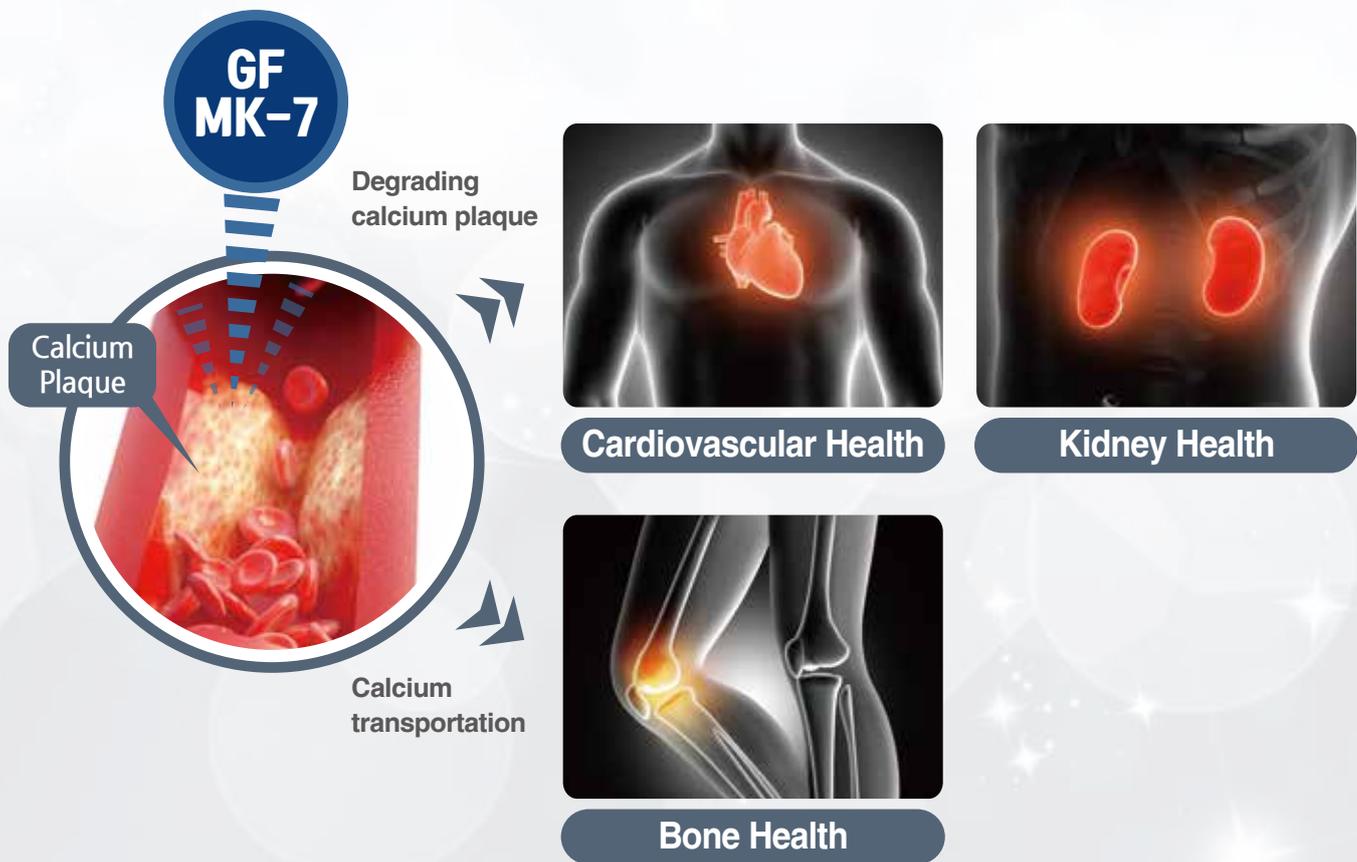


# Vitamin K2 (Menaquinone-7)

## Menaquinone-7 plays vital roles in cardiovascular health and bone development

Menaquinone-7 prevents calcification of artery walls which may lead to heart attacks and strokes.

Menaquinone-7 promotes the binding of calcium to the bone matrix.

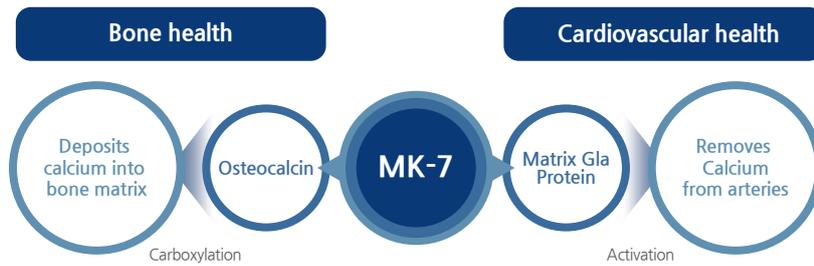
**GENOFOCUS**

Designers' Enzyme Company GenoFocus

- GenoFocus is a platform technology company developing enzyme solutions for specialty food, eco-friendly process, biopharmaceuticals, cosmeceuticals and agriculture.
- We develop enzymes through molecular evolution using smart library generation and microbial display-based high throughput screening.
- With fungal and bacterial secretion systems, we custom-produce the evolved enzymes in large scale fermentation and down-stream process.



## Mode of action of Vitamin K2 (Menaquinone-7)



- Menaquinone-7 activates osteocalcin by carboxylation, which promotes the binding of calcium to the bone matrix.
- Menaquinone-7 activates Matrix Gla protein (MGP) and it prevents calcification of artery walls which leads to cardiovascular disease.

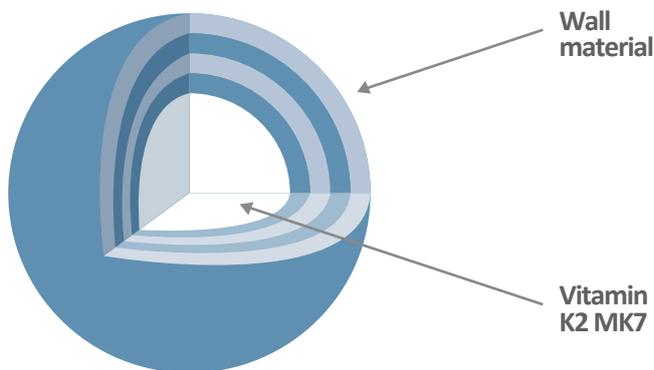


## Main competency

- Menaquinone-7 may exist in both cis- and trans- form. Cis- type of MK-7 is biological inactive. GF MK-7 is natural all-trans menaquinone-7 (>99%, HPLC).
- HPLC chromatogram of all-trans menaquinone-7 is provided.
- No preservatives, no chemicals, no synthetic process.
- GF MK-7 is produced by fermentation and supercritical extraction technology using a *Bacillus subtilis* natto strain isolated from Korean fermented-soybean sauce.
- Microencapsulated MK-7 can be provided to enhance stability against light and alkali metal salts.



## Microencapsulated MK-7



- GF microencapsulated MK-7 product uses a protection system to keep MK-7 locked into microcapsule while keeping stability when exposed to light and some alkali metal salts which make MK-7 unstable.



## GF MK-7 is beneficial for



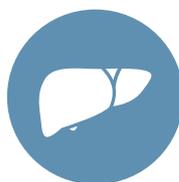
Heart



Bone



Kidney



Liver



Brain



Pancreas



## Application and specification

### Application

- Dietary supplement
- Functional food
- Dairy food

### Product

- Powder type: 1000, 2000, 4500 PPM
- Oil type: 1500, 4500 PPM
- Other grade can be supplied by custom-order.

