

# vitamin K2

Products and Services

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**ChromaDex**<sup>TM</sup>

**vitamin K** Vitamin K belongs to the group of fat soluble vitamins (Vitamin A, D, E, and K). Vitamin K is an important micronutrient and is an essential co-factor for the functioning of several proteins involved in blood clotting, bone metabolism and the inhibition of calcification of blood vessels.

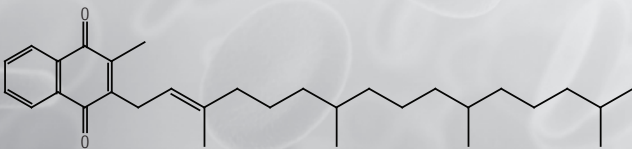
## The Importance in Choosing the Right Vitamin K2

The vitamin K group consists of two main sub-families, the vitamin K1 and vitamin K2s. The difference lies in the side chains, which determine the uptake from the intestine and the distribution in the body. Vitamin K1 is transported to the liver and plays a prime role in blood clotting. Vitamin K2 is primarily a co-factor for activation of Osteocalcin located in the bones and the Matrix Gla Protein located in the cartilage and vascular smooth muscle cells. Vitamin K is critical for the function of these two proteins

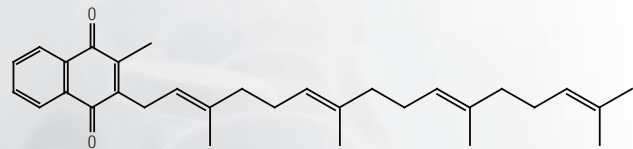
## Vitamin K2 Deficiency

Vitamin K1 is found in green leafy vegetables, such as spinach, kale and broccoli. Vitamin K2, which appears to have a particularly good effect on the heart and skeleton is less abundant in foods. The highest concentration occurs in natto, a traditional Japanese soy bean dish. Vitamin K2 is also present, though to a small degree, in fermented cheese. However, large amounts of foods consumed each day would be needed to achieve the recommend Vitamin K2 dose of 45 µg (MK-7). Scientists have measured the proteins activated by vitamin K2 in individuals on normal western diets and concluded that there is a vitamin K2 deficiency among the western population.

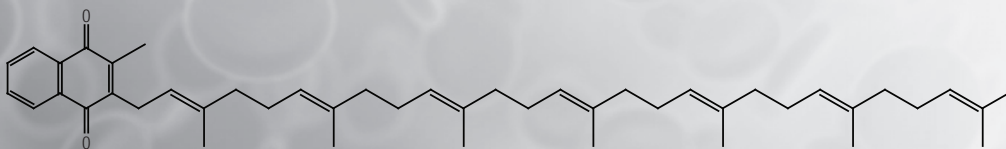
Vitamin K1



Vitamin K2 (Menaquinone - 4)



Vitamin K2 (Menaquinone - 7)



## Reference Standard Ordering Information

Part#	Description	Grade	Size	Price (US\$)
ASB-00022816-250	Vitamin K1(Phytonadione)	P	250mg	Call for a Quote
ASB-00022816-001	Vitamin K1(Phytonadione)	P	1g	
ASB-00022821-025	Vitamin K2 (Menaquinone-4)	P	25mg	
ASB-00022821-050	Vitamin K2 (Menaquinone-4)	P	50mg	
ASB-00022821-250	Vitamin K2 (Menaquinone-4)	P	250mg	
ASB-00022822-005	Vitamin K2 (Menaquinone-7)*	P	5mg	
ASB-00022822-010	Vitamin K2 (Menaquinone-7)*	P	10mg	

## Contract Testing Services Fee Schedule

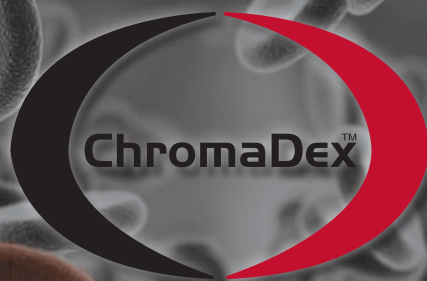
Part#	Description	Report Type	# Of Samples	Price Per Sample
CDA-00100188-ARS	Vitamin K1(Phytonadione) Raw Material Samples by HPLC	ARS	1	Call for a Quote
CDA-00100188-ARS	Vitamin K1(Phytonadione) Raw Material Samples by HPLC	ARS	2-4	
CDA-00100188-ARS	Vitamin K1(Phytonadione) Raw Material Samples by HPLC	ARS	5-9	
CDA-00100188-ARS	Vitamin K1(Phytonadione) Raw Material Samples by HPLC	ARS	10+	
CDA-00100188-ATR	Vitamin K1(Phytonadione) Raw Material Samples by HPLC	ATR	1	
CDA-00100188-ATR	Vitamin K1(Phytonadione) Raw Material Samples by HPLC	ATR	2-4	
CDA-00100188-ATR	Vitamin K1(Phytonadione) Raw Material Samples by HPLC	ATR	5-9	
CDA-00100188-ATR	Vitamin K1(Phytonadione) Raw Material Samples by HPLC	ATR	10+	
CDA-00100382-ARS	Vitamin K1(Phytonadione) Formulation Samples by HPLC	ARS	1	
CDA-00100382-ARS	Vitamin K1(Phytonadione) Formulation Samples by HPLC	ARS	2-4	
CDA-00100382-ARS	Vitamin K1(Phytonadione) Formulation Samples by HPLC	ARS	5-9	
CDA-00100382-ARS	Vitamin K1(Phytonadione) Formulation Samples by HPLC	ARS	10+	
CDA-00100382-ATR	Vitamin K1(Phytonadione) Formulation Samples by HPLC	ATR	1	
CDA-00100382-ATR	Vitamin K1(Phytonadione) Formulation Samples by HPLC	ATR	2-4	
CDA-00100382-ATR	Vitamin K1(Phytonadione) Formulation Samples by HPLC	ATR	5-9	
CDA-00100382-ATR	Vitamin K1(Phytonadione) Formulation Samples by HPLC	ATR	10+	
CDA-00100346-ARS	Vitamin K2 (Menaquinone-4) by HPLC	ARS	1	
CDA-00100346-ARS	Vitamin K2 (Menaquinone-4) by HPLC	ARS	2-4	
CDA-00100346-ARS	Vitamin K2 (Menaquinone-4) by HPLC	ARS	5-9	
CDA-00100346-ARS	Vitamin K2 (Menaquinone-4) by HPLC	ARS	10+	
CDA-00100346-ATR	Vitamin K2 (Menaquinone-4) by HPLC	ATR	1	
CDA-00100346-ATR	Vitamin K2 (Menaquinone-4) by HPLC	ATR	2-4	
CDA-00100346-ATR	Vitamin K2 (Menaquinone-4) by HPLC	ATR	5-9	
CDA-00100346-ATR	Vitamin K2 (Menaquinone-4) by HPLC	ATR	10+	
CDA-00100118-ARS	Vitamin K2 (Menaquinone-7) by HPLC*	ARS	1	
CDA-00100118-ARS	Vitamin K2 (Menaquinone-7) by HPLC*	ARS	2-4	
CDA-00100118-ARS	Vitamin K2 (Menaquinone-7) by HPLC*	ARS	5-9	
CDA-00100118-ARS	Vitamin K2 (Menaquinone-7) by HPLC*	ARS	10+	
CDA-00100118-ATR	Vitamin K2 (Menaquinone-7) by HPLC*	ATR	1	
CDA-00100118-ATR	Vitamin K2 (Menaquinone-7) by HPLC*	ATR	2-4	
CDA-00100118-ATR	Vitamin K2 (Menaquinone-7) by HPLC*	ATR	5-9	
CDA-00100118-ATR	Vitamin K2 (Menaquinone-7) by HPLC*	ATR	10+	

## References

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5. Binkely et al: A high phylloquinone intake is required to achieve maximal osteocalcin carboxylation. *Am J Clin Nutr* 2002; 76; 1055-1060
6. Geleijnse et al, Dietary Intake of Menaquinone is Associated with a Reduced Risk of Coronary Heart Disease: The Rotterdam Study, *J Nutr.* 2004, 134, 3100-3115
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\* ChromaDex has entered into a global agreement with Kappa Bioscience AS (Oslo, Norway) to supply analytical reference standards, quality control methods and related analytical testing services for Vitamin K2, Menaquinone-7(MK-7) in raw materials and finished goods.

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