

ELKOPUR 312®

Review

ELKOPUR 312® - Background, Application, Therapeutic Possibilities, and Study Results of the Medical Device ELKOPUR 312®

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ELKOPUR 312® - Background, Application, Therapeutic Possibilities, and Study Results of the Medical Device ELKOPUR 312®

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Introduction

Biological systems are highly adapted in their original ecological niches. In the course of evolution, the physiology of the individual organism (absorption, metabolism, excretion) was in an acceptable equilibrium regarding advantageous and disadvantageous material exchange with the environment and species continuity.

Within a very short time, human beings were able to effect changes with the help of science and technology, which were/are not always compatible with biological systems.

Modified eating habits (as well as alcohol consumption, nicotine, medication intake, among others) possibly lead to strains and stresses, which were not present before. The utilization of mineral pigments or additives to fuels or dental fillings increased the contact with heavy metals. In the end, neither the consumer nor the therapist know how much of the ingested food constituents and technical substances are actually reabsorbed; how the distribution within tissues, how bioavailability and bioequivalence within body cells, actually take place; and how successful metabolism with all other interactions of the body actually is performed.

The borderline between health and illness is individual and transitional.

Rudolf Virchow:

„The known wonderful ability of the body to adapt, it is at the same time setting a measure of where the limit of the disease lies. Disease begins at the time at which the regulatory apparatus of the body no longer suffices to remove the disorder.“

Mineral substances (macro and micro elements) play a special part in supporting self-regulation within the body.

Mineral substances are an integral part of the framework structure and participate in enzymes in many regulatory processes of the organism. They always find partner ions or molecules, which they transport, accumulate, or store. For the more frequent and important minerals the body has developed intrinsic regulation mechanisms for the uptake and excretion, in order to guarantee a constant and sufficient supply (homeostasis). This is however not valid for rare mineral compounds or (as measured by the evolutionary stress) their sudden occurrence in much higher concentrations (toxic). Thus vital minerals such as copper, chrome, zinc, iron, and calcium occur incorporated into enzymes (e.g. cytochrome), stored in particular proteins (e.g. haem in blood, metallothioneins in the kidney) or incorporated into quasi-solid frameworks (bone) in the human body.

Alkali ions, such as sodium, potassium, and magnesium primarily serve to regulate the extra/intra-cellular stream of fluids and osmotic processes, and are part of the acid-base balance.

Toxic and formerly rare metal ions such as cadmium, mercury, and lead compete within the body with “normal” ions and can thus incur errors.

A deficiency or dysfunction regarding mineral substances can therefore be manifested in illness symptoms respectively manifold and diffusely.

Toxins enter the human organism by food intake, air, or water, and are excreted again, but are also reabsorbed via enterohepatic circulation, and thus remain in the organism with the corresponding potential for damage.

Background Information on the Development of ELKOPUR 312®

ELKOPUR 312® has been developed to offer certain risk groups a medical device that is able to excrete toxins, which are not physiological, rapidly via digestive tract in an individual detoxification timeframe. Thereby, retention times within the metabolism can be reduced, and the self-repair mechanisms of the body can be stimulated.

ELKOPUR 312® contains a special mixture of zeolites (clinoptilolites) and smectites (montmorillonites). Both substances can be designated as so-called mineral earths. Mineral earths have been used for millenniums by aboriginal people orally and dermal for the most various therapies pre-emptively or therapeutically. Also in the animal kingdom numerous examples are found for intentional searches for very particular localities with natural occurrences of certain mineral earths.

ELKOPUR 312® is an especially prepared, sterilized 100% natural mineral earth mixture of volcanic origin with particular characteristics.

ELKOPUR 312® distinguishes itself completely from other mineral earths by **its absorbing and adsorbing properties. The adsorbing properties work about a selective cascade mechanism. Heavy metals like Pb, Cd are the first in the cascade.**

ELKOPUR 312® is authorized as a class II medical device, which means that it is subject to continuous control of independent institutions, as well as the Swiss therapeutic product authority. Mineral earth products that were authorized for the human organism are safe, and their effects scientifically proven and defined. The specific feature of **ELKOPUR 312** is its particular preparation and selection of two natural substances, which are exactly defined, safety assessed, and tested to be verifiably effective in human medicine.

ELKOPUR 312® is not taken up by the organism, has no physiological, but a purely physical mechanism of action.

ELKOPUR 312® migrates through the gastrointestinal tract without being taken-up by human metabolism.

Examples for the Administration of ELKOPUR 312®:

Amalgam Fillings:

The use of amalgam for dental fillings can lead to elevated concentrations of Hg- and Ag-ions in saliva and intestinal tract, especially in “teeth grinders” or dental restorations. A chronically elevated contamination of harmful Hg²⁺, Hg⁺, Hg⁻ organic species in the organism can lead to cell damage. (1), (2), (3)

Other Heavy Metals (Cadmium, Lead, Nickel):

Combustion residues (containing cadmium, lead), and inhalation of aerosols can lead directly to a high contamination of the body with toxic metal ions. (4)

Radioactive Isotopes/Isotope Dilution:

Even without an acute case of nuclear fall-out, such as in Chernobyl or Japan, oral intake with foods from contaminated soil/waters is relevant, since the half-lives of radioactive isotopes are beyond human timeframes, the geographical distribution is generally not confined to locality (transfer to air and water), and radioactive isotopes compete with stable isotopes (for example incorporation of strontium instead of calcium into bone structure). Until today mushrooms from Russia or other Eastern states are so highly radioactively polluted with Cs-137, that the German Association for Nutrition (DGE) recommends very infrequent ingestion.

Bio-organic Toxins, Metabolites in the Gastrointestinal Tract:

Most mycotoxins, such as e.g. aflatoxins in nuts, dried fruit, or tropical spices are dangerous in the range of micrograms and are thus invisible. Carcinogenicity of aflatoxins, or also poisonings with botulinum toxins are evident. (5) (6)

Biogenic Amines, Ammonium, Ammonia Generation:

Decomposition products from microbial metabolism of high amounts of protein taken in with foods are also considered to be jointly responsible for the generation of colorectal carcinomas. (7)

Fields of Application for ELKOPUR 312®:

- binding of toxic cations, especially lead, mercury
- interruption of enterohepatic circulation of toxic cations (“removal”)
- reduction of ammonium contamination in foods
- binding of biogenic amines (as e.g. histamines)
- binding of excretion products of organisms (bacterial toxins, mycotoxins, viruses, or virus fragments)
- support in cases of bacterial and virally induced diarrhoea

In-vitro Adsorption Study ELKOPUR 312®

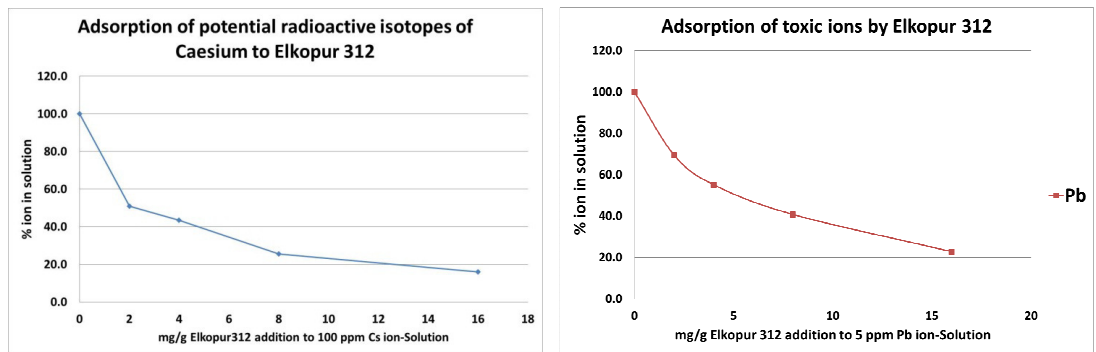
Study Design:

To a solution compatible with gastric juice with respect to pH and ionic strength (Na, K, Ma, Ca) metal ion pollutants in a concentration corresponding to natural contamination (2-100 ppm) were introduced and then variable amounts of ELKOPUR 312® were added in a concentration corresponding to about that of 1-2 capsules ELKOPUR 312® in the gastrointestinal tract. It was measured how much of the originally dissolved cations were bound by ELKOPUR 312®.

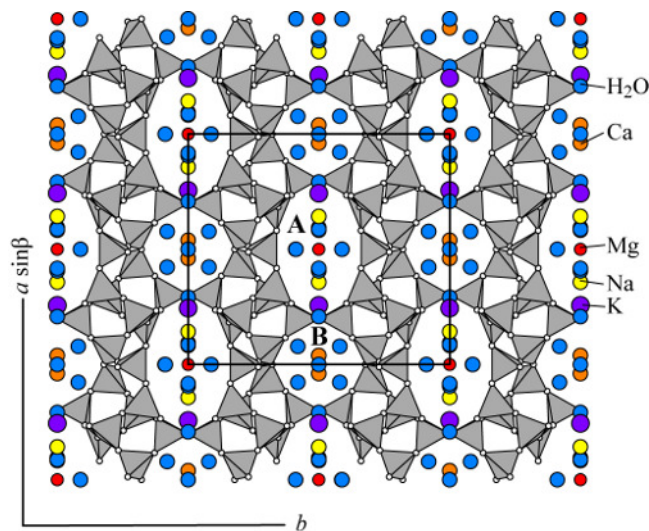
Results:

Up to 80% of lead and caesium, as well as up to 35% of the ammonium ions were selectively bound to ELKOPUR 312®. Iron was only bound to a small extent (20%), zinc and copper not at all.

Diagram (Figure: Decrease 100 ppm caesium or 5 ppm lead.



Structure of Clinoptilolite:



Clinoptilolite has 3 types of channels or cavities in a solid insoluble structure of silicon oxide, or aluminium oxide. These cavities designated in the picture as A, B, (C) contain freely movable cations - originally stored corresponding to their concentration at the time of mineral generation, which can be exchanged for other cations in aqueous solutions. Selectivity is attained on one hand by the cavity size and on the other by electrical charges.

Bibliography:

The available literature on the composition, effects, and possibilities of application of zeolites and montmorillonites comprises several 1000 scientific papers.

In animal feed, both zeolites as well as montmorillonite are already used successfully with good results for over 50 years.

For the application in human medicine there are also diverse applications and several authorized medicinal products/medicinal devices.

References (Selection):

The quoted literature is intended only as a short selection.

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Summary:

ELKOPUR 312® is a special mixture of zeolites (clinoptilolites) and smectites (montmorillonites), which means a combination of indigestible silicates that can selectively reduce toxic substances *in situ* (gastrointestinal tract).

ELKOPUR 312® originates from natural, old geological sedimentations in acceptable purity for human consumption.

ELKOPUR 312® was developed to offer certain groups at risk a medical device, which has a “detoxifying” function without physiological effect on human metabolism.

ELKOPUR 312® is able and makes sure to detoxify the human organism by particular adsorption mechanisms as well as by anionic, cationic, and non-ionic binding properties and to re-introduce a mineral electrolyte homeostasis.

The pollution with heavy metal ions (e.g. lead, mercury, cadmium) can lead to a series of unspecific illness symptoms in sensitive persons, which improve after detoxification therapy. Besides those results already described in the relevant literature, *in-vitro* studies with simulated conditions analogous to those in human metabolism demonstrate that heavy metals such as e.g. Pb or Cd are absorbed significantly, and in consequence can also be eliminated from the human digestive tract.

On latent contamination with radioactive isotopes (e.g. caesium, strontium), which can also be present in the food chain without a nuclear catastrophe, too little information is known. According to observational studies with similar substances as well as *in-vitro* studies it is postulated, that ELKOPUR 312® is able to absorb and excrete free isotopes in the digestive tract, and thus reduces overall contamination.

ELKOPUR 312® possesses with its ability to exchange ions in a complex surrounding (oral, gastrointestinal tract, pH 1-8) possibly a very high affinity to biogenic amines (“histamine”), and offers an interesting field of application in humans with histamine intolerances.

The ensured binding of mycotoxins in the intestinal tract makes ELKOPUR 312® highly interesting for groups at risk, who ingest many tropical spices, nuts, and dried fruits. Also, decomposition products of viruses and bacteria are bound and excreted faster, so that a supplementary treatment of diarrheal diseases makes sense.