UniPharma Group

DISTRIBUTING MEDICAL INNOVATIONS

FOR WOUND CARE PRODUCTS

UniPharma Group

INTRODUCING

PATHELEN® WOUNDPOWDER

PATHELEN® Hybrid

A NEW INNOVATIVE DIMENSION OF OPEN WOUND TREATMENT

Naturally Safe and Effective

A refined blend of European Medicine Agency Class I approved medical device (CE)

Nigerian NAFDAC Licensed Class I Medical Device 03-6974

Ghana FDA Licensed Class I Medical Device FDA/D.19-3044

Swiss Made

very fast acting

No known side effects

No known cytotoxicity

(not toxic to cells)

No systemic absorption
(not absorbed into the body)

Very Safe.

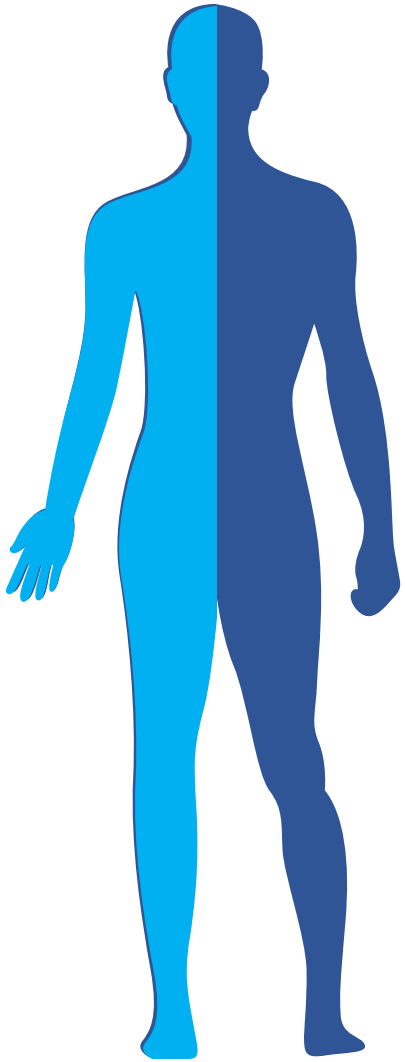
Can safely be used on all populations including pregnant women and new-borns

Can also be used as effectively on animals

pure and natural ingredients

antimicrobial-resistant safe

Pathelen Woundpowder and Pathelen Hybrid are the same product
Pathelen is sold as Pathelen Woundpowder in Ghana & Nigeria only



Based on a highly dispersed silicas that have high adsorptive, anti-inflammatory properties and supports the healing process

Eliminates the Biofilm

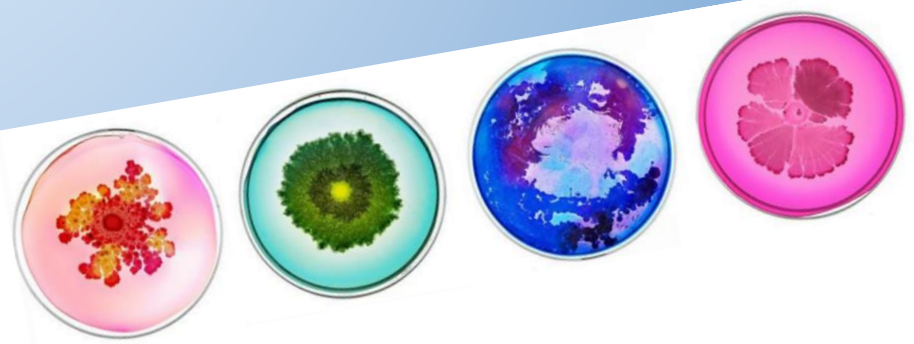
Can be used in different fields of practical medicine for the treatment of diseases

Affinity of proteins in comparison to antibiotics
gives a unique healing effect by agglutinating (clump together) microorganisms which have protein molecules on the surface

Proven by factual and strong evidence, licenses and personal testimonials

Highly accelerated healing time and dressing does not stick to wound
eliminates most bacterial and fungal wound infections **within an average 5-10 days**

“Our mission is to help solve the issue of anti-microbial resistance in open wounds, prevent suffering, treat patients rapidly, effectively and cheaply and save millions of lives in Africa and globally”.



Antimicrobial Resistance (AMR) has become one of 'the biggest threats to global health' and endangers other major priorities, such as human development.

Global leaders met at the **United Nations General Assembly** in New York in September 2016 to commit to fighting antimicrobial resistance together. This was only the **fourth time in the history of the UN** that a health topic was discussed at the General Assembly (HIV, noncommunicable diseases, and Ebola were the others).

Reuters issued a study report on 'Surgery death Rates in Africa is twice the global average' in January 2018.

It showed about **one in five surgery patients** developed a complication. Comparisons with international data for elective surgery showed that death rates from elective surgery were **1 percent in Africa** compared with **0.5 percent for the global** average.

Infections accounted for more than half of complications. The most common procedure was caesarean delivery.

AMR Problem

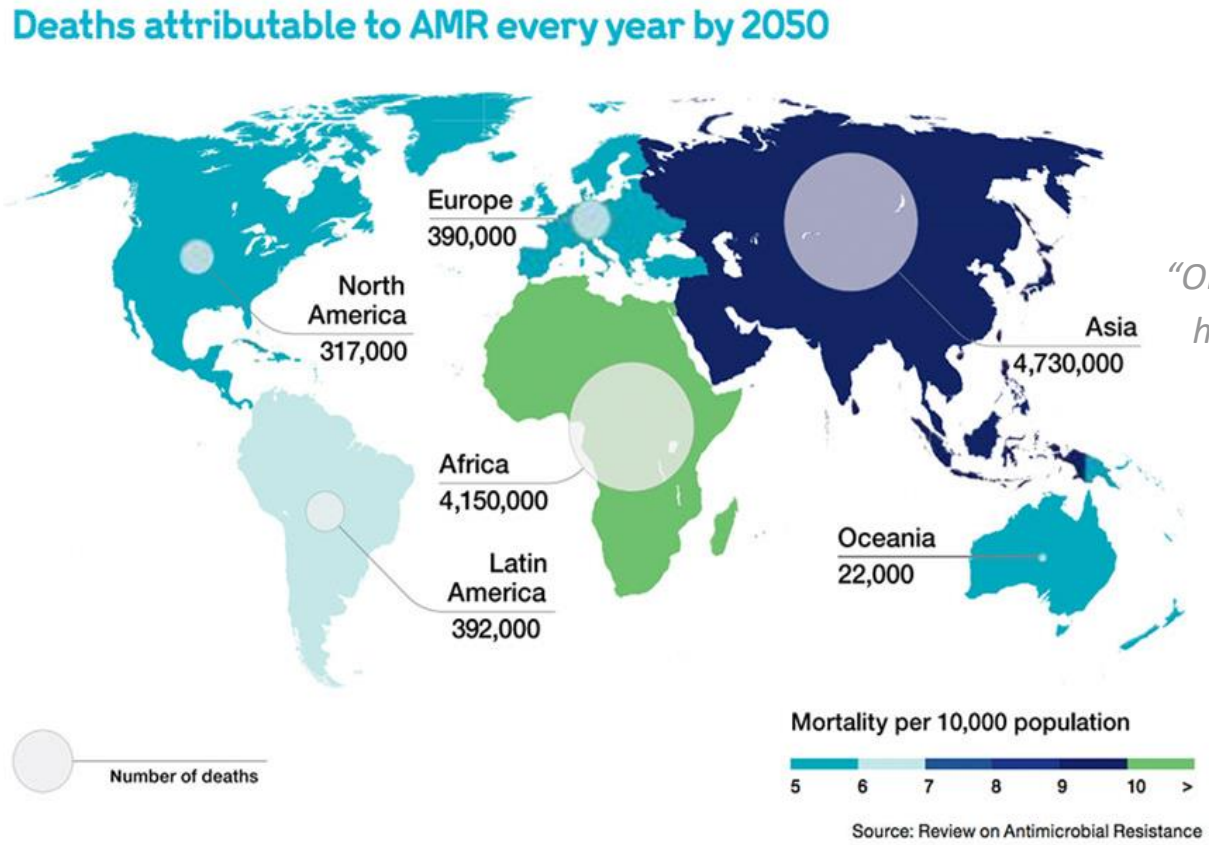
World Health Organization

*"Forecasted to become the **biggest global killer** by 2035."*

"The level of resistance to commonly prescribed antibiotics is significant in Africa and growing rapidly."

THOMSON REUTERS

"Surgery death Rates in Africa are twice the global average. **One in five surgery patients** develop a complication."



UNITED NATIONS

*"One of the **biggest threats** to global health and human development."*

Works very Effectively

COMING SOON – Pahelen Gel (will effectively work to protect the wound, once the biofilm has been eliminated and granulating tissue has formed)

- MRSA / MDR / ESBL and multi-resistant gram-negative bacteria
- Infected burn surfaces
- Noma
- Diabetic/neuropathic ulcers
- Exudating Wounds
- Stops Bleeding almost instantly
- Wounds with resistant nuclei
- Fungating, cancerous or malignant lesions and wounds with necrotic tissue
- Post-operative wounds
- Traumatic Wounds
- Any open wounds with biofilm
- Elephantiasis open wounds

Pathelen works most efficiently, when a biofilm is present on the wound

The most typical problems of patients with these wounds are:

- Rapid destruction of tissues
- Slow detersion of a wound
- Increase of infectious and inflammatory process (SIRS, sepsis)

The unique effect of Pathelen is achieved through various simultaneous complex mechanisms of :

- **Removal of the biofilm**
- Elimination of all germs in the wound
- Sorption of wound exudate
- Preparation of a physiological wound environment with granulating tissue
- Protect the wound against new germs

Eliminates the need for detoxification and systemic antibiotic therapy, even in cases of multi-preparation resistant wound microflora.

Solving a National Problem

Benefits

Takes a lot of pressure off any health systems

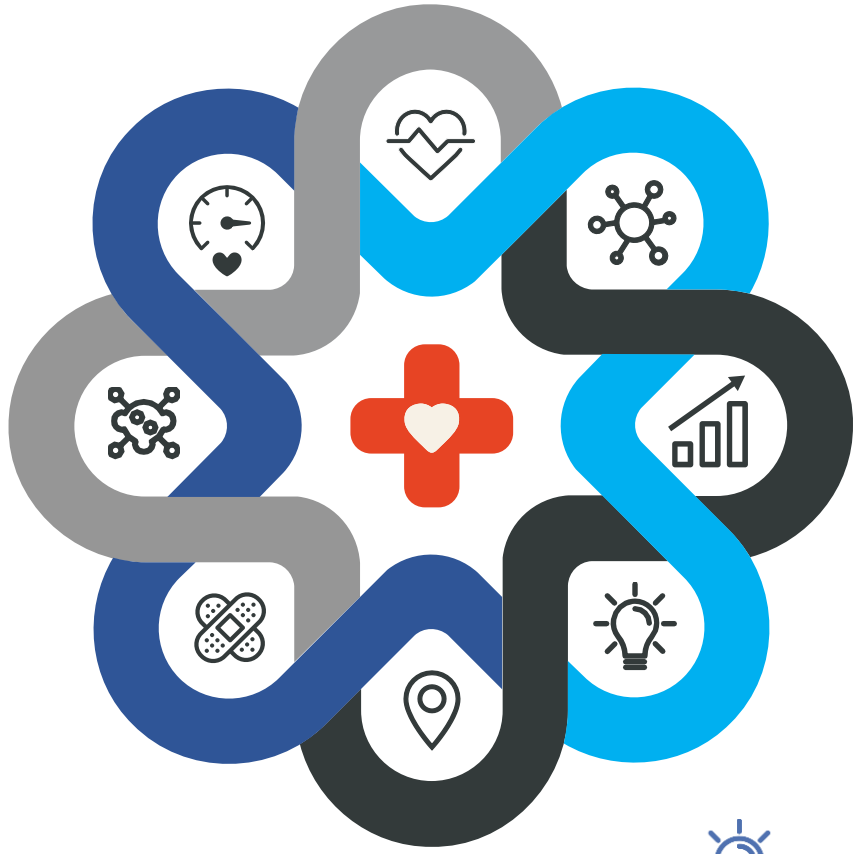
Can be use in remote locations preventing high death rates through infections

High amount prevention of amputations and other long-term issues with infections on chronic wounds

Substantially reduces death rates caused by infections throughout the region

Considerably reduces operations caused by chronic wound infections

Reduces the impact to the economy by considerably reducing illness and death rates benefiting social aspects



Considerably reduce post-op infections

Considerably less training and staff cost due to low skill application

TREATMENT & PREVENTION, YOUR FIRST LINE OF DEFENCE

Reduces
Treatment time
Hospital time
Treatment product use
Loss of lives
Loss of limbs

Reduces
Need of home care time
Absence from work
Social isolation
Economical impact
Therapy time

SUBSTANTIAL COST SAVINGS

ALL POST OPERATIVE WOUNDS

ATHLETES FOOD
YEAST INFECTIONS
ACNE
INFECTIOUS DIARRHOEA
VAGINITIS
GANGRENE

PATHELEN® Hybrid

PREVENTION

Infection prevention

Infection treatment

TREATMENT

TRAUMATIC WOUNDS
BURN WOUNDS
EXUDATING WOUNDS
CHRONIC WOUNDS

MRSA/ MDR /ESBL
STAPHYLOCOCUS AUREUS
NOMA
FUNGATING, CANEROUS AND MALIGNANT LEGIONS
CHRONIC PRESSURE, VENOUS LEG & DIABETICULCERS
INFLAMMATORY DISEASES OF THE UTERUS & UTERINE ADNEXA

Antibiotic resistance is one of the biggest threats to global health, food security, and development today.

A growing number of infections – such as wound infection, gonorrhea, and salmonellosis – are becoming harder to treat as the antibiotics used to treat them become less effective.

Antibiotic resistance can affect anyone, of any age, in any country.

Antibiotic resistance occurs naturally, but misuse of antibiotics in humans and animals is accelerating the process.

Antibiotic resistance leads to longer hospital stays, higher medical costs and increased mortality.

A far more **effective** replacement for all other currently available antimicrobial wound treatment devices

Ingredients

Ingredients	%	FDA-CODE	CAS No	Function
Aerosil 300Pharma	64%	A2C	7631-86-9	Active Substance
Aerosil R972 Pharma	35.9%		68 611-44-9	Active Substance
Benzalkonium Chloride	0.1%		63449-41-2	Surfactant

Ingredients Description

Aerosil 300 Pharma	Is a high purity amorphous anhydrous colloidal silicon dioxide for use in pharmaceutical products (tested according to USP/NF, Ph Eur. Monograph 0434 and JP). Applications: Pharmacy, especially solid dosage form and emulsion Properties: ◆ Used as viscosity increasing agent to thicken and thixotropize liquids ◆ Improves storage and temperature stability of semi-solid and liquid dosage forms ◆ Improves distribution of active pharmaceutical ingredients ◆ Desiccant for moisture-sensitive actives ◆ Free flow and anti-caking agent to improve powder properties
Aerosil R972 Pharma	Is a high purity, amorphous, anhydrous, hydrophobic colloidal silica for use as an excipient in pharmaceutical products (tested according to Ph. Eur. And USP/NF monographs) *Application:* Pharmacy, especially semi-solid and liquid dosage form *Properties:* ◆ Glidant for improving powder flow, especially suitable for very hygroscopic and / or cohesive powders ◆ Viscosity adjuster for thickening of non-polar pharmaceutical oils ◆ Stabilizer for water in oil (w/O) emulsion ◆ May be used to adjust release behaviour of active ingredients
Benzalkonium Chloride	Also known as BZK, BKC, BAK, BAC, alkyldimethylbenzylammonium chloride and ADBAC, is a type of cationic surfactant. It is an organic salt classified as a quaternary ammonium compound. It has three main categories of use: as a biocide, a cationic surfactant, and as a phase transfer agent

Eliminates the shortcoming of other products by creating

- a universal **hydrophilic-hydrophobic** composition with highly sorptive and detoxifying effect
  - hydrophobic molecules and surfaces repel water.
  - hydrophilic molecule or portion of a molecule is one whose interactions with water and other polar substances.

Accessible

- Pathelen can be administered **without the need for specialist training**.
- Pathelen can be used in **remote locations** where healthcare provision may be sparse.
- Pathelen can be **stored easily**.

Pathelen ® significantly reduces the quantity of infectious complications of pressure ulcers including

bacteremia

sepsis

abscesses

PATHELEN®

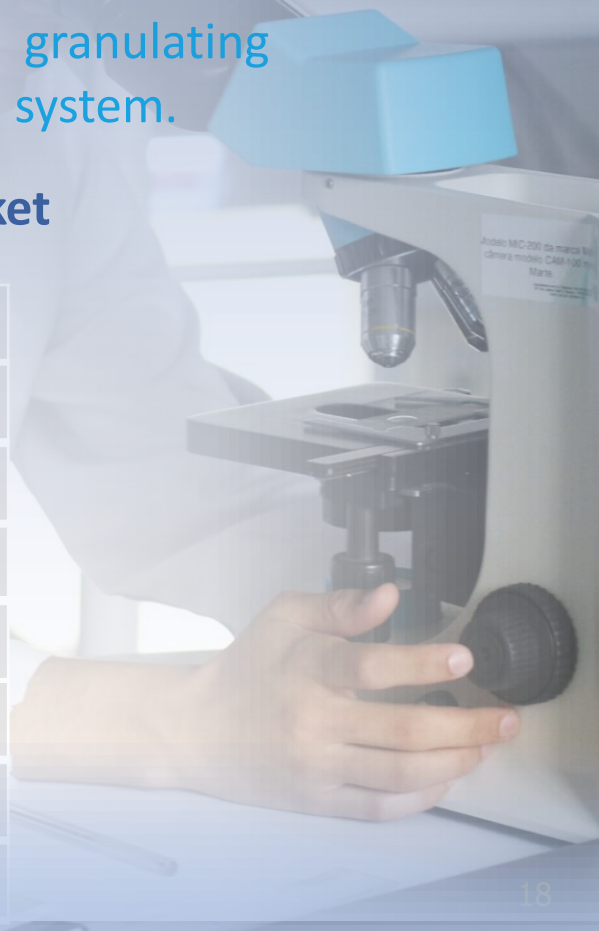
Your first line of defence against infection

Competition

Although PATHELEN WOUND POWDER is a powder, it has completely different properties comparing to all wound powders available on the market. When Pathelen comes into contact with the wound exudate, it transforms into a gel like substance.

An ordinary wound gel only creates a moist wound environment, but does not eliminate enough bacteria and biofilms to ensure a fast healing process or a wound healing at all.

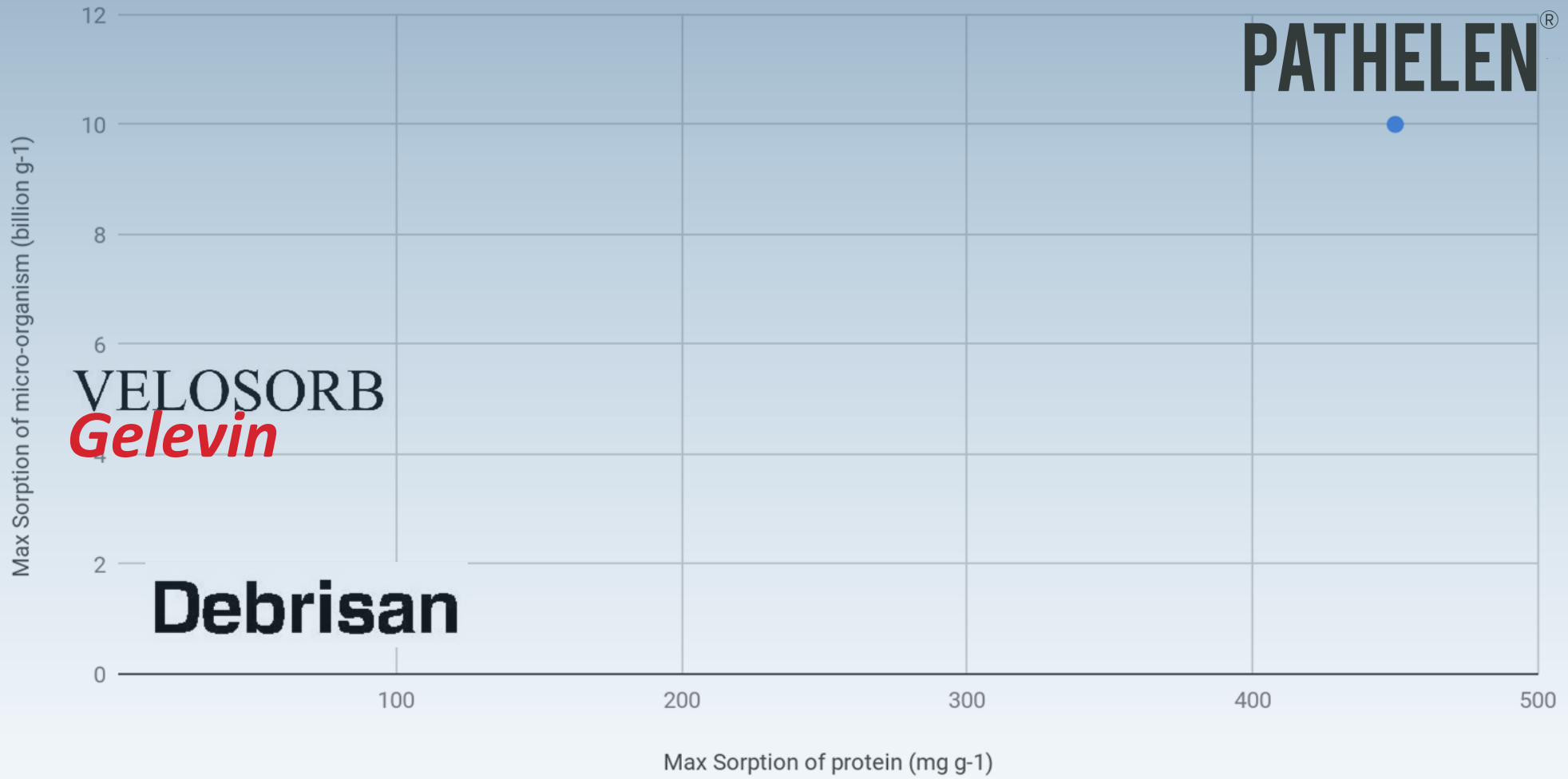
PATHELEN creates a germ-free wound with granulating tissue independent of the state of the immune system.



Comparison of Pathelen properties and typical wound gels/powders on the market

	PATHELEN	OTHER PRODUCTS
Sorption of protein, mg g-1	up to 800	No sorption possible
Sorption of microorganisms, billion g-1	Up to 10.0	No sorption possible
Osmotic activity in %	377	0.00
Moist wound environment	yes	yes
Wound protection	yes	yes
Adsorption of wound exudate	yes	no
Removal of biofilm	yes	no

Competition



1) - **450**mg g-1 sorption of protein

2) - **10 billion** g-1 sorption of micro-organisms

6.4 x more effective than closest competitor!

3rd Degree Burn (25% of body) Case Studies in 2019

Competition

VS

$1,799
18 days

$4,040
54 days

55% overall cost saving
66% faster recovery

The Treatment

- Debridement of wound surface by surgery
- Intravenous (IV) electrolyte fluid
- Pain medication
- Ongoing medical labour
- Daily bed cost
- Skin grafting (after 5 days of treatment)
- Aftercare

Reasons for Cost Saving

- Fewer applications per patient required
- High effectiveness means patients heal more quickly
- Fewer complications mean patient turnover is rapid

Source - Department: Intensive care unit: I.C.U, General Surgery Department: G.S.D, Ukraine

Case Study
Pathelen Application Process

Solution

MRSA infected ulcer on 65 year old male

Step 1

Remove any bandages, plasters etc.

Step 2

Apply antiseptic

Step 3

Dry the wound surface with sterile gauze

Step 4

Shake the 50 ml bottle for 10 seconds (the powder will grow in density)

Step 5

Apply Pathelen® in a uniform layer with a thickness of 3 to 5 mm.

Step 6

Add further treatment following point 1 to 5 after 24 hours

5 days later

Infection eliminated. Terminate treatment and continue with recovery

55 days later...rapid post surgery recovery.

...and Pathelen is versatile in application:

powder or gel

irrigation using suspension form

oral use in liquid or tablet form;

intraurethral (through urethra) insertion

Case Study Examples

Patient: Oleg L., 73 y.o.

Disease history:

Diabetes mellitus – sickness duration 12 years.

Carbuncle of interscapular region – sickness duration 8 days.

Local treatment:

- Debridement of wound surface by surgical removal
- Debridement of wound surface by Pathelen®
- 5 days after surgery– granulated tissues.
- After 10 days – full recovery.

Patient: Anonymous, 55 y.o.

Injury:

Diagnosis : Avulsion injury of the right side of face. Injury resulted in the loss of tissue on the right side of face. There was complete loss of cheek tissue as the cheek wound communicated with the oral mucosa.

Wounds were required to granulate and or were required to heal by secondary intention with epithelialization.

Local treatment:

Selected wounds were thoroughly cleaned with Savlon and copiously irrigated with saline. Pathelen was applied to the wound. Vaseline gauze was applied to hold the Pathelen in place, dry gauze was applied, and wound was bandaged lightly with gauze bandage. Dressing was changed every 48 hours.

By day 10 of Pathelen dressings the wound had filled up with granulation tissue with remarkable wound contraction. As a result, will not require the use of a flap to cover the wound she will require a simple split thickness skin graft to cover the wound.

Case Study Examples

Patient: Mikhail Sh., 65 y.o.

Disease history:

Diagnosis : Venous trophic ulcer VI stage according to International classifier of chronical vein diseases CEAP. Disease duration 8 months. While microbiological test of the wound was infected with MRSA.

Local treatment:

- Debridement of wound surface by Pathelen®
- Debridement of wound surface by surgical removal
- Autodermoplastics

Patient: Oleg L., 73 y.o.

Disease history:

Diabetes mellitus – sickness duration 12 years.

Carbuncle of interscapular region – sickness duration 8 days.

Local treatment:

- Debridement of wound surface by surgical removal
- Debridement of wound surface by Pathelen®
- 5 days after surgery– granulated tissues.
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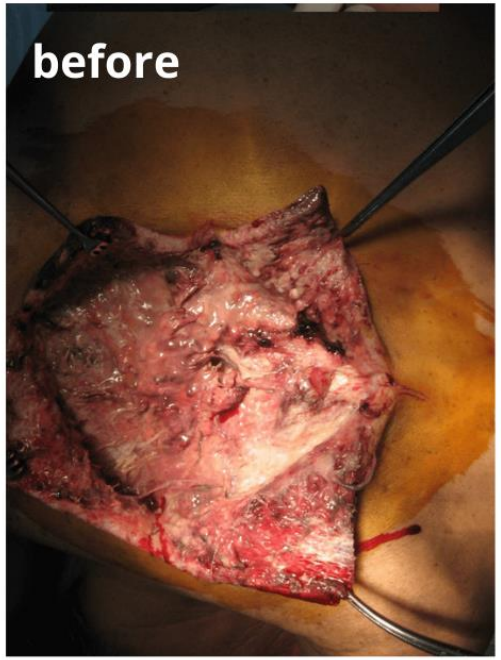

Case Study Examples

Patient: Vasiliy S., 69 y.o.

Disease history:

Hypopharynx cancer metastasis and neck lymph nodes on the right.

1 year ago - laryngectomy with resection of the hypopharynx. After surgery – course of radiation therapy.

On 4th day after the surgery:

- Massive post-surgery lymphorrhea - MRSA-infected wound

- Necrosis of skin patches: defect of skin 8x10 cm - Denudation of carotid artery in the wound

Treatment:

Debridement of wound surface by surgical removal and Pathelen®, autodermoplastics.

Patient: Oleksii T., 41 y.o.

Disease history:

Acute rotten pelviorectal abscess. Diabetes mellitus for 2 years.

Hospitalized after 7 days the disease has begun. Leucocytes – 15,5 × 109/l. Sugar in blood – 8,0 mmol/l

Local treatment:

Necrectomy by Pathelen® Debridement of wound surface by surgical removal and Pathelen®, autodermoplastics.

INFECTION PREVENTION

- Burn Wounds
- Traumatic Wounds
- Exudating Wounds
- Post-Operative Wounds

INFECTION TREATMENT

- Chronic Pressure, Venous Leg and Diabetic/Neuropathic Ulcers
- Chronic Wounds
- Staphylococus Aureus
- Noma
- Inflammatory diseases of the uterus and uterine adnexa
- Fungating, cancerous or malignant lesions
- MRSA / MDR / ESBL and multi-resistant gram-negative bacteria
- Exudating Wounds

PATHELEN® HYBRID

- Removal of the biofilm
- Elimination of germs in the wound
- Adsorption of wound exudate
- Cleaning the wound from necrosis and pus
- Obstruct penetration of bacteria into the tissues
- Dressing does not stick to wound
- Very fast and easier removal of bacteria from the wound due to block of adhesion active centres
- Decrease of exotoxins production
- Heals the wound and considerably decreases infection

Follow on Treatment once tissue granulated

PATHELEN® GEL

- Seals the wound
- Protection of the wound against new germs
- Stops Bleeding
- Can be used intravenously for internal infection in the cavities
- Speeds up the healing process
- Can be used in different fields of practical medicine for the treatment of wounds

Complete Pathelen Therapy*

The future of effective wound treatment

*(Pathelen Gel in final registration stage)

Based on highly dispersed silicas and polymethylsiloxane that have high adsorptive, anti-inflammatory and wound-healing properties

- Affinity of proteins in comparison to antibiotics
- Highly accelerated healing time (granulated tissue develops on average within 5 to 10 days)
- Proven by factual and strong evidence, licenses and personal testimonials
- Can be administered without specialist training

Bacteria can't develop resistance | **Easy to store** | **Highly Effective** | **Works very fast** | **Does not enter the blood circulation** | **Safe - Has no known side effects**

Counterfeit Safety

Pathelen contains a unique patented formula, which when shaken for 15-20 seconds, will grow visibly in density by more then 20 times, creating the advanced sorption property and filling the bottle content .

This change is clearly visible inside the bottle.

THIS REACTION CAN NOT BE COPIED!

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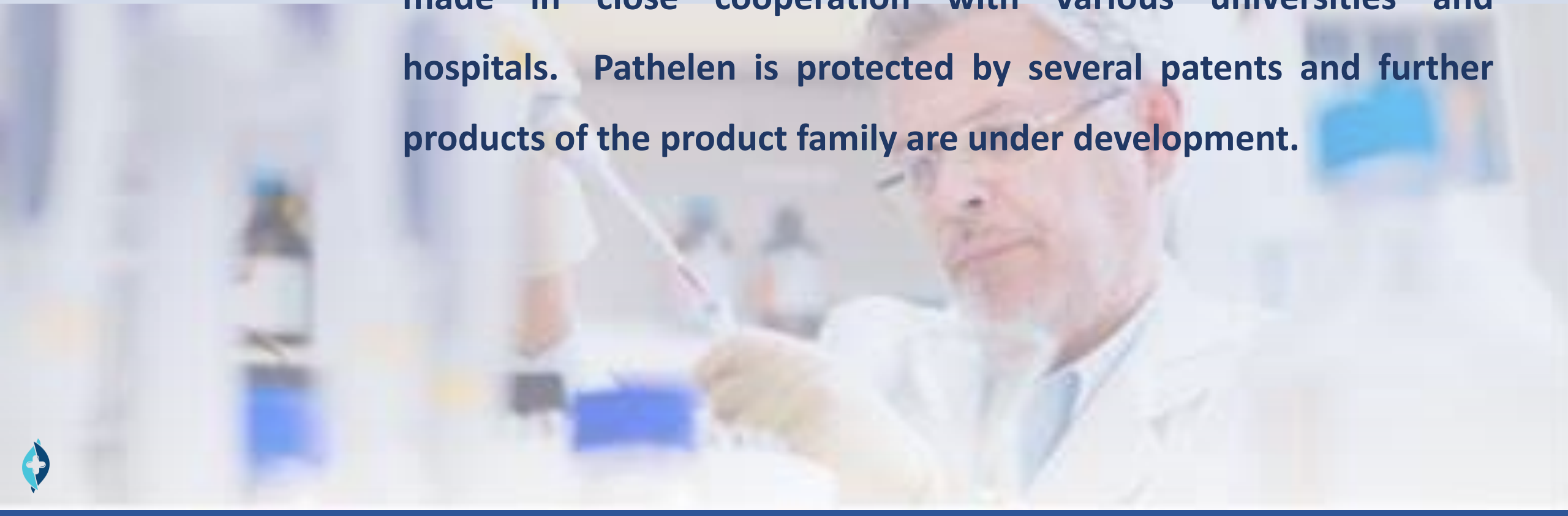
Pathelen is a development of Pathelen Health Care AG Switzerland.

Led by the chief scientist and CEO, Andreas Tausch, the company has developed Pathelen over several years. The development was made in close cooperation with various universities and hospitals. Pathelen is protected by several patents and further products of the product family are under development.



COULD YOU IMAGINE A WORLD WITHOUT PATHELEN?

UniPharma Group

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DISTRIBUTING MEDICAL INNOVATIONS FOR WOUND CARE PRODUCTS

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