread of viral infections



like Zikka fever, Bird flu, Swine flu and even the currently talked about Corona Virus.

1 kg of Ecoclean-50 Plus (Pharma Grade) in 2500 litres of water can be used for general disinfection of roads, streets, pavements, etc as well as building interiors, floors, walls, furniture, etc.

It can also be added to swimming pools or drinking water storage tanks (1 ml concentrate for 100 litres of water), as a preventive aid in the case of pandemics.

Ecoclean-50 Plus (Ecoclean-BGR) mixed into water in the ratio 1:4000 can be used for disinfection of people at public spaces like airports, railway stations, shopping malls, theatres, schools and colleges, hospitals, offices, etc by deploying it as a fine mist spray (0.5 microns) or through fumigation in Disinfection Tunnels.



It can also be sprayed on walls, doors, gutters, roads, etc as part of Municipal disinfection drives as a safe alternative to harmful reagents like Chlorine or Sodium hypochlorite.



EcoHealth

DR. R. ANANDAPADMANABAN

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CERTIFICATE

A sample of “EcoClean-50 Plus Pharma Grade”, an extract of herbs, a proprietary product of EcoHealth Products Private Ltd., intended for use as a general purpose disinfectant, was entrusted with me on 03.05.2020, for analysis, evaluation and certification.

Based on my work on the aforesaid product, using standard methods and on reference pathogenic material, generally followed by the International Environmental Protection Agencies to evaluate disinfectants, I hereby certify that the product is fit for use as a general purpose disinfectant against common pathogens and also recently emergent pathogens that are enveloped viruses.

Dr. R. ANANDAPADMANABAN
Ph.D., F.H.M.S., F.P.T.S., (USA)
Senior Scientist & Specialist In
Molecular Immunology
Molecular Medicine
Molecular Virology

14th May, 2020



EcoHealth



TAMILNADU TEST HOUSE PRIVATE LIMITED

NABL ACCREDITED & DRUG CONTROL
LICENSED www.tamilnadutesthouse.com

TEST REPORT

TEST REPORT NO: TNTH/M-0333/2020-21

DATE:16.05.2020

SAMPLE SUBMITTED BY CUSTOMER

CUSTOMER DETAILS	M/s. Eco Health Products Private Limited
ADDRESS	Plot No :1837, Door No: 15, 20 th Main road, Anna nagar(west) Chennai-600040
BATCH NUMBER	EHP0005
SAMPLE DESCRIPTION	Ecoclean 50 plus (Pharma grade)
SAMPLE QUANTITY	150 ml
DATE OF MANUFACTURING	May-20
PACKING	In packed condition
SAMPLE RECEIVED ON	15.05.2020
ANALYSIS STARTED ON	15.05.2020
ANALYSIS COMPLETED ON	16.05.2020

S. NO	PARAMETER	METHOD	UNITS	RESULT	SPECIFICATION
1	Skin irritation test	IS 4011:1997	-	Complies	No Reaction

Remark : The above tested product has been found to be safe for human skin

****END OF REPORT****

For Tamilnadu Test House Private Limited

Verified By

Authorised Signatory



EcoHealth

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Dated: 13-04-2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the Coimbatore City Municipal Corporation has purchased the Neem-based Pharma Grade anti-microbial and anti-viral disinfectant Solution (ECOCLEAN-50 PLUS Pharma Grade) vide this office supply order in Ref No. 1880/2020/MD2 dated 23-03-2020 for combatting the COVID-19 Infection Prevention and Control works. The same was used for disinfection of streets, walls, gutters, etc., in the Wards of West Zone as well as in the Municipal Solid Waste Dumping yard of the Corporation at a dilution ration of 1:2500. The results are extremely satisfying as we were able to achieve control of foul odours as well as extremely good sanitisation reports from the labs. Additionally, no adverse reactions were reported by the field/sanitary staff who have been handling the spraying operations or by the general public about exposure to the disinfectant spraying.

13/04/20

(K.Saravanakumar)

**Executive Engineer
City Municipal Corporation
Coimbatore.**



BE CAREFUL
BE AWARE
BE SAFE

**DON'T
COMPROMISE**