

Distinguish, differentiate, compare and explain what is the difference between Folic acid and Folate. Comparison and Differences.

What is Folate?

The term folate denotes a water-soluble vitamin that is essential for human health. The vitamin plays a role in many metabolic processes in the human body and must therefore be supplied in adequate amounts through the food we eat. The name comes from the Latin folium (leaf), as the vitamin was first detected in green leafy vegetables. Foods contain various different folate compounds (folates). Folate compounds occur naturally in foods of plant and animal origin, such as green cabbage, lambs lettuce or eggs.

What is folic acid?

The synthetically produced form of folate is called folic acid. Folic acid is used in food supplements and for fortification of foods.

Differences between Folic acid and Folate

S.No.	Folic acid	Folate
1	Synthetic (man-made)	Naturally occurring
2	Cannot be used by the body unless activated	More readily used by the body
3	Found in fortified flour/cereal, supplements	Found in vegetables (leafy, broccoli etc), legumes, and animal products
4	Can prevent neural tube defect (birth defect)	Important for red blood cells, methylation, DNA synthesis/repair

Why does the body need folate?

Folates ingested with food are converted in the body into an active form, tetrahydrofolate. In this active form, they are involved in many metabolic processes as transmitters of molecular structures with one carbon atom (C1 groups). Among other things, folates are required for the synthesis of purines and thymidylate, and therefore for DNA synthesis. Due to this function, the vitamin is of particular importance for cell division and growth processes.

In which foods do folates occur naturally?

Folates occur naturally in foods of animal and plant origin. Green vegetables like spinach, some cabbage and fruit varieties, pulses and whole grain cereal products, egg yolk and liver are good natural sources of folates. Wheat germ and soybeans are particularly rich in folates. It should be noted that folates are water-soluble and sensitive to light and heat. Losses can therefore occur during the preparation and storage of food. Food products should be carefully prepared in order to minimise the folate losses.