



krebsliga schweiz  
ligue suisse contre le cancer  
lega cancro svizzera

## **Swiss Study Group for Complementary and Alternative Methods in Cancer SCAC**

Patronage: Swiss Society for Oncology (SGO), Swiss Society for Medical Oncology (SGMO),  
Swiss Institute for Applied Cancer Research (SIAC)

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# **Dr. Matthias Rath's Cellular Health™**

### **Documentation No. 03/04**

#### **Summary**

After examining the literature and other available information, the Swiss Study Group for Complementary and Alternative Methods in Cancer (SKAK) and the Swiss Cancer League (SCL) have found no proof that the vitamin preparations of Dr. Matthias Rath have any effect on human cancer. They advise against their use in cancer prevention and treatment while recommending a diet rich in fruit and vegetables.

#### **Brief information**

According to the physician Matthias Rath, vitamins, some in high dosages, and other nutritional supplements protect against cancer. The preparations that he sells are allegedly able to cure cancer. The underlying assumptions have never been scientifically tested and, based on the current state of knowledge, a cancer-preventing or -curing action is not proven for any of these preparations.

#### **Theory**

According to Matthias Rath, diseases arise when the balance between mechanisms breaking down and building the connective tissue shifts towards breakdown. If disease organisms or cancer cells can dissolve the surrounding connective tissue, a disease may spread in the body. Rath claims that the plasminogen activator/plasmin system plays a critical role in this process: the reaction chain results in the activation of collagenase, which breaks down collagen. By gaining access to the blood vessels, cancer cells can then spread in the circulatory system.

Rath thinks that the body can normally block enzymes that destroy connective tissue by means of two mechanisms: with the intrinsic enzymatic block or with the help of nutritional supplements. According to Rath, almost all people suffer from a chronic vitamin deficiency and almost all diseases are caused by a lack of lysine and vitamin C. Lysine can allegedly suppress the plasmin-induced proteolysis by occupying the binding sites on plasminogen. In diseases the body's production of proline becomes insufficient, which is why this amino acid also has to be consumed. The name «Cellular Health» was chosen because the nutritional supplements target the body's cells as their active site (27).

## **Claims of the inventors/suppliers**

Rath claims that conventional cancer therapy has never demonstrated that it has a life-prolonging effect. Often it even accelerates the disease's progress. Modern medicine has been very ineffective because it does not understand the true causes of diseases. Hundreds of thousands are dying because they do not know about vitamin therapy or have found out too late. Matthias Rath believes the mechanism of cancer spread that he has identified is both the decisive breakthrough in blocking cancer (4) as well as a breakthrough in the struggle against infectious diseases (including AIDS) and virtually all other diseases (1). Hundreds of studies to date have shown that high-dosages of vitamin C, vitamin E, beta-carotene and other nutritional supplements can prevent some types of cancer. With the publication of the results of Rath's research in 1992 (30), the significance of lysine allegedly became known as a medical breakthrough in all fields of medicine. However, pharmaceutical companies ignore it. As the business of cancer and chemotherapy is so lucrative the pharmaceutical industry has no interest in developing effective therapies for which there is no patent protection.

According to Rath, the foundation of modern cancer therapy are high dosages of vitamins. Only lysine in high doses combined with vitamin C can slow down or even stop connective tissue destroying processes. Vitamin C, proline, lysine and polyphenol from green tea are able to stem the invasion of cancer cells (3, 4). Recent research results at his research institute demonstrate that the combination of nutritional supplements recommended by Rath can completely stop the spread of cancer cells. Thus, in experiments the spread of cancer cells was blocked 100 percent (skin and breast cancer 100%, colon cancer 91%) (3). According to his information, cases of lung, breast, liver, esophageal, bladder and testicular cancer as well as lymphomas have been successfully treated using Cellular Health (27). The supplier repeatedly refers to his own research, and many patients around the world allegedly owe their life to his discoveries (2). Courtesy of the most recent insights, which have been incorporated into the preparation "Epican forte", cancer will soon cease to be terrifying. Only eight weeks after the preparation was introduced on the market, the first successes were recorded by users and patients (2).

At the end of his brochure (1) Rath restrictively notes that sometimes, especially in cases of advanced illness, even Cellular Health cannot fully restore health.

## **Studies and examinations, data**

In Rath's lectures and on the Internet patients are heard whose cancer was allegedly cured with the help of vitamins. However, these cases lack the detail required for verifying a possible success in this context. In at least one case (2) it is not even certain from a medical perspective if cancer was present. The «unique experimental design» mentioned in one brochure (3) is apparently a self-developed test in which the ability of cancer cells to penetrate a collagen membrane is measured. Rath considers this experimental array to be a surrogate for the *in vivo* spread of metastases (4) – which in this form is an untenable assumption.

There is only little scientifically confirmed knowledge of the link between nutritional supplements and the occurrence of cancer (see separate information). Scientific evidence is currently insufficient particularly with respect to secondary plant ingredients, amino acids and «more exotic» substances. Epidemiological surveys, especially in retrospective, are encumbered by numerous difficulties. Even if the substances exhibit a partially protective action in cell cultures and animal models, it remains uncertain because of a lack of epidemiological studies and controlled randomized experiments whether this is relevant to healthy persons or cancer sufferers. Furthermore, fruits and vegetables contain many additional micronutrients so that the identification of a few responsible substances is difficult. It is possible that the interaction of these micronutrients is of greater importance than any individual substance. Studies in which Rath's preparations were examined for their cancer-preventing or curing effect are currently lacking.

## **Application and treatment**

If taken for cancer prevention, the supplier recommends five or three preparations, depending on whether risk factors (more advanced age, greater risk of illness in the family) are present or not. If taken as «natural therapy» against cancer, Rath recommends six preparations. The staged program recommended by the supplier calls for beginning with one preparation (Vitacor Plus) and adding a new one every month. The pharmaceuticals (Vitacor Plus, Epican forte, Vita C forte, Arteriforte, Lysin C Drink, Prolysin C) contain vitamins, trace elements, amino acids, flavonoids and other nutritional supplements in differing compositions. It is uncertain why particular combinations are recommended in particular dosages although the company writes that most recommendations are based on the analysis of studies by other scientists (5).

## **Adverse effects and interactions**

Some dosages of individual substances are above the quantities recommended by official agencies (for vitamin C more than the 200-fold amount). According to the supplier no side effects are anticipated (1). However, from a medical point of view the following facts should be noted. In an intervention study with vitamin E (50 mg/d) the mortality of the test group was slightly higher (hemorrhages, hemorrhagic brain infarctions [17, 21]). Several studies document an anticoagulating effect of vitamin C. Therefore, patients with coagulation disorders and patients that are about to be operated on should not take high doses of vitamin C (more than about 2g/d) (28). Arginine and lysine may promote the secretion of growth and other anabolic hormones (8). Flavonoids in pregnant women are suspected of increasing the leukemia risk in infants (7). Furthermore, there is growing evidence that flavonoids act as phytoestrogens (32, 33, 34). Increased vitamin A intake probably contains an increased risk of hip fractures (21). Excessive vitamin A and vitamin D doses are toxic (vitamin A: children: from 18'000 IU/day, adults: 100'000 IU/day, vitamin D: safety limit 2'000 IU/day, published cases of intoxication with one exception from 40'000 IU/day) (31).

Also, interactions between nutritional supplements and medication are known, for example between vitamin B6 and Levodopa and between minerals and tetracyclines (8). There is also discussion as to whether vitamin C intake is contrary to a simultaneous conventional cancer therapy because it might increase the resistance of tumor cells (19). Various antioxidative substances weakened or enhanced the effect of conventional chemotherapies and radiotherapy in animal experiments. The human data is only sparse; in a randomized trial vitamin B6 appeared to weaken the effect of a high-risk chemotherapy (28).

## **Costs**

The daily costs of Rath's recommended cancer therapy are about CHF 12 (minimum recommended dose) to about CHF 26 (maximum recommended dose) if all six medications are taken. This is equivalent to monthly costs of about CHF 350 to 770 per month.

## **The inventor**

Matthias Rath was born in 1955 in Stuttgart (Germany) (6). According to his own information he studied medicine in Germany and subsequently worked as a scientist at the university hospital in Hamburg and the German Cardiac Center in Berlin as well as being the head of Cardiovascular Research at the Linus Pauling Institute in Palo Alto, USA. Rath stands in the tradition of Pauling, who recommended high vitamin doses. Supporters of Cellular Health have repeatedly attracted attention with e-mail spamming actions designed to sway politicians to decide in their favor (29).

## **Suppliers/sales/legality**

The sale of these preparations is not permitted in Switzerland: they are neither approved as nutritional supplements by the Swiss Federal Office of Public Health nor as medicine by the Swiss Agency for Therapeutic Products, Swissmedic. The preparations are too highly dosed to be classified as nutritional

supplements and, furthermore, they are being advertised as having healing effects, which is not permissible for foods. However, for approval as medicines they would require a demonstration of their effectiveness, which has not been forthcoming. Nevertheless, the preparations can be ordered via the Internet or the product hotline of Matthias Rath BV in the Netherlands. In the Netherlands, no special registration is required (35).

## **SKAK summary**

Nutritional supplements may have pharmacodynamic effects. So far there are only a few studies that indicate a causal link between micronutrients and cancer. A cancer-curing effect has not been documented for any of these substances. Nor is there any proof that the preparations sold by Matthias Rath, some with high dosages, are useful in cancer prevention – leave alone curing cancer. Rath still owes proof regarding the correctness of his claims. Proof of effect cannot be provided by analogy with in vitro, animal or cell experiments. Because there is no proof for effect nor for the harmlessness of the preparations, SKAK advises against their use.

It is more probable that the complex interaction of different substances in food is required for a cancer-inhibiting effect than that any individual substances have this effect. However, this is difficult to test in studies. Based on previous, reliable evidence it is recommended to eat large amounts of fruit and vegetables and to look out for a healthy body weight. There are no objections to taking a multivitamin/mineral preparation dosed according to current recommendations.

Also, the requirement for micronutrients in a healthy population has not been established. Moreover, the requirements for vitamins and other essential nutrients vary among individuals and with age. Originally, recommendations were formulated for the prevention of deficiencies while possible enzymatic or antioxidative functions of micronutrients were not considered. Experts are currently discussing whether the doses recommended to date for individual vitamins should be increased.

In particular seniors, severely ill or injured patients, persons after cancer treatment and individuals with certain gene polymorphisms may not be able to sufficiently meet their micronutrient requirements with food. In these cases supplementation, sometimes even in higher dosages, is required, and registered preparations are available for this purpose.

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