



Vitaquinone  
Solvent free vitamin K2

# Vitamin K2 revolution



Pharmaquinone  
single peak vitamin K2

# 14 years since first synthesis path



It's been almost 14 years since the first synthesis path for Menaquinone-7 has been launched.

The wait was undoubtedly worthwhile.

## Our journey



EuroPharma Alliance becomes sole distributor of Nattopharma in Central East Europe



VitaSynth (a sister company to EuroPharma Alliance) is incorporated and signs MK-7 synthesis development agreement with Pharmaceutical Institute Warsaw



VitaSynth sells the patent to Nattopharma ASA, retains the manufacturing rights



VitaSynth fills second generation synthesis patent



Successful scale up of the key intermediate



2007

2006

2009

2008

2013

2012

2020

2017

2022

2021

2024

2023

2025

Vitamin K2 introductory meetings at Vitafoods Geneva between Nattopharma ASA and EuroPharma Alliance



MK-7 synthesis discussions at SupplySide West, Las Vegas between EuroPharma Alliance and Syntavit AS, future Kappa Bioscience AS



VitaSynth fills first generation synthesis patent



VitaSynth moves commercial production of vitamin K2 from Pharmaceutical Institute to own facility



Pharmaquinone range is launched globally at Vitafoods Geneva



VitaSynth gets second generation synthesis patent in first EU country



Launch of Vitaquinone solvent free range



Pharmaquinone received a patent in the US market



# Organic product portfolio



# Our story is purity



Vitaquinone® and Pharmaquinone® are the Menaquinone-7 actives and a range of oil and powder dilutions:



Active Ingredient		
• >99% Active Ingredient	✓	✓
Working standard	●	✓

Oil Dilutions		
• 5% MCT Oil	✓	✓
• 4.75% MCT Oil	✓	●
• 1% MCT Oil	✓	✓
• 0.45% Olive Oil	✓	✓
• 0.15% MCT Oil	✓	✓



Powders		
• 1% MCC Powder	✓	✓
• 0.25% MCC Powder	✓	✓
• 0.2% MCC Powder	✓	✓
• 0.2% Maltodextrin Powder	✓	✓

Discover our product range:  
[www.pharmaquinone.com](http://www.pharmaquinone.com)  
[www.vitaquinone.eu](http://www.vitaquinone.eu)

Our assay tests of the active ingredient (*all-trans* K2 MK-7) regularly exceed 100%. It means our production is more potent than the official reference standard. Our active ingredient isomeric purity constantly reaches 100% (no *cis* isomer detected by USP Method). This is the pharmaceutical definition of our product.

Other synthetic K2 products do not offer purity standardization and the "natural" Vitamin K2 is standardised to 98% purity due to mandatory MK-6 impurity.



Better than  
US Pharmacopeia®  
method

Our purity is supported by advanced analytics both for API and dilutions. Our UPLC method surpasses the old USP method (HPLC) in accuracy and selectivity. Our technicians can see more peaks as the actual assay - purity of a sample is always lower than reported by USP method.

We follow these industry standards:

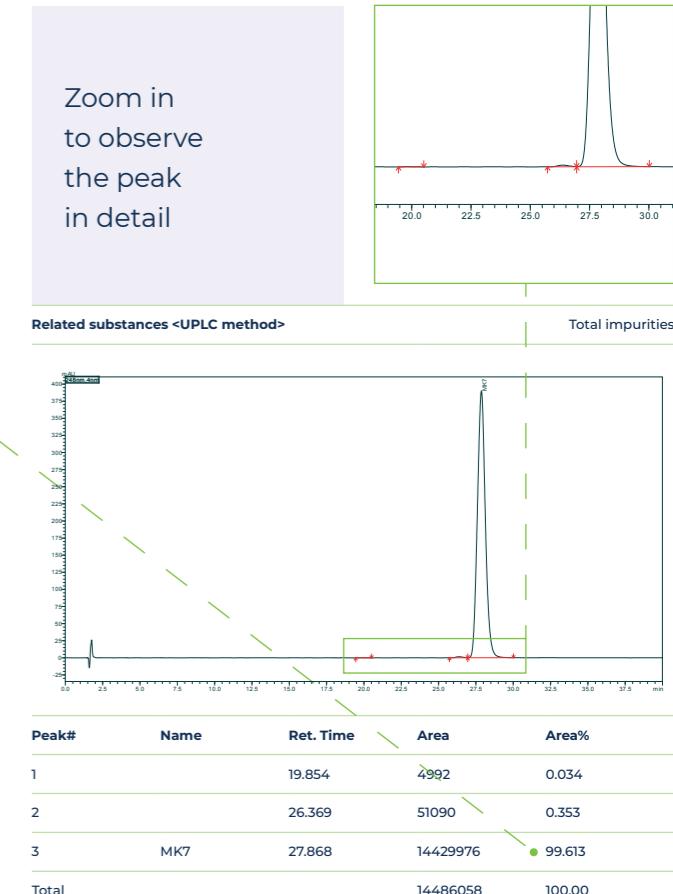
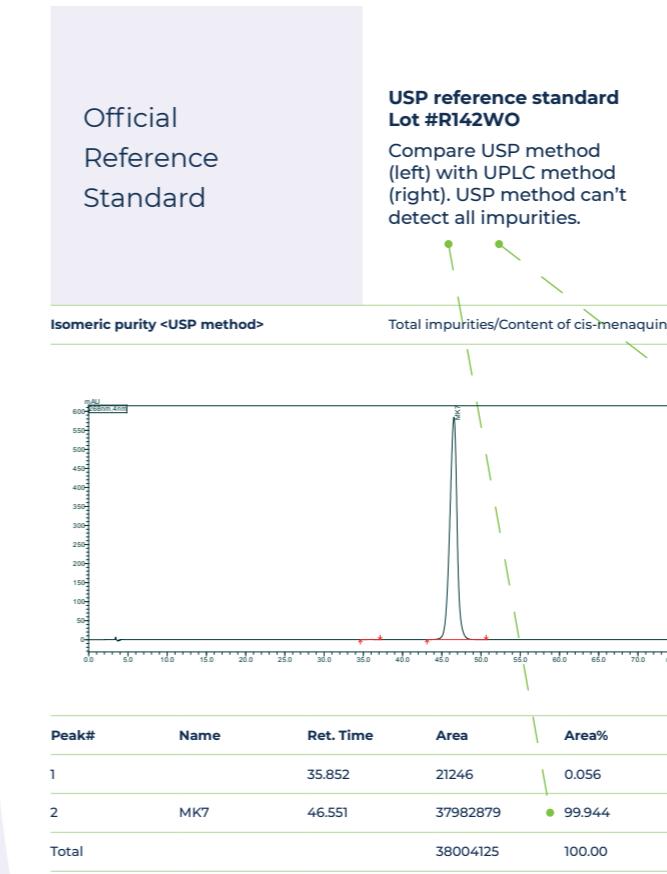
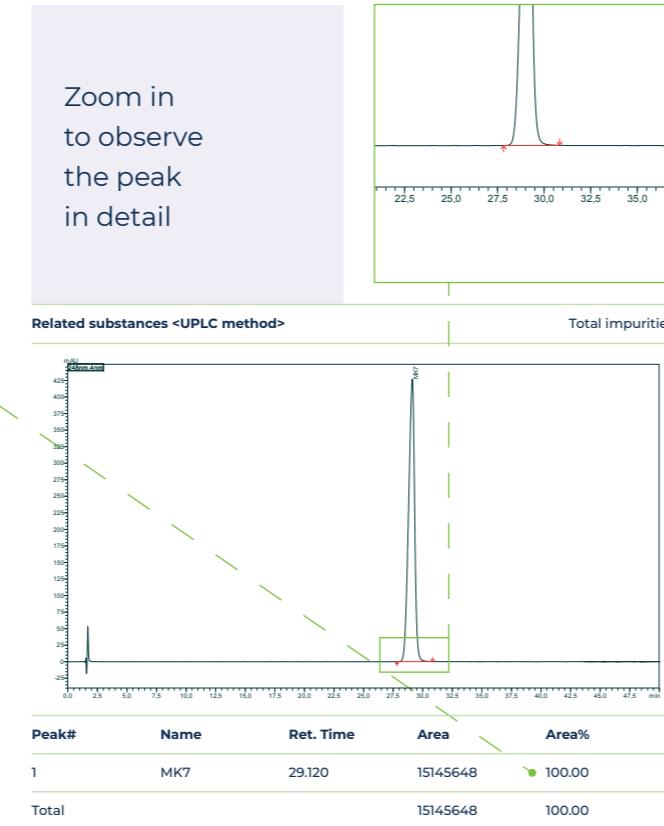
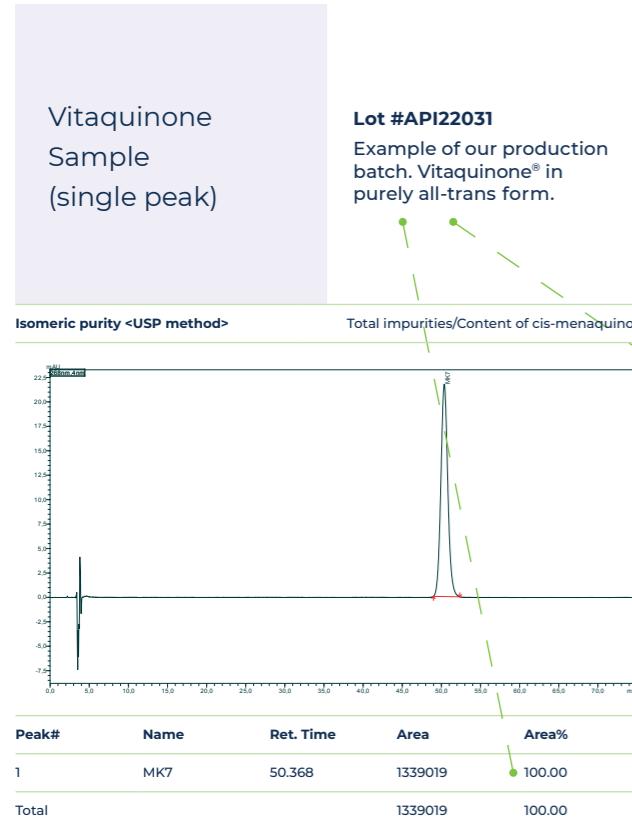


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# Our products vs official reference standard



Our standard production batches regularly surpass the official reference standard in purity and assay. Therefore we believe Vitaquinone® most likely surpasses all other vitamins K2 on the market.



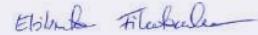
## CERTIFICATE OF ANALYSIS

Product name	Pharmaquinone®99% Active Ingredient Vitamin K2 as MK-7	
SKU code	API	
Batch number	API2304-2	
Best before	24 months from manufacture	
Manufacturing date	April 2023	
Expiry date	May 2025	
Storage	The packed Product should be stored in temperature 5-25 °C and humidity 30-50%. Protect from the light.	
Packaging	HDPE containers intended for contact with food, protecting light-sensitive contents.	

TESTS	REQUIREMENTS	RESULTS
Description: Visual determination	Yellow crystalline powder	Complies
Identification IR spectrum (KBr)	Corresponds to the standard IR spectrum	Complies
HPLC	Corresponds to the standard HPLC profile	Complies
Assay of vitamin K2 (MK7) (UPLC method*)	Not less than 99.0% - not more than 101.0%	100.65 %
Related substances (UPLC method*)		
Total impurities	Not more than 1.00%	< 0.03 %
Assay of vitamin K2 (MK7) (USP method)	Not less than 99.0% - not more than 101.0%	100.26 %
Isomeric purity (USP method)		
Content of cis-menaquinone-7	Not more than 1.00%	Not detected
Loss on drying	Not more than 0.50%	0.19 %
Sulphated ash	Not more than 0.10%	0.02 %
Residual solvents		
Ethanol	Not more than 1000 ppm	Not detected
Ethyl acetate	Not more than 2000 ppm	< 30 ppm
Heavy metals		
Arsenic	Not more than 2 ppm	< 0.33 ppm
Cadmium	Not more than 1 ppm	< 0.33 ppm
Lead	Not more than 3 ppm	< 0.41 ppm
Mercury	Not more than 0.1 ppm	< 0.10 ppm

Jedynak et al.

Approved by:



Name: Elzbieta Filutowska

Title: Quality department

Date: 28.04.2023



# Third party testing results

## Our 100.2% API CoA

These are the CoAs (Certificates of Analysis) for our API2304-2 production lot of Pharmaquinone® 99% Active Ingredient.

## Eurofins 101.7% CoA

Eurofins is among most reputable independent laboratories in the world. We have chosen them as our reference lab to validate our in-house quality control methods.

## Can vitamin be more than 100% pure?

Both our lab and a third-party lab demonstrate higher potency in our regular production compared to the official reference standard. If the standard purity is deemed as 100%, a more pure product will score above 100%.

### Certificate of Analysis

VITASYNTH sp zoo  
Street Szalwiowa 2  
Warsaw 03-167 Poland

Sample Name:	Pharmaquinone 99 Active ingredient	Eurofins Sample:	13802178
Project ID	VITASYNTH-20240215-0001	Receipt Date	19-Feb-2024
PO Number	09-2024	Receipt Condition	Ambient temperature
Lot Number	API2304-2	Login Date	15-Feb-2024
Sample Serving Size	500 mg	Date Started	19-Feb-2024
Description	Vitamin K2 as MK-7 99 sample 500 mg	Sampled	Sample results apply as received
		Online Order	901-2024-E010899
		Result	Result per Serving

Assay (Menaquinone-7-USP_NF)	101.7% on the as-is basis
Result	<1% (No Menaquinone-6 peak detected)

Method References	Testing Location
Assay (Menaquinone-7-USP_NF) (MISC_CHROM)	Food Integrity Innovation-Madison 6304 Ronald Reagan Ave Madison, WI 53704 USA

USPNF 2024. <https://online.uspnf.com/uspnf>. Rockville, MD: USPC 2024 Online

Testing Location(s)	Released on Behalf of Eurofins by
Food Integrity Innovation-Madison	Edward Ladwig - President Eurofins Food Chemistry Testing Madison

*Edward Ladwig - President Eurofins Food Chemistry Testing Madison*

Eurofins Food Chemistry Testing Madison, Inc.  
6304 Ronald Reagan Ave  
Madison WI 53704  
800-675-8375

These results apply only to the items tested. This certificate of analysis shall not be reproduced, except in its entirety, without the written approval of Eurofins. Measurement uncertainty for individual analyses can be obtained upon request.

Printed: 19-Mar-2024 4:14 pm

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Assay of vitamin K2 (MK7) (UPLC method*)	Not less than 99.0% - not more than 101.0%	100.65 %
Assay (Menaquinone-7-USP_NF)	101.7% on the as-is basis	<1% (No Menaquinone-6 peak detected)

# Where is your ingredient made?



## Origin of Ingredients

is important for:

**63** %  
of brand  
managers

and

**81** %  
of adult  
consumers

**Yet, 79%**  
of them

don't see it  
on the product label  
often\*.



\*based on 55 interviews.

# Why the Origin of Ingredients is the new benchmark in food supplements

In the fast-changing world of food supplements, a quiet revolution brews—the rise of ingredient origin as a cornerstone of consumer choice. A recent survey shows a clear trend: both brand managers and shoppers are tuning into the geographical backstory of their nutritional supplements.

## The China Factor.

## What does this mean for brands?

The narrative that unfolds from the results is telling. A significant **63% of industry insiders rated the importance of ingredient origin above the mid-point on the scale**, emphasizing its potential to modulate consumer decision-making. The responses from **consumers** not engaged in the industry are even clearer. A staggering **81% understand the importance of knowing the origins of their supplement ingredients**, assigning scores between 70-100% to this issue.

Perhaps the most telling piece of the puzzle is the attitude toward products containing ingredients from China.

In a climate where product recalls and quality concerns make headlines, the mere mention of the **absence of Chinese ingredients** can sway a decision—with as much as 77% of adult consumers viewing such information as decisive or supportive for their purchasing decision.

It's a strong signal to revisit sourcing strategies, to build partnerships with suppliers whose geographic stamps align with consumer expectations. The current climate is not one of fear, but an opportunity—to stand out, to offer peace of mind, and to **elevate your product** in a crowded marketplace.

As we move forward, let's not merely look at the labels on our products but delve deeper into the narratives they carry. In today's reality of escalating trade tensions between the US and China, the origins of ingredients have taken on new strategic importance. This geopolitical climate amplifies consumer concerns about supply chains and sourcing transparency. As our survey suggests, origins matter more than ever.



# Vitaquinone is solvent free technology



It **does not contain hexane, acetone and other chemical solvents**. They are often used in the purification process of fermented and synthetic vitamin K2



## Beware of cheap vitamin K2

We found out it was the most expensive K2 ever.

**Cheap vitamin K2 from Asia (Goodscend & Seebio)**

Trans vitamin K2 MK-7: **11,6%**  
Total impurities: **88,4% (unknown chemicals)**

**Vitaquinone**

Trans vitamin K2 MK-7: **100%**  
Total impurities: **Not detected**

Scan QR to download our detailed report.

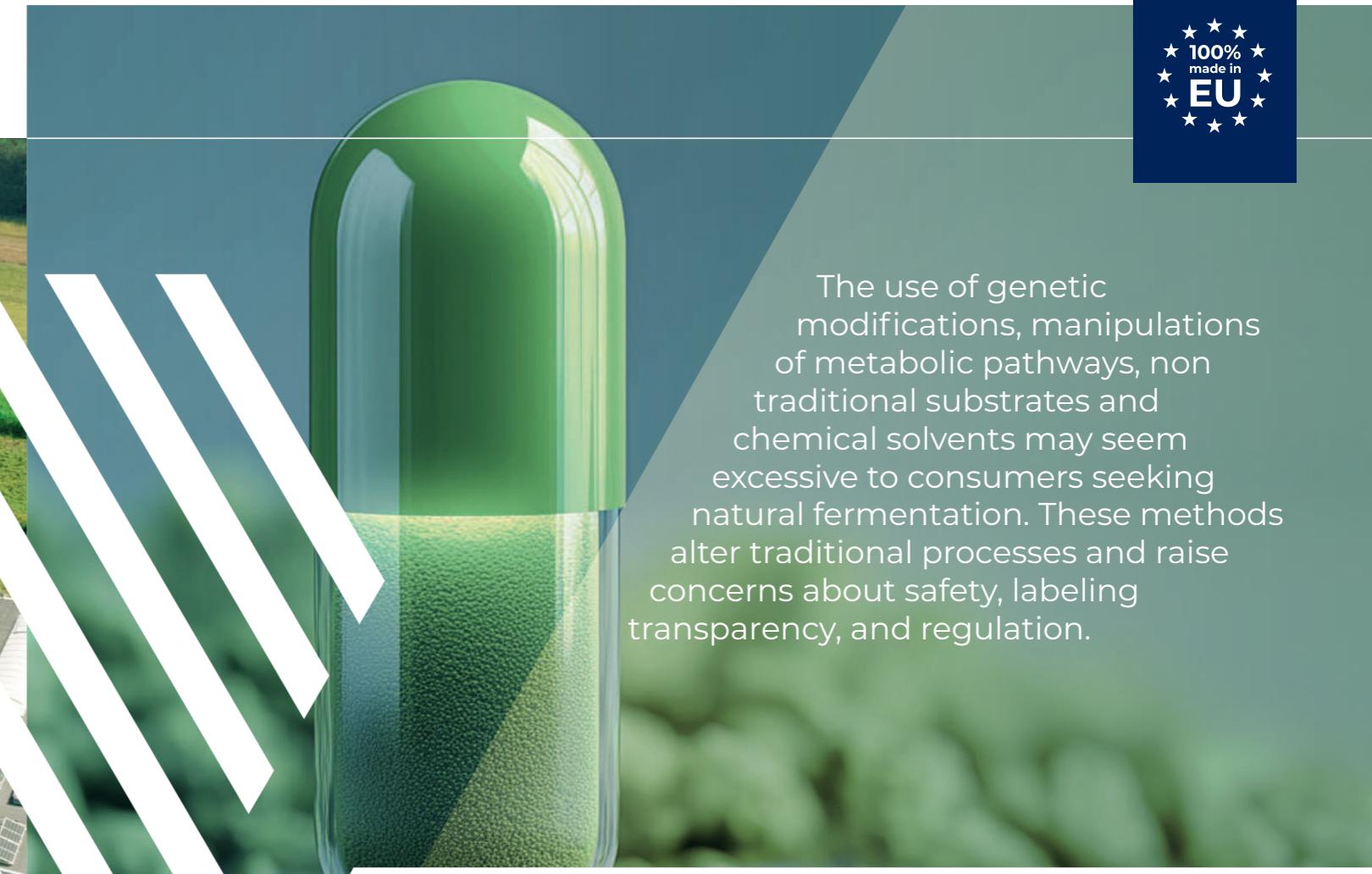


# The Capacity

Our scalable production can meet the global demand for vitamin K2-Mk7. Our new factory located just outside of Warsaw welcomes your audits. After 14 years of K2 development we have reached technological proficiency and a global scale.



# What is Bioengineering



The use of genetic modifications, manipulations of metabolic pathways, non traditional substrates and chemical solvents may seem excessive to consumers seeking natural fermentation. These methods alter traditional processes and raise concerns about safety, labeling transparency, and regulation.



# The K2 market revolution has started.

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**Vitaquinone®** and **Pharmaquinone®**  
are a brands of VitaSynth.

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ul. Rataja 4G, 05-850 Koprki, Poland

**Dilution site:** Europharma sp. z o.o.  
Aleja Led 1, 55-020 Rzeplin, Poland

Find out more at **[vitaquinone.eu](http://vitaquinone.eu)** and **[pharmaquinone.com](http://pharmaquinone.com)**