



## Immunomodulatory of Homeopathic Drug *Zincum Mettalicum*

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### ABSTRACT

*Zincum mettalicum* contains Zinc, which is a member of the magnesium family of metals. Brass is often made by combining it with copper. Iron and steel are frequently coated with zinc to stop corrosion. Batteries are its primary industrial application. It dissolves in bases and acids and functions as a reducing agent. Ointments containing zinc have been used to prevent skin eruptions for hundreds of years. Clark describes in detail the symptoms of the poisoning that cows grazing next to a zinc smelter experienced, such as emaciation, the pulling back of the eyes into their orbits, drying out of the milk, and ultimately death from complete prostration. Feeling and purpose Feeling: attacked. Additionally, zinc (Zn) caused chlorosis, decreased the amount of total chlorophyll and/or carotenoid content, and elevated malondialdehyde (MDA). A clinical data gathered in the 20<sup>th</sup> century surrounds layers of clinical observations documented over time in the current body of knowledge about zinc met. We gave lesser-known sources—especially those that have never been translated from the original German—priority in the description.

**Keywords:** *Zincum mettalicum*, Ointments, zinc, malondialdehyde, prostration.

### Introduction

A thorough search of the literature was conducted using PubMed, Google Scholar, and Scopus articles as sources. Homeopathic *Zincum metallicum* (ZM) is a medication that treats a wide range of illnesses in addition to bolstering the immune system. One type of traditional medicine that relies on the idea that the body is capable of healing itself is homeopathy. The homeopathic medical system employs a comprehensive approach that relies on the individualization of treatment to select the most appropriate general remedy for each patient. In order to heal holistically, the patient's physical, mental, emotional, and spiritual well-being must all be in balance. The WHO stated that over 100 countries worldwide accept homeopathic treatments, as the majority of Indians rely on homeopathy for their medical needs. Germany was the birthplace of homeopathy. Small quantities of natural substances derived from plants and minerals are used to make homeopathic medications. Homeopathic medications have an epigenetic effect because they have the ability to alter intracellular signaling pathways. Minerals and vitamins are necessary for the human body to operate at its best. One of the most important minerals for life is zinc. While excessive zinc intake is not required for proper cell function, zinc deficiencies can result in a number of diseases and functional problems. In life, zinc is mostly involved. It facilitates cell division, boosts immune system function, supports mobile features, and encourages cell growth.

Numerous diseases have been found to have oxidative stress as their primary cause.

*Zincum metallicum*, which is mentioned in homeopathic medicinal materials, can be regarded as a therapeutic intermediary.



Figure 1: Picture of *Zincum mettalicum* plant

## Cultivation

*L. sativum* seeds were gathered from the Djerba region (33° 48' 27.353" N, 10° 50' 42.529" E). Two sheets of filter paper soaked in distilled water were placed in Petri dishes with seeds, which were then cleaned and allowed to germinate. After five days of germination, seedlings were moved into plastic pots filled with 1.3 liters of fresh, aerated Hoagland nutrient solution, which was quarter-strength (Hoagland and Arnon 1940). The plant culture was kept at 22°C, with an 8-hour photoperiod every day, and an 86% relative humidity in a growth chamber. Individual plants were exposed to zinc at concentrations of 0.05 (control), 0.5, 1, 1.5, and 2 mM in the form of ZnSO<sub>4</sub>, added or not, and for seven days prior to the experiment, two concentrations of *Zincum metallicum* (ZM).



Figure 2: Picture of *Zincum metallicum* plant.

## Characteristic Action

Fran made his own homeopathic pathogenic spores in the beginning to study *Zincum metallicum*'s pathogenic properties. He carried out HPT using the drug's 1c trituration. This is *Zincum metallicum*'s characteristic action, per Franz's pathogenic report.

- A growing headache that starts after lunch.
- Complaints of inflammatory eyes.
- Crying and depicting suffering.
- Complaints of spasmodic throat.
- Burning pain in the abdomen, radiating to the right, navel, and upper abdomen.
- A series of chest pains and pressure in the ears.
- Flatulence and renal pain. Hands that are numb and shoulder blade rheumatism.
- Renching and persistent discomfort in the thighs and foot joints.
- Skin lesions and lichens

## Medicinal Uses

In homeopathy, zinc metallicum is used to treat patients with disorders of the central nervous system. Oxidative stress plays a role in the pathogenesis of Parkinson's disease, a significant neurodegenerative disease. Because of its anti-free radical and antioxidant qualities, *Zincum metallicum* may be suggested as a Parkinson's disease treatment. Wound healing is aided by *Zincum metallicum*. Micronutrient zinc is essential to human physiology and is required as a cofactor for immune system function, cell growth, membrane repair, and proliferation. Zinc, along with other antioxidant nutrients, provides health benefits for burn patients. Zinc negatively regulates the expression of inflammatory cytokine genes that generate reactive oxygen species (ROS). This is an additional mechanism of zinc acting as an antioxidant. Zinc modulates platelet activity by acting as an intracellular messenger or by interacting and Patients suffering from burns can benefit from the health benefits of zinc and other antioxidant nutrients. Reactive oxygen species (ROS)-producing

inflammatory cytokine genes are negatively regulated by zinc. This is an extra way that zinc functions as an antioxidant. Zinc either functions as an intracellular messenger or interacts with membrane receptors to modify their activity, which in turn affects platelet activity. Zinc modulates platelet function and may play a role in the formation of thrombi. *Zincum metallicum* is a homeopathic remedy that is suggested for wound healing because zinc is its primary constituent impacting the membrane receptors' activity. Zinc modulates platelet function and may play a role in the formation of thrombi. *Zincum metallicum* is a homeopathic remedy that is suggested for wound healing because zinc is its primary constituent. Focal arterial damage is a hallmark of atherosclerosis, a chronic inflammatory disease that can cause myocardial infarction or abrupt death. Studies have demonstrated that zinc lowers atherosclerotic inflammatory markers. *Zincum metallicum* can be used to screen for atherosclerosis because zinc has an atherosclerotic function. *Zincum metallicum* is useful in the management of cirrhosis of the liver. Zinc is regarded as a significant enzymatic component that is involved in metabolic processes and the immune system. Thirty patients with liver cirrhosis and ten with chronic aggressive hepatitis participated in the study. After receiving *Zincum metallicum* CH5 treatment for a month, the patient's liver cirrhosis improved and his or her serum immunoglobulin G and M levels returned to normal.

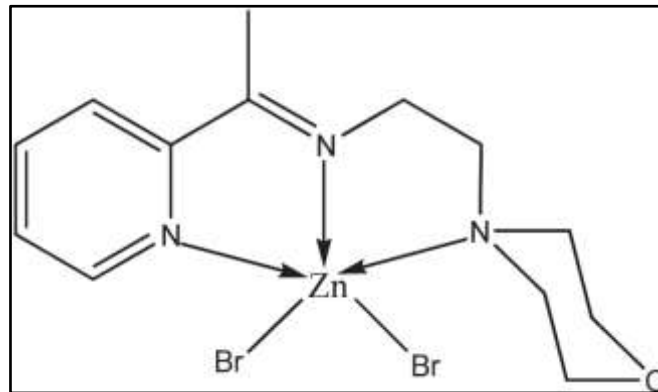


Figure 3: Chemical structure of *Zincum mettalicum*.

### Extraction of *Zincum mettalicum*

For two weeks, the roots and leaves were left to air dry at room temperature. Sample extracts were made by magnetically agitating 1 g of dry powder per sample in 80% methanol (10 ml) for 30 minutes, then storing the mixture at 4 °C for another 24 hours. After being filtered through Whatman filter paper (N<sup>o</sup>.4), the resulting methanolic extracts were kept cold, at 4 °C. According to Dewanto et al. (2002), colorimetric quantification of the total phenolic compound was carried out using the Foline-Ciocalteu reagent. In summary, a 125 µl aliquot of diluted 1/10. A sample from every methanolic extract was combined with 125 µl of Folin-Ciocalteu Page 6/21 reagent and 500 µl of distilled water. Following a 3-minute period of shaking and resting the mixture, 1250 µl of 7% Na<sub>2</sub>CO<sub>3</sub> was added, and the mixture's final volume was brought down to 3 ml using distilled water. After that, the mixture was left to sit at room temperature in the dark for ninety minutes. Using the gallic acid calibration curve, the absorbance was measured at 760 nm, and the total phenolic compound was expressed as milligram gallic acid equivalent per gram of dry weight (mg GAE g<sup>-1</sup> DW).



Figure 4: Crude extract of *Zincum mettalicum*.

## Case Reports

One effective treatment for intermittent claudication is zincum metallicum. A study involving sixty patients with vascular claudication was split into two groups. One group used homeopathic remedies such as zinc metallicum, hypericum, and Arnica montana. The other group was treated with medication. Results indicated that the group receiving homeopathic treatment fared better than the group receiving pharmaceutical treatment. As a result, there aren't many other case studies from homeopathic physicians that suggest Zincum metallicum is a viable remedy that treats a range of illnesses.

Complaint	Age (years)	Gender	Duration of medication for recovery
Prostration, weakness, loss of appetite	20	Female	Twice in two hours
Gonorrhoea	40	Male	5 days
Head ache	40	Female	1 week
Burning, itching and stinging sensation of eyes	–	–	6 months
Motionless and bluish red skin all over the body	–	–	Until recovery
Muddled feeling by typhoid and Hippocratic appearance	–	Male	Until recovery
Atopic dermatitis	2	Male	Until recovery
Polycystic ovarian syndrome	23	Female	Three months
Hypothyroidism	53	Female	Until recovery
Restlessness due to anxiety and depression	35	Female	Three months
Migraine	36	Male	5 years
Migraine	52	Female	Until recovery
Multiple sclerosis	33	Female	3 years
Migraine	32	Female	6 months
Infection with Demodexfolliculorumin	28	Female	6 weeks
Acne rosacea with polycystic ovarian syndrome	38	Female	Three months
Acne rosacea	45	Female	Three months
Psoriasis	40	Female	6 months
Pruiritus sine material	32	Female	3 years
Anxiety and restlessness	36	Female	3 weeks
Constipation	6	Male	Until recovery
Delayed teething	7	Male	Single dose
Sciatica and migraine	57	Female	6 years
Paranoid personality disorder	42	Male	2 years
Hydrocephalus in pregnancy	–	Female	Until birth of baby

Table 1: Case reports of patients treated with *Zincum metallicum*

## Characteristic Action of Zinc

- According to Franz, the typical action of Zinc met is as follows: \_ Headache, which is more like tearing and stitching in the lateral parts and tends to get worse after lunch; on the other hand, the pain in the forehead and occipital region (the middle of the brain) is more like pressing and dragging; the former is more like secondary or consensual (following complaints of the lower abdomen), while the latter is more like primary and alters other prior or concurrent complaints (such as limb pain, a feeling of lameness).
- Eye inflammation complaints, with a pressing, stinging, itchy sensation, especially on the eyelids.
- A rheumatic pressure in the ears accompanied by tumors in the external ears and torn stitches.
- kinds of toothaches that drag and tear.
- Spasmodic throat complaints.
- Abdominal complaints include burning stomachaches, clamping pain in the upper abdomen and hypochondria, navel pain, flatulence, and colic at different times, but the right side of the abdomen is always fixed with pain.

- Kidney pain and Flatulence - A range of chest complaints (caused by rheumatism and suppressed exanthemata? Consumption?); anxiety and oppression in the middle of the chest and upper and lower sternum; mainly stitches on the left side of the chest, along with a complex pressure and occasionally burning; more oppression on the right side of the chest, sometimes with burning. The quantity of these symptoms suggests that zinc and the chest are closely related.
- The term "rheumatic pain" refers to pain in the scapula, neck, and upper limbs in particular; it also describes deltoid muscle, which is less common in the forearms but more common in the wrists, back, and flexors of the fingers, as well as along the metacarpal joints, fingers, tips, and fingers. Moreover, there is a comparable relationship with the lower limbs: from the gluteal region down, there is tearing and dragging pain in the thighs, less so in the knees and shinbone; this pain is especially felt in the foot joints, causing sprains and tears; there is also tearing pain in the foot bones, heels, and Achilles tendon; there is stitching pain in the toes, accompanied by a sensation of lethargy, heaviness
- Numerous skin conditions, spots, and lichenous ulcers, particularly lichen after a protracted and difficult itch (some complaints resulting from the suppression of skin disorders). Some claim that a specific characteristic of zinc is the predominance of the left side in some people, the right side in others, or a more frequent alternating of the sides, as well as the aggravation and even more the reappearance of past complaints due to wine consumption, as both Mr. Reg. v. Gersdorf (sic) and I noted. Additionally, the fact that its symptoms often manifest at midday, after lunch, and in the evening helps to set it apart from other homeopathic remedies while also drawing comparisons. Further observations and research regarding its association with age and gender, in addition to its potent.

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## Discussion

A homeopathic remedy can treat a patient's entire psycho-neuroendocrine system in addition to the disease itself. The origin of all other forms of medicine is ethnomedicine, a conventional medical discipline. Traditional medicine is becoming more and more prevalent globally. Given that the majority of people living in rural areas rely on herbal remedies, the government ought to start supplying traditional medicine to primary healthcare facilities. The use of natural biosources is fundamental to conventional medicine. Finding the medicinal plants that traditional healers use should be a top priority when it comes to properly documenting traditional medical practices. Additionally, scientific studies on medicinal plants and a conventional method that aids in the creation of novel products are needed. The way that people see conventional medicine is evolving. Research has been done to find out how people feel about homeopathy. According to these studies, homeopathy is the most widely used traditional medicine in the healthcare system. The Indian traditional medical system, which includes homeopathy, naturopathy, yoga, Siddha, and Ayurveda, is largely responsible for the high level of immunity. Traditional medicine gives people a strong immune system that helps them fight off viruses like corona and the flu. The working field of *Zincum metallicum* is very characteristic. Few cases describing the effects of *Zincum metallicum* have been published, despite the fact that zinc is used in traditional medicine.

Homeopathic medications have an epigenetic effect because they have the ability to alter intracellular signaling pathways. Ailments linked to a lifestyle can also be treated with homeopathy. Obesity and diabetes are on the rise as a result of sedentary lifestyles and poor eating habits. Occupation-related lifestyle disorders can be extremely destructive and drastically alter a person's life if they are not treated. The disease's etiology plays a significant role in determining the efficacy of treatment. With a focus on treating the full individual, homeopathy considers a patient's personality, lifestyle, genetics, medical history, and underlying causes of illness. Even with *Zincum metallicum's* vast characteristic working field, its true effect remains unclear. Women with PCOS who take zinc supplements see improvements in a number of factors linked to hormone balance, lipid balance, insulin resistance, and other factors. *Zincum metallicum* is prescribed in homeopathic medicine based on the symptoms and constitutional factors of the patient, with the belief that it has particular therapeutic qualities.

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## Conclusion

Because of its vast characteristic working field, it is challenging to ascertain the true impact of *Zincum metallicum*. Due to its significant antioxidant role in the proper operation of the reproductive systems in both men and women, zinc is essential. Even a slight zinc deficiency increases the risk of long-term metabolic problems that worsen health. Human health is maintained and improved by research on the function and regulation of zinc. From a pharmacological perspective, homeopathic treatment is invalidated because there is insufficient active ingredient and scientific validation. But before independence, India was more, and once it did, its focus shifted to its pharmacological action and efficacy.

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