



FOLATE vs. 5-MTHF Calcium Salt



The active folate with the glucosamine salt




VS



Comparison of solubility in water has been performed evaluating the quantity of solvent needed to solubilize the same amount of each folate derivative, at standard temperature.*

“ Quatrefolic® is 100 times more soluble than the old generation compound, the 5-MTHF calcium salt. ”

Descriptive Term	Parts of Solvents Required for 1 Part of Solute	
Very soluble	Less than 1	
Freely soluble	From 1 to 10	
Soluble	From 1 to 30	
Sparingly soluble	From 30 to 100	Calcium Salt
Slightly soluble	From 100 to 1000	
Very slightly soluble	From 1000 to 10.000	
Pratically insoluble, or insoluble	Greater than or equal to 10.000	

*Aqueous solubilities according to the U.S. Pharmacopoeia

AMORPHOUS STATUS of Quatrefolic® offers a higher solubility and good stability. This guarantees **homogeneous and reproducible solubilization process**, whereas the crystalline alternative salt cannot do it.

NO SOLUBIZING AGENTS, which are usually used to facilitate drying of calcium salt forms, are needed for Quatrefolic®.

NATURAL AND VEGETARIAN
Glucosamine, the salt of Quatrefolic®, is a natural compound found in almost all human tissues.

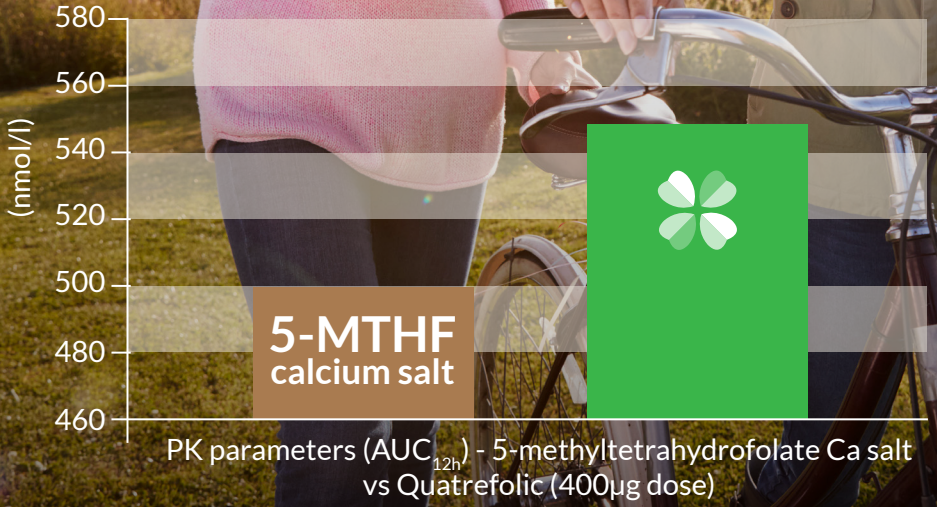
Superior Bioavailability

Animal studies and human clinical trial confirm that Quatrefolic® owns a superior bioavailability profile over the 5-MTHF calcium salt and folic acid.

Folic Acid Bioavailability

Humans have a limited ability to reduce folic acid to 5-MTHF. The lower bioavailability of folic acid cannot be offset by its increasing intake

Pharmacokinetic COMPARISON
Quatrefolic® vs 5-methyltetrahydrofolate Ca salt



Glucosamine salt is a basic, natural, safe and organic salifying agent, chosen after a deep screening operated by Gnosis By Lesaffre on more than 100 molecules, as a salt of the biological active form of folate, the 5-methyltetrahydrofolate (5-MTHF).



BASIC



NATURAL



SAFE



ORGANIC

EFSA Scientific Opinion. Opinion of the Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food on a request from the Commission related to Calcium L-Methylfolate. EFSA Journal. 2004

Miraglia N et al. Enhanced oral bioavailability of a novel folate salt: Comparison with folic acid and a calcium folate salt in a pharmacokinetic study in rats. Minerva Ginecol 2016

EFSA Positive Scientific Opinion. Scientific Opinion on (6S)-5-methyltetrahydrofolic acid, glucosamine salt as a source of folate added for nutritional purposes to food supplements. EFSA Journal. 2013

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