

Vamos Biotech Technology



December 2020

TABLE OF CONTENT



- 1. Antibacterial Resistance Solutions***
- 2. Anti-cancer & Anti-viral Solutions***
- 3. Cytomedicines***
- 4. Induced Cell Signaling***
- 5. Contact Us***

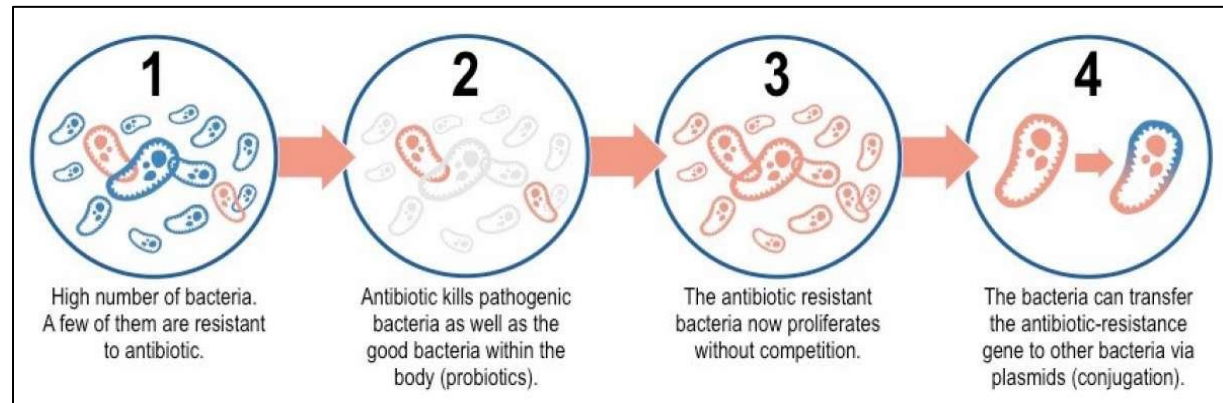
1. ANTIBACTERIAL RESISTANCE SOLUTIONS



THE PROBLEM



- *Antibiotics are unlike many other drugs used in medicine, as the more we use them the less effective they become against their target organisms.*
- *The Antibacterial Resistance (ABR) is the World's number 1 health problem according to the World Health Organization. Globally, **700,000 people died in 2018** as a result of infections caused by bacteria resistant to antibiotics.*
- *Antibacterial Resistance has devastating effect on health, human life and economy. It is the biggest threat to humanity, even bigger than terrorism or global warming.*
- *A failure to address the problem of antibiotic resistance will result in an estimated **10 million deaths** every year globally by 2050 and **a cost of 85 trillion USD** in loss productivity to the global economy.*



THE SOLUTION



- *FLIP7 is a natural peptide complex comprising of four (4) groups of antibiotic peptides: defensins, cecropins, dipterocin's and proline-rich peptides. It also includes anti-viral and anti-fungal components.*
- *Studies demonstrate the advantages of the natural antimicrobial complex FLIP7 in comparison with traditional antibiotic therapy. FLIP7 is effective against many (although not all) strains with acquired and natural antibiotic resistance, including highly resistant bacterial biofilms. The peptide complex is protected from the development of resistance in gram-negative bacteria, it can inhibit the growth of resistance to conventional antibiotics when combined and is not toxic to human blood cells, which makes it promising for use in medicine and cosmetology.*
- *The FLIP7 AMP complex-based medical drugs can be used alone, or in a combined therapy of bacterial infections as antibiotic synergists, or for the suppression of the bacterial biofilm.*

ANTIMICROBIAL ACTIVITY

Highly sensitive bacteria

Enterobacteriaceae

Escherichia coli,
Klebsiella pneumoniae,
Salmonella typhimurium,
Enterobacter cloacae

Bacillaceae

Bacillus subtilis,
Bacillus megaterium

Moraxellaceae

Acinetobacter baumannii

Coccaceae

Staphylococcus aureus
Micrococcus luteus

Moderately sensitive bacteria

Pseudomonadaceae

Pseudomonas aeruginosa

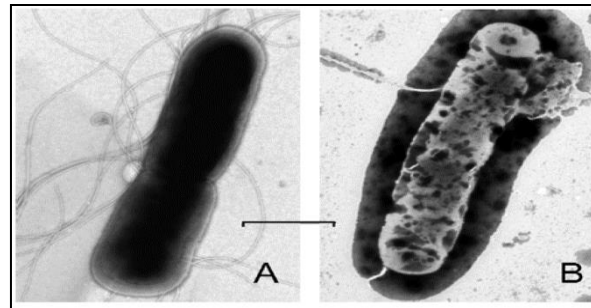
Corynebacteriaceae

Listeria monocytogenes

AMP MODE OF ACTION

FLIP7 AMPs mode of action and activity spectrum

<i>Defensins</i>	<i>CELL WALL DISRUPTION</i>	<i>G+ bacteria fungi</i>
<i>Diptericins</i>		<i>G- bacteria</i>
<i>Cecropins</i>		<i>G- bacteria</i>
<i>P-peptides</i>	<i>Blocking of protein and DNA synthesis</i>	<i>G+/- bacteria</i>



FLIP7 R&D PROGRAM



1. FLIP7 topical (clinical trial finished)

A topical solution (medical device class 2b) has been developed for treatment of skin infections, diabetic foot ulcer, wounds, burns, pyoderma and post-surgery infections.

2. FLIP7 inhalation device (under development)

A drug is under development for treatment of respiratory infection diseases such as pneumonia, tuberculosis (including drug-resistant tuberculosis), bronchitis and other respiratory infections.

3. Antibiotic adherent (under development)

Not only that FLIP7 is able to enhance existing antibiotics to successfully combat antibiotic resistant bacteria, but this feature of FLIP7 will allow manufacturers to produce antibiotics that are much smaller in size and without side effects. This function can be achieved by creating a simple FLIP7 product that will be administered together with all types of antibiotics.

ONE SOLUTION to solve 80% of the entire Antibacterial Resistance problem globally.

GOLD STANDARD IN CLINICAL TRIALS



The efficacy of the first FLIP7 product - Entomix was proven in a clinical trial in Russia, that was conducted in 3 leading hospitals. The clinical trial was conducted under a medical device class 2b classification; the result is GOLD standard in all tests.

Link to the website of the medical registry:

<http://reestrinform.ru/reestr-clinicheskikh-issledovaniy/id-5405.html>

Name of medical device:

Hydrogel coating to suppress the development of bacterial biofilms according to TU 21.20.23-006-72500079-2017

End of Clinical Trial: End of December 2019

Results:

The official results of the clinical trial are described in the slides below.

The results of the clinical trial positioned ENTOMIX as a GOLD STANDARD in treatments of (1) pyoderma, (2) diabetic foot ulcer, (3) burns, (4) post-surgery wound infections and (5) Antibiotic resistant bacterial infections.

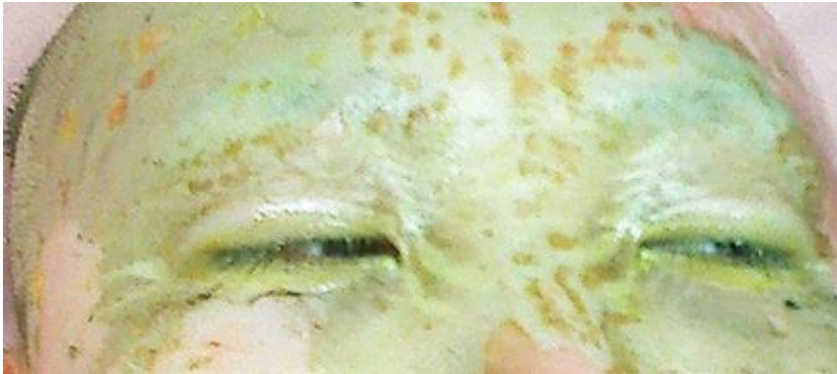
Product Registration:

The product registration of Entomix in Russia completed successfully in December 2020, and we already received market authorization from the Russian ministry of health.



THERMAL BURNS

Case report from Institute of emergency medicine, St. Petersburg



Before Treatment



3 weeks After Treatment with FLIP7

- *Physiologically correct skin regeneration with no scars.*
- *Ideal therapeutic and cosmetic solution for face burns*

Wound infections is a №1 problem in surgery, emergency and regenerative medicine

DIABETIC ULCER

Case report by a clinic in Genova, Italy



7 days after.
2 applications per day

Male, 75 y.o., diabetic foot, 1st
falanga is already amputated

Patient hospitalized for amputation surgery

- *No need for amputation*
- *Institute of emergency medicine in Saint Petersburg confirms strong efficacy in the healing of diabetic foot ulcers*

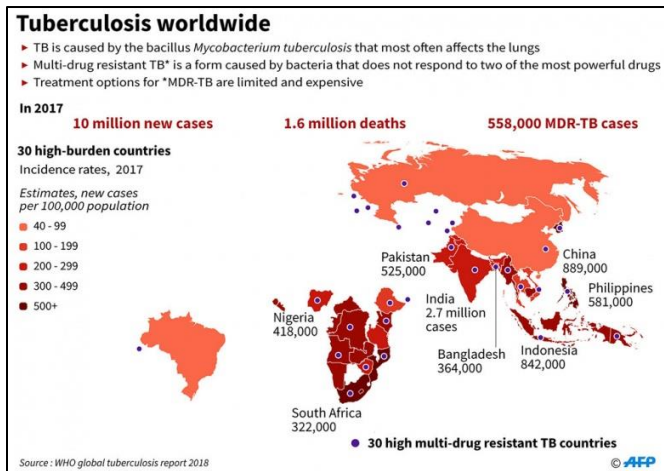
PNEUMONIA



FLIP7 based solutions are able to treat majority of the bacterial causes of pneumonia.

- *Pneumonia and other lower respiratory tract infections are the leading cause of death worldwide. In 2016, there were approximately 150 million new cases of pneumonia among children younger than 5 years worldwide, accounting for approximately 10-20 million hospitalizations, and 880,000 deaths.*
- *Pneumonia is the world's leading killer of children below 5, killing approximately 2,400 children a day or 876,000 children in 2016. Latest forecast show that the global morbidity will rise to 11 million children below the age of 5 by 2030.*
- *In 2015, more than half of the world's annual new pneumonia cases are concentrated in just five countries where 44% of the world's children aged less than 5 years live: **India (43 million), China (21 million) and Pakistan (10 million).***
- *In China, pneumonia is the 4th leading cause of death in urban areas, and number 1 cause of death in rural areas. 125,000 (5%) of those patients die each year.*
- *The global pneumonia therapeutics market is expected to reach USD 26.37 billion by 2026, at a CAGR of 8.39% from 2019. In 2018, the global vaccines segment was 7.42 billion and the pharmacy segment was 6 billion USD.*
- *Antibiotics can be effective for many of the bacteria that cause pneumonia, but **Antibiotic resistance is growing amongst the bacteria that cause pneumonia.** There are no treatments for viral causes of pneumonia (Allostatine has potential to be efficient in this space).*
- ***The FLIP7 inhalation device will not only be able to treat pneumonia more efficiently than the current antibiotics, but will also treat deadly pneumonia cases (caused by bacteria that is resistant to antibiotics).***

TUBERCULOSIS



The FLIP7 Inhalation device is a promising, low cost medical device for treatment of all types of tuberculosis, including multi-drug resistant Tuberculosis

Worldwide

- One third of the world's population is currently infected with the tuberculosis ("TB") bacillus, but only 5%-10% of people infected will become sick with the disease in their lifetime.
- Worldwide, TB is one of the top 10 causes of death. In 2018, an estimated 10 million people fell ill with TB worldwide, and a total of 1.5 million people died from TB.
- Multi-drug Resistant Tuberculosis MDR-TB is a particularly dangerous form of drug-resistant TB (resistance to at least isoniazid and rifampicin). MDR-TB is treatable, but requires extensive chemotherapy (up to two years of treatment) with second-line anti-TB drugs. Second-line drugs are more costly than first-line drugs, and can cause adverse reactions that are more severe, though manageable.

China

- The level of TB in China makes it a major public health problem. China has the world's second largest TB epidemic after India, with a quarter of the world's TB burden. In 2014 there were an estimated 930,000 new cases of TB in China, and an estimated 120,000 cases of pulmonary MDR-TB. Overall China has 10% of the global burden of TB with 400 million people having latent TB.
- In 2019, China had the world's second largest burden of MDR TB, with 63,000 new cases or 1/3 of the world's MDR-TB cases.
- Despite huge efforts by the government, the MDR-TB treatment in China remains out of reach for many, in particular in the rural areas. **The cost of an MDR-TB in China is above 300,000 RMB per treatment.**
- **Only 55% of the MDR-TB treatments are successful – the other patients died.**

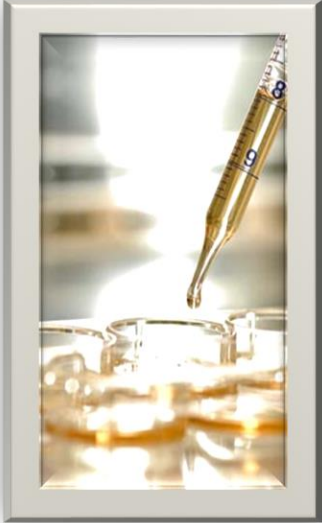
ANTIBIOTICS REVOLUTION

FLIP7 improves efficacy of many vitally important antibiotics

Antibiotic	Clinically achievable conc in blood, mg/L	MBIC₉₀ Ab mg/L	MBIC90 Ab + FLIP₇ mg/L	Pharmacological window
<i>S. aureus</i>				
Meropenem	30	>50	<0.1	>300
Ampicillin	120	20	<0.1	>24
Oxacillin	40	0.12	0.01	333
Vancomycin	40	34	1.5	27
Amikacin	40	>500	1.5	27
Chloramphenicol	20	5	1.0	20
<i>E. coli</i>				
Meropenem	30	3.75	<0.02	>1500
Cefotaxime	41	2.8	0.07	586
Tetracycline	5	0.9	0.15	33

Not only that FLIP7 is able to enhance existing antibiotics to successfully combat antibiotic resistant bacteria, but this feature of FLIP7 will allow manufacturers to produce antibiotics that are much smaller in size and without side effects. This function can be achieved by creating a simple FLIP7 product that will be administered together with all types of antibiotics. ONE SOLUTION to solve 80% of all Antibacterial Resistance problems globally.

FLIP7 SUMMARY



1. FLIP7 Topical (medical device)

*This product has a potential to become **industry standard** and be widely accepted in treatments of pyoderma, diabetic foot ulcer, wounds, burns, and all types of skin infections, as well as prevention and treatment of post-surgery infections.*

Expected on the markets: China (2022), other markets (2021)

2. FLIP7 inhalation device (medical device)

This product is uniquely positioned to become widely used in treatment of all respiratory diseases (pneumonia, tuberculosis, bronchitis, etc) caused by bacteria, including bacteria resistant to antibiotics and other drugs.

Expected on the markets: China (2022), other markets (2021)

3. FLIP7 Antibiotic adherent (prefilled syringe, medical device)

A single product with realistic potential to change the entire antibiotics industry globally by proving the following functions:

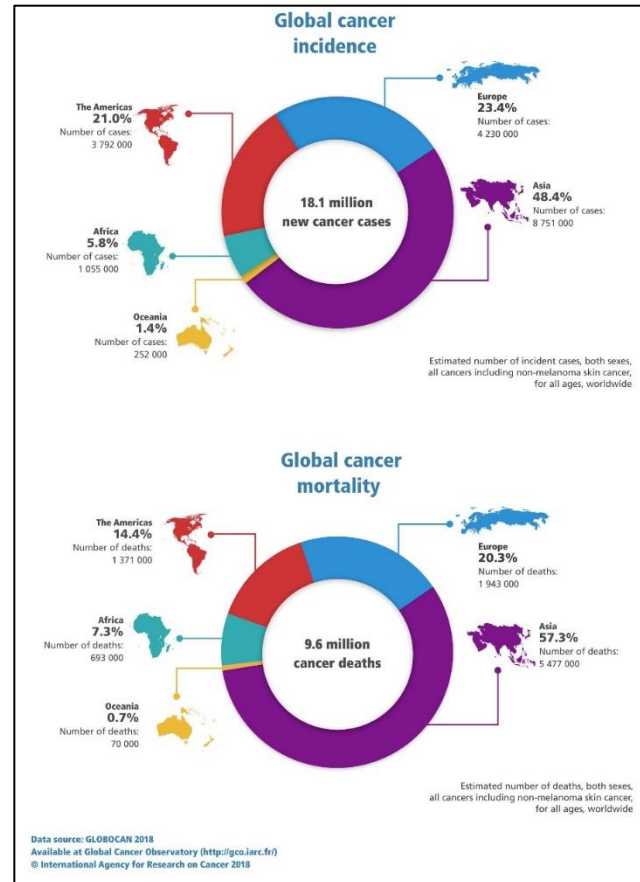
- a) In combination with FLIP7, antibiotics are able to efficiently fight and destroy antibiotic resistant bacteria for a big number of bacteria.*
- b) FLIP7 increases the efficiency (pharmaceutical window) of existing antibiotics from 300 to 15000 times. This is an opportunity for manufacturers of antibiotics to produce much smaller in size antibiotics that will be equally efficient. The smaller size antibiotics (when used with FLIP7) will have higher efficacy and dramatically reduced toxicity which significantly reduces the side effects.*

Expected on the markets: China (2022), other markets (2021)

2. ANTI-TUMOR & ANTI-VIRAL SOLUTIONS



THE PROBLEM OF CANCER



Cancer in China

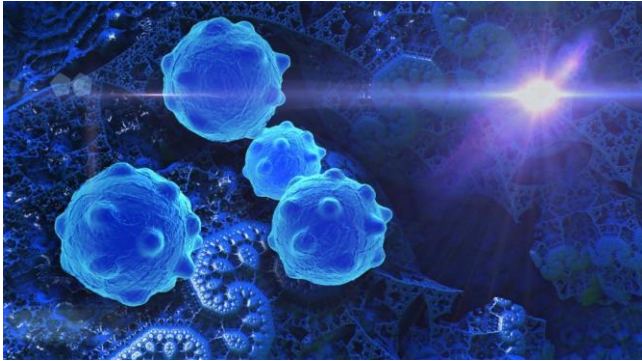
- Since 2010, cancer is the leading cause of death in China and is a major public health problem.
- Close to 4.3 million new cancer cases and 2.81 million cancer deaths were reported in 2015, with lung cancer being the most common incident cancer and the leading cause of cancer death.

THE REAL PROBLEM OF CANCER



- *The real problem with cancer is – no visibility. In other words, the immune system is not being able to recognize cancer cells in order to attack them. The only exception is when cancer cells lose the HLA expression (which is quite rare).*
- *The only drugs in existence that is global in scope and is able to treat all types of cancers are chemo-therapy drugs. Chemo drugs are efficient against all types of cancer, however they are unable to detect and kill cancer cells selectively. Instead, they attack and kill all young cells in the human body. As a result, patients treated with chemo therapy experience severe side effects.*
- *The modern medicine has made significant advances in cancer treatments. Immuno-therapy (such as CAR-T, CAR-NK) are very effective in treatment of cancers that express a single antigen. However, most of the cancers express multiple antigens, and cannot be treated efficiently.*

THE SOLUTION



Global, effective, low cost (15 USD) cancer treatment for all types of cancer with no side effects.

Effective Alternative for Chemotherapy.

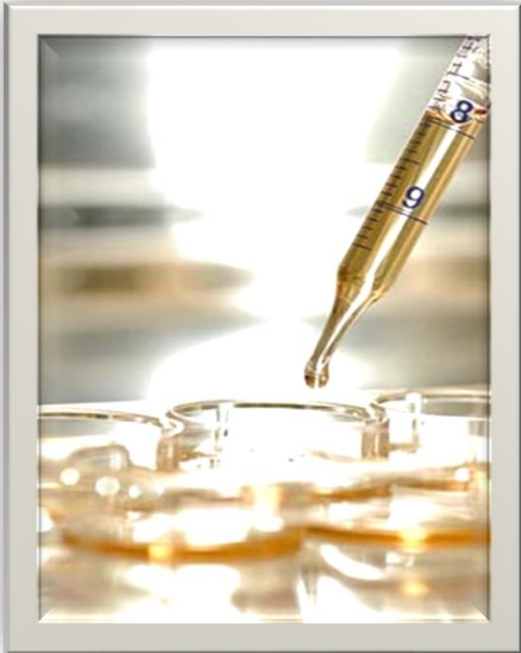
- *Allostatine is a synthetic immunomodulatory peptide for cancer and viral infections immunotherapy and cell therapy.*
- *A selective activator of cytotoxic cells in the human immune system. In the presence of Allostatine, natural killer (NK) cells more efficiently recognize and lyse tumor cells and virus-infected cells.*
- *Effective in both Prevention and treatment of cancers.*
- *Allostatine is more effective than chemo drugs, it is easily administered through a subcutaneous injection within minutes, there are no side effects, and can easily be combined with any other treatment.*
- *The total cost of Allostatine cycle (2 injections, similar to a chemo cycle) is estimated to 30 USD. Cost of one cycle of chemotherapy is typically calculated in thousands of dollars.*
- *The drug is ready to enter a clinical trial.*

MODE OF ACTION



- *Allostatine is a new type of immunomodulator that enables immune system (NK cells) to recognize cancer and virus cells (even if they have not lost HLA expression) and immediately attack them.*
- *The essence of this new approach is to “train” the patient’s immunity to recognize weak tumor antigens.*
- *The method of action is global (not antigen based), which means that Allostatine is effective against all types of cancer.*
- *Allostatine is selective, only cancer and viral cells are being attacked by the immune system in presence of Allostatine.*
- *A safety study of Allostatine showed a complete absence of toxicity.*

Allostatine R&D PROGRAM



1. Allostatine topical (herpes, papillomas, warts)

A topical formulation of Allostatine has already been developed and is currently available as a cosmetic solution. It has shown high clinical efficacy in various viral infections of the skin and mucous membranes (herpes simplex virus, Epstein-Barr, cytomegalovirus, human papilloma). Each of these socially significant infections makes up a large section of dermatology and urogynecology.

The Allostatine topical product has a promise to become a gold standard in treatments of herpes, papillomas and warts and will enter a clinical trial by end of 2020.

2. Allostatine injectable for cancer

The Allostatine injectable drug is a promising new drug with systemic action for treatments of all types of cancer and many viral infections. The presence of this drug in the patient's body activates the immune system and enables NK cells to recognize cancer and viral cells and attack them. The method of action is selective, there are no side effects and there are no damage to healthy cells.

Allostatine is highly efficient against all types of cancer, it is selective (only cancer and viral cells are destroyed), there are no known side effects, and will be sold at low cost (15 USD per injection, where 2 injections can replace a chemo cycle). Due to these advantages, it could be widely used and be high in demand replacement drug for a chemotherapy.

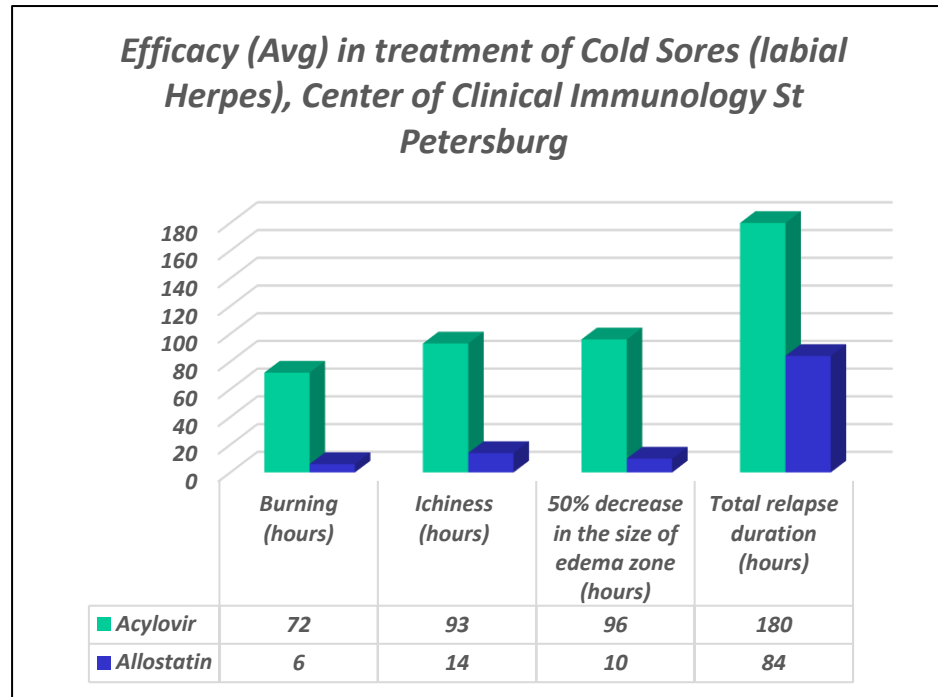
3. Allostatine injectable for Virus infections

The key link in virus strategy is the inhibition of the activity of NK cells through complex manipulation of the surface receptors of an infected cells. The problem of recognition of weak antigens is also a key in treatment of chronic (persistent) viral infections.

Allostatine has already shown clinical efficacy in both prevention and treatment of chronic (persistent) viral infections such as herpes, HPV, hepatitis C, HIV (the new Corona virus is under investigation).

COLD SORES

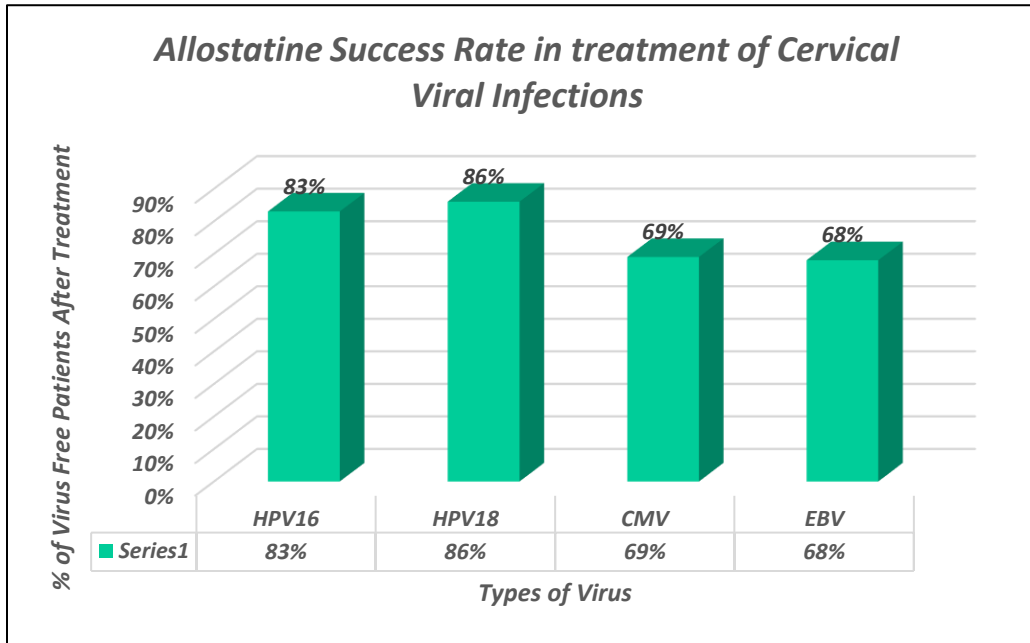
Clinically Proven Efficacy and Gold Standard in treatment of Cold Sores (labial herpes)



Cold sores (labial herpes) is the most ubiquitous skin disorder (over 50 million patients in USA only)

CERVICAL VIRAL INFECTIONS

Clinically Proven Efficacy and Gold Standard in treatment of Cervical Viral Infections



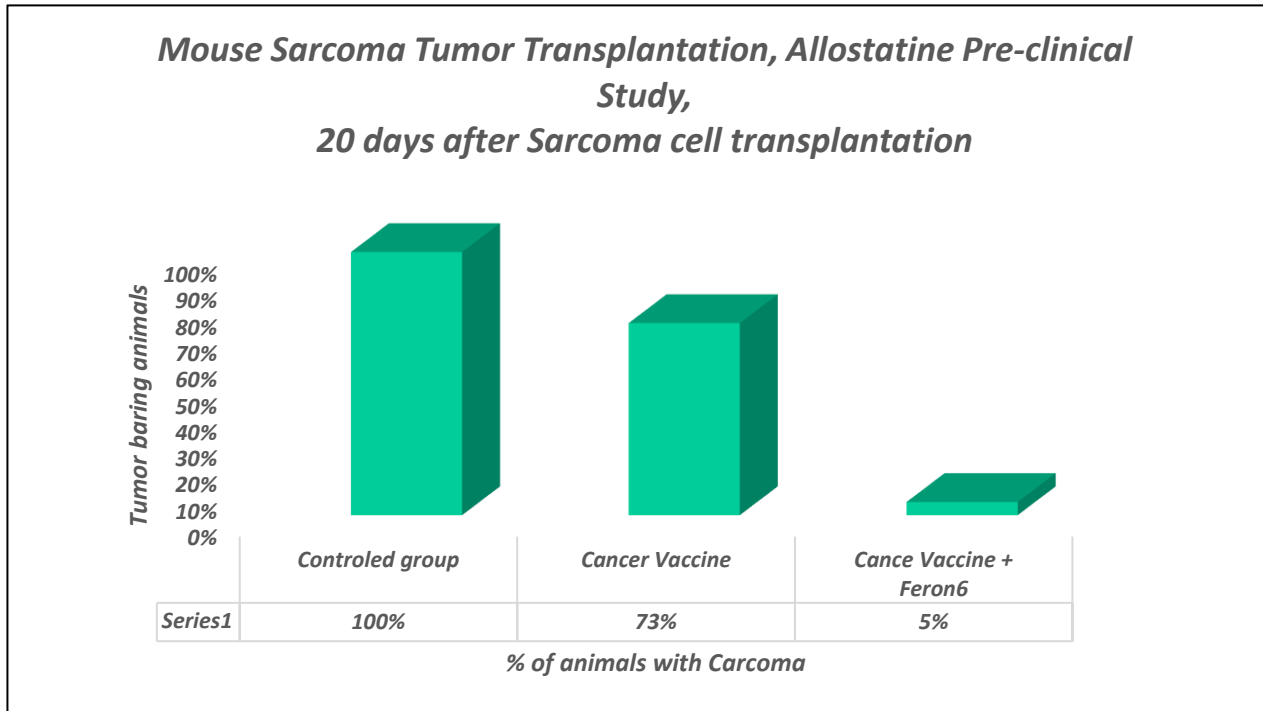
Cervical HPV infection - causes cervical cancer

Cervical CMV and EBV – major causes of newborn pathologies

HPV, CMV and EBV infections prevale in the most part of humans but have no effective drugs so far



SARCOMA TREATMENT



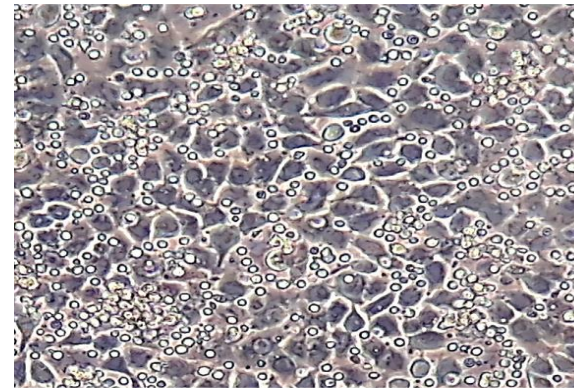
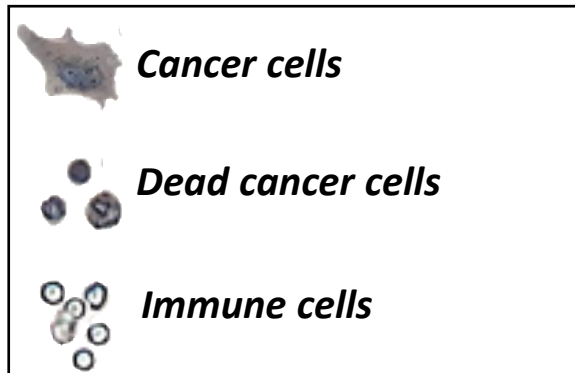
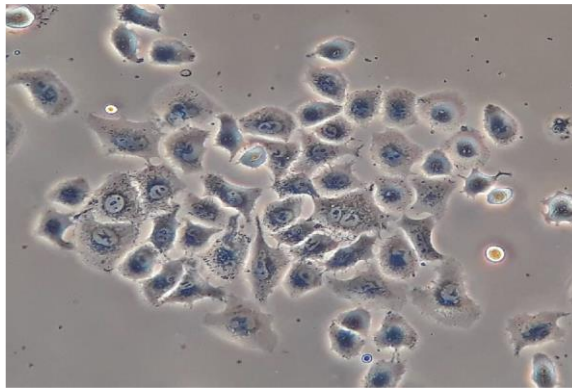
A pre-clinical study was carried out to determine the efficacy of Allostatine in prevention and treatment of Sarcoma. Sarcoma cancer cells was transplanted in all mice that was subject to the study. The results, after 20 days of the study were as follows:

- 100% of all mice that did not receive any treatment developed cancer and died (See the picture above)
- 73% of all mice treated with a cancer vaccine (developed in Nederland) developed carcinoma and died. (Since Sarcoma expresses multiple antigens, cancer vaccine is considered to be most effective treatment method for Sarcoma).
- Only 5% of the mice treated with a combination of Cancer Vaccine and Allostatine developed Sarcoma. The survival rate in this group was 95%.

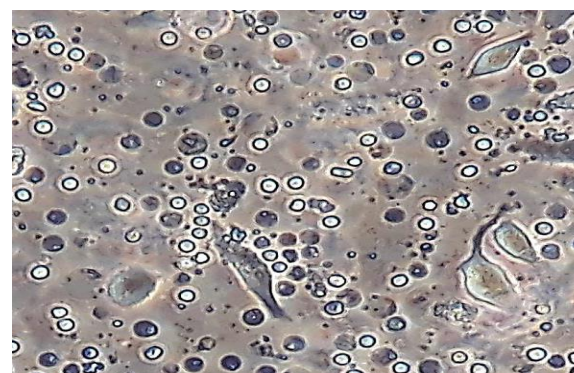
LUNGS CANCER

Lungs Cancer is the number 1 cancer in the world

**Non Small
Cell Lungs
Cancer
Cells**



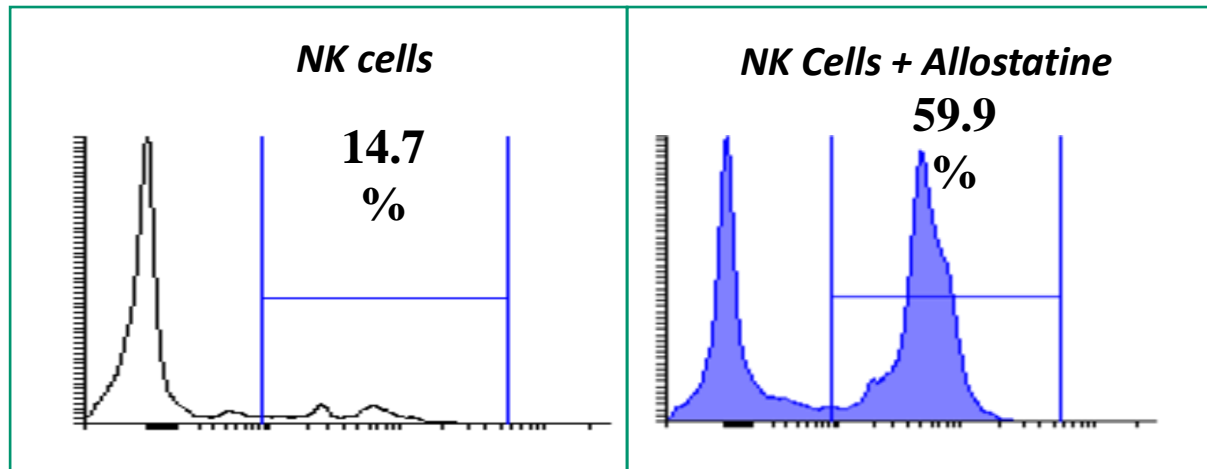
**Cancer
Cells +
Immune
Cells**



**Cancer
Cells +
Immune
Cells +
Allostatine**

CERVICAL CANCER

Cervical cancer is the number 2 cancer in woman in the world



Propidium iodide staining

Flow Cytometry Report, % of fatally damaged cervical cancer cells

Chemo vs Allostatin

Feature	Chemo	Allostatine
Effective against all types of cancer	Yes +++	Yes ++++
Selective Treatment	No	Yes
Side Effects	Serious	None
Continuous intake	No	Yes
Administration	Intravenous (requires hospitalization)	Subcutaneous (no hospitalization required)
Hospital visit required	Yes	No
Treatment time	Many hours	1 minute
Cost of a single treatment cycle	Many thousands of USD	30 USD

Allostatin can be considered as an alternative to Chemo Therapy

Chemo vs Allostatine

Chemo

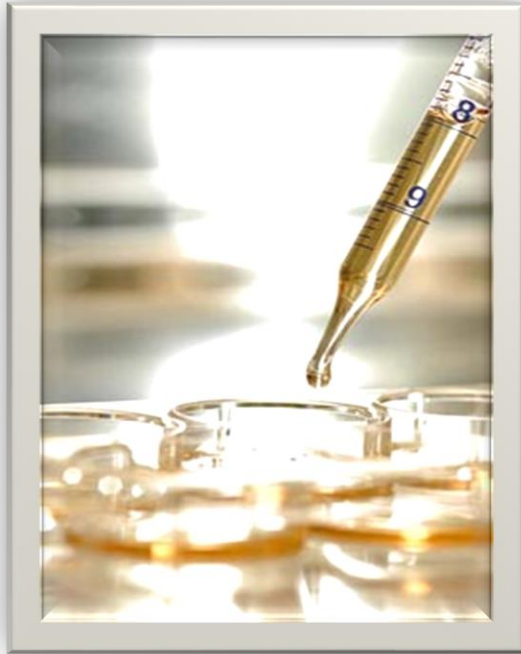


Allostatine



Allostatine can be considered as an alternative to Chemo Therapy

Allostatine Summary



1. Allostatine Topical (medical device)

This medical device has already demonstrated high success rate and gold standard in treatment of viral infections such as Cervical HPV infection (causes cervical cancer), Cervical CMV and EBV (major cause of pathologies in newborns). HPV, CMV and EBV infections prevail in most humans but there are no effective drugs so far.

Expected on the markets: China (2022), other markets (2020)

2. Allostatine injectable

The Allostatine injectable drug is a promising new drug with systemic action for treatments of all types of cancer and many viral infections.

This drug is unique in its ability to detect cells infected by virus and activate the immune system to destroy them. It can be used effectively in both prevention and treatment of many viruses, including a possibility for prevention and treatment of Corona Viruses.

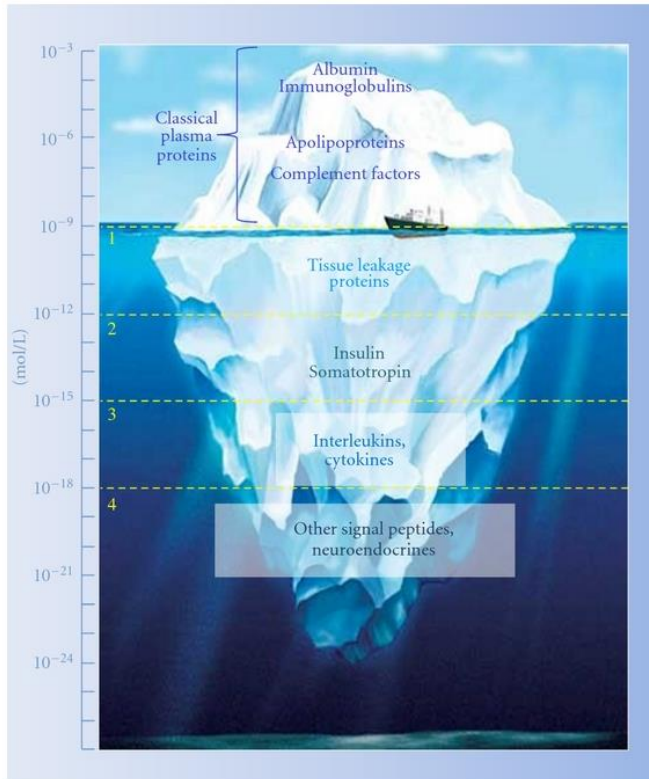
In cancer treatment, this drug is effective against all types of cancers. Due to its efficacy, no side effects, and low cost, this drug has a potential to efficiently replace the chemo therapy as a first line in cancer treatments.

Expected on the markets: China (2026), other markets (2025)

3. CYTOMEDICINES



CYTOMEDICINES

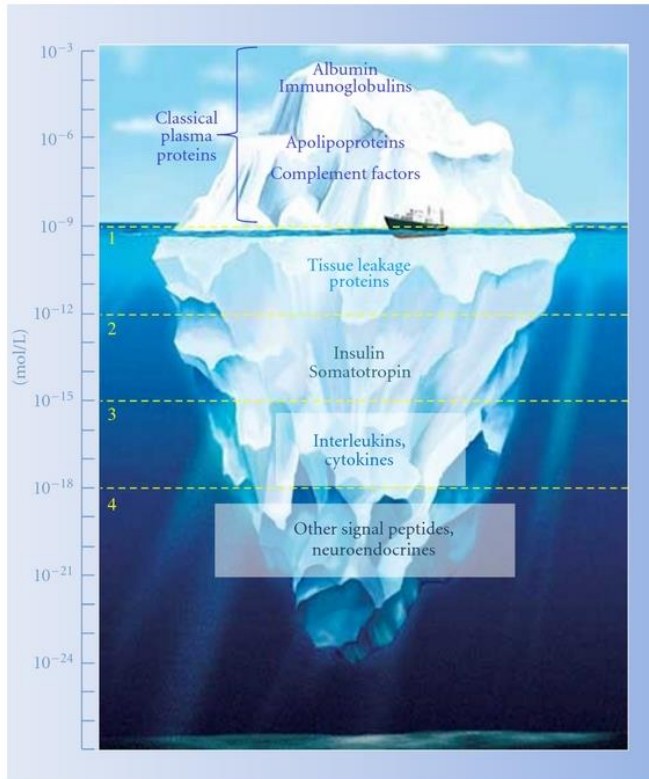


In addition to commercialization of Allostatic and FLIP7 based products, Vamos Biotech is also engaged in further research, development and production of other original medications based on research concerning how peptides influence the human body. Peptides are specific biologically active substances extracted from various animal organs and tissues (brain, thymus and pineal glands, spleen, gastrointestinal tract, etc).

Our research is based on the promise that administering certain types of peptides to the body facilitates restoration of specific organ and tissue functions, suppressed due to pathological processes or aging. In other words, peptides — sometimes referred to as “cytomedines” — are biological correctors of bodily functions, that can be used to in prevention and treatment of various diseases and pathological conditions.

Our focus is on development of immunomodulatory agents, anti-inflammatory drugs and indirect action drugs able to inhibit bacterial and viral infections, treat influenza, acute respiratory diseases and inflammatory processes, immunomodulation therapy and reproductive health restoration.

Induced Cell Signaling



Did you ever hear the words – you are what you eat?

The efficacy of our Cytomedicines has been proven through clinical trials and clearly proves that specific peptides extracted from various animal organs and tissues (brain, thymus, pineal glands, spleen, gastrointestinal tract, liver , etc.) facilitate restoration of specific tissue and organ functions that are often suppressed due to pathological process of aging or other pathogens.

Following on the success of the Cytomedicines, Vamos further engaged in research and development of additional technologies focused on self-healing. Instead of administering cytomedicines in the human body to activate organ and tissue regeneration, this technology promotes the secretion of the specific cell signals (cytomedicines) by the human body itself.

In this area, we have already achieved significant advances in treatment of macular generation, retina pigmentosa, liver, kidney and heart tissue regeneration and repair, restoration of the functions of the central nervous system after stroke or other injuries, allergies, Autism, Parkinson's, Alzheimer's, muscular dystrophy, ASL/MND, Anemia, Arthritis, Cerebral Palsy, erectile dysfunction, diabetes, and other diseases caused by tissue degeneration.

THANK YOU



VAMOS BIOTECH (SHANGHAI) CO., LTD

2F, Building #5, Lin Gang Fengxian Industrial Park,
1800 Xin Yang Road, Feng Xian District,
Shanghai 201413, P.R. China

Tel: +86 213 712 3366

Email: info@vamos-biotech.com

www.vamos-biotech.com

