



SANUVIS 2X - dextro rotatory lactic acid

**A proven preparation now available as a single homoeopathic
remedy**

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Biochemistry

Lactic acid is an organic acid found in many botanical and animal organisms. In the human cell it may occur as an intermediate product of intermediary metabolism. It probably owes its name to the fact that in 1780 it was discovered by Scheele in sour milk.

The summative chemical formula of Lactic acid is $C_3H_6O_3$.

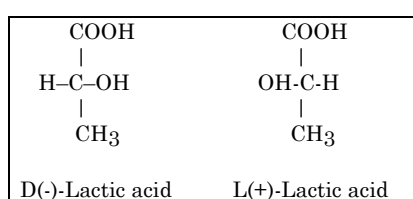


Fig. 1: Summative formulae of alpha-hydroxypropanoic acid

There are two isomers which differ according to the spatial arrangement of the OH group around the C2 atom. The structure configured to the left, is L-lactic acid, and that configured to the right is D-lactic acid. This structural difference within the same summative formula results in their ability to rotate polarised light in different directions. We therefore distinguish between dextro rotatory L(+)- and laevo rotatory (D-)-lactic acid, and their lactates. In products which are naturally fermented by lactic acid (milk, sauerkraut, beans, cucumbers) both forms of lactic acid occur as a mixture, a racemate. By dint of skilful inoculation with the appropriate lactobacilli it is possible to promote the formation of L(+)-lactic acid in such products.

Lactic acid in the body

Both forms are likewise found in the human body. As the contents of the

intestines are fermented, many organic acids are formed, including both isomers of lactic acid.

In intermediary cell metabolism lactic acid, as well as lactate, are formed whenever oxygen is insufficiently available, so as to utilise the pyruvate which forms during glycolysis. Initially lactate acts as a kind of reserve, which can be converted back into pyruvate by means of an oxidative process, and then by pyruvate dehydrogenase into acetyl-CoA. This acetyl-CoA is then broken down by a final oxidation in the citric acid cycle into CO_2 to provide energy.

If the oxygen supply is poor or increased energy is required, more lactate is produced in the process of anaerobic glycolysis. For this the preparation and consumption of $NADH+H^+$ is required, which would otherwise prevent the breakdown of glucose, because it inhibits the action of the appropriate enzymes.

Basically we have to distinguish between two different possible ways of forming lactic acid or lactate in the body. On the one hand, when cell metabolism is disturbed resulting in reduced fermentation, D(-)-lactic acid is formed, which may either be excreted via the kidneys or stored in the tissues. On the other hand, especially as a result of muscular activity, biologically active L(+)-lactic acid is formed, and this is re-absorbed by the kidneys for energy metabolism. This dextro rotatory lactic acid is also known as sarcolactic acid (Acidum sarcolacticum).

As lactate formation increases in the muscle tissue as a result of increased work, the resultant dextro rotatory lactic acid infiltrates the fluid of both tissues and blood, affecting their pH value. In a hyperacidic body the tissue is acid because of accumulation of acids and metabolic waste, whilst the pH value of the blood becomes more strongly alkaline. Thus, when the pH value of the blood is lowered because of the surreptitious introduction of dextro rotatory lactic acid resulting from muscular exertion, this militates against the alkalinity of the blood, and this is typically found in chronic diseases. In addition, L(+)-lactic acid stimulates adrenal growth and thus also the excretion of adrenalin. This hormone combats insulin, ensuring that adequate amounts of glucose are available for combustion. At the same time dextro rotatory lactic acid inhibits any excessive protein synthesis and cell proliferation. According to Dr. Dr. Seeger, dextro rotatory lactic acid is a natural cell-regeneration material, activating respiration and able to increase cell respiration by up to 350%. Prof. Wagner, the Director of the Institute of Nutritional Science at Gießen University, could prove in scientific experiments, that only L(+) lactic acid promotes cell respiration, which leads to direct activation of the mitochondria.

This dextro rotatory (sarco-)lactic acid, formed within the body as a result of muscular exertion, is an energy accumulator. As Prof. Kandler, Botany Professor at Munich University, demonstrated in numerous animal experiments, this is the only substance on which the



organism can draw for the physiological production of glycogen.

Laevo rotatory lactic acid, on the other hand, causes substantial damage to normal metabolism. It can result in intoxication, with neurological symptoms, dulling of consciousness and behavioural disturbances. This is also the reason why baby foods should never contain either D(-)-lactic acid or any racemate.

For a long time it was thought that aching muscles were the result of an accumulation of lactate. Today the cause is known to be minutely damaged and torn fibres.

Dextro rotatory lactic acid deficiency.

As a result of our sedentary lifestyle, on the one hand, and of our carbohydrate-orientated and often unsuitable diet on the other, not to mention the heavy burden of stress which we cannot adequately resolve by means of fight or flight, our cells get into an anaerobic metabolic state, in which energy has to be acquired by fermentation and other means, owing to a lack of oxygen and enzymes. This situation forms the basis for development of a very wide variety of chronic diseases, one cause of which is a disordered acid-alkaline balance.

From the therapist's point of view, several important steps need to be taken here:

- A nutritional adjustment has to take place, with a move towards

a diet rich in vital foods, free of products containing cow's milk, hen's eggs and pork. As far as possible, food should be predominantly organic fruit and vegetables, with a lot of freshly squeezed vegetable juices and raw ingredients, insofar as these are tolerated by the patient. Also, the consumption of cereals, including bread, should be critically reviewed.

- A prescription of dextro rotatory lactic acid is indispensable, since this activates cell respiration, favourably influences the acid-alkaline balance, stimulates the activity of the organs responsible for detoxification and that of the adrenals, and strengthens the immune system by giving improved support to the functions of fermentation. In years of experiments both Dr. Dr. Seeger and Dr. Reckeweg found that good therapeutic results are only obtainable when pure attenuations of dextro rotatory lactic acid are prescribed.

For years the SANUM company has been supplying their SANUVIS preparation as a potency combination in the form of drops, tablets and injectables, as well as their SANUVIS 1X ointment, which has an excellent transcutaneous action. Now, as well as these, SANUVIS is available in the 2X potency as drops.

This means that it is now possible to more finely tune the treatment of the acid-alkaline balance in individual cases. If a more rapid and

intensive action is considered desirable, especially in chronic diseases, an initial course of SANUVIS 2X may be prescribed, followed later by SANUVIS in the potency combination. If so indicated, SANUVIS potency combination may be prescribed initially as ampoules, once or twice a week according to usual practice, with SANUVIS 2X drops being taken on days injection-free. The move to the SANUVIS potency combination would still take place, depending on how the cure was progressing.

It will help to provide a better explanation of the therapeutic thrust of the homoeopathic preparation of L(+)-lactic acid in SANUVIS if we present the remedy picture below.

Remedy picture

The remedy picture of *Acidum sarcolacticum* includes the following leading symptoms:

- Rheumatoid phenomena with aggravation from any movement.
- Pains in muscles and the small of the back.
- Tiredness and exhaustion of the whole body with great weakness.
- Gastritic disturbances with tendency to heartburn, vomiting and acidic stools.
- Catarrh of the respiratory tract with a dry, tickling cough.
- Cardiac disturbances with accelerated pulse after slight exertion, angina pectoris.
- Nocturnal polyuria.
- Cold extremities, general chilliness.
- Psoriasis, neurodermitis.



On the basis of the above symptoms, SANUVIS 2X is an ideal remedy for the regulation of disordered metabolic processes resulting from stress, dietary errors, imbalance in the acid-alkaline economy and lack of movement, and for the activation of cell respiration.

The therapeutic adult dose is 5 drops 1-3 times daily. As soon as an improvement is underway the quantity or frequency of the dosage may be reduced.

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First published in the German language in the SANUM-Post magazine (74/2006)

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