

BIOCHEMISTRY

Vitamin K, Fish Meal Product, Aids in Treatment of Jaundice

Vitamin B₄ Now Available in Crystalline Form; Root Growth Substance Shown to be Vitamin B

VITAMIN K, from fish meal, together with bile salts, is now being used as an aid in the treatment of jaundice, the disease that turns people yellow. A preliminary report of encouraging results at the Mayo Clinic, at Rochester, Minn., has been made.

The jaundice is the kind known as obstructive jaundice because it is due to obstruction of the flow of bile. The new vitamin treatment does not help the jaundice but controls the bleeding which is a dangerous feature of the disease. Treatment of the jaundice itself is operation to remove the obstruction to the bile flow, but this is not always possible because of the tendency to uncontrollable bleeding.

More Data Needed

The new treatment has been used in 18 cases, Drs. H. R. Butt, A. M. Snell and A. E. Osterberg report. In certain cases, they state, this treatment "probably has prevented hemorrhage or has had a definite inhibitory effect on actual bleeding."

"We realize," they add, "that much more data must be collected before any definite conclusions may be drawn and that the whole problem is one of extraordinary complexity."

The complexity arises from the fact that in spite of much research over many years by many scientists, the exact

mechanism which normally prevents hemorrhage by making blood clot when it is shed is still not too well understood.

The results with the treatment so far encourage the Mayo scientists to believe that prevention and control of the bleeding tendency of the jaundiced patient may be attained in the "not too distant future."

From Many Sources

Vitamin K is a relatively new vitamin found in hog liver oil, cabbage, spinach, tomatoes, alfalfa and various other natural sources. Dried alfalfa meal was at first used in the treatment at the Mayo Clinic, but as the patients could not tolerate this for long, the vitamin is now being obtained from fish meal. It is given together with bile or bile salts.

Lack of vitamin K in the diet of chicks and certain other animals causes hemorrhagic or bleeding disease. In human patients suffering from obstructive jaundice, the bleeding apparently occurs because damage to the liver caused by obstruction to the flow of bile from the gall bladder makes it impossible for the patient to utilize the vitamin K in his food.

Step by step the various parts of vitamin B are becoming available in pure form for possible dietary use and further scientific study. Pure crystals of

the part of the vitamin known as Factor I have now been obtained by Dr. Samuel Lepkovsky, associate professor of poultry husbandry at the University of California. This is the fourth of the five known parts of vitamin B that is available in crystalline form, Dr. Lepkovsky points out. (*Science*, Feb. 18). The other three, thiamine, riboflavin and nicotinic acid, have previously been crystallized by other investigators.

Factor I crystals are described as "colorless rods which aggregate mostly as rosettes and sometimes in fan shapes." Rats living on a diet that lacks this vitamin factor stop growing and get a skin disease of feet, paws, ears and areas around the mouth. Feeding tiny amounts of the crystals cures the condition and makes the animals gain weight immediately. What the Factor I crystals will do for humans and other animals has not yet been determined, but all vitamins are important for normal growth and development. One of the parts of vitamin B is useful in preventing and curing pellagra.

Roots Need Vitamin

Plant roots must have minute supplies of vitamin B₁, otherwise known as aneurin, if they are to grow, Drs. F. W. Went, James Bonner, and G. C. Warner of the California Institute of Technology announce. Experiments have shown that the quantity needed is exceedingly small, measurable in only a few parts per million of solution, but that if roots are entirely deprived of it they will not grow. The growth of roots is started by another substance called auxin, but the vitamin is necessary for its continuation.

Vitamin B₁ has been known for some time as a food element necessary for the normal functioning of the nervous system. It is always obtained from plants, but until now its use to the plants themselves has not been known.

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