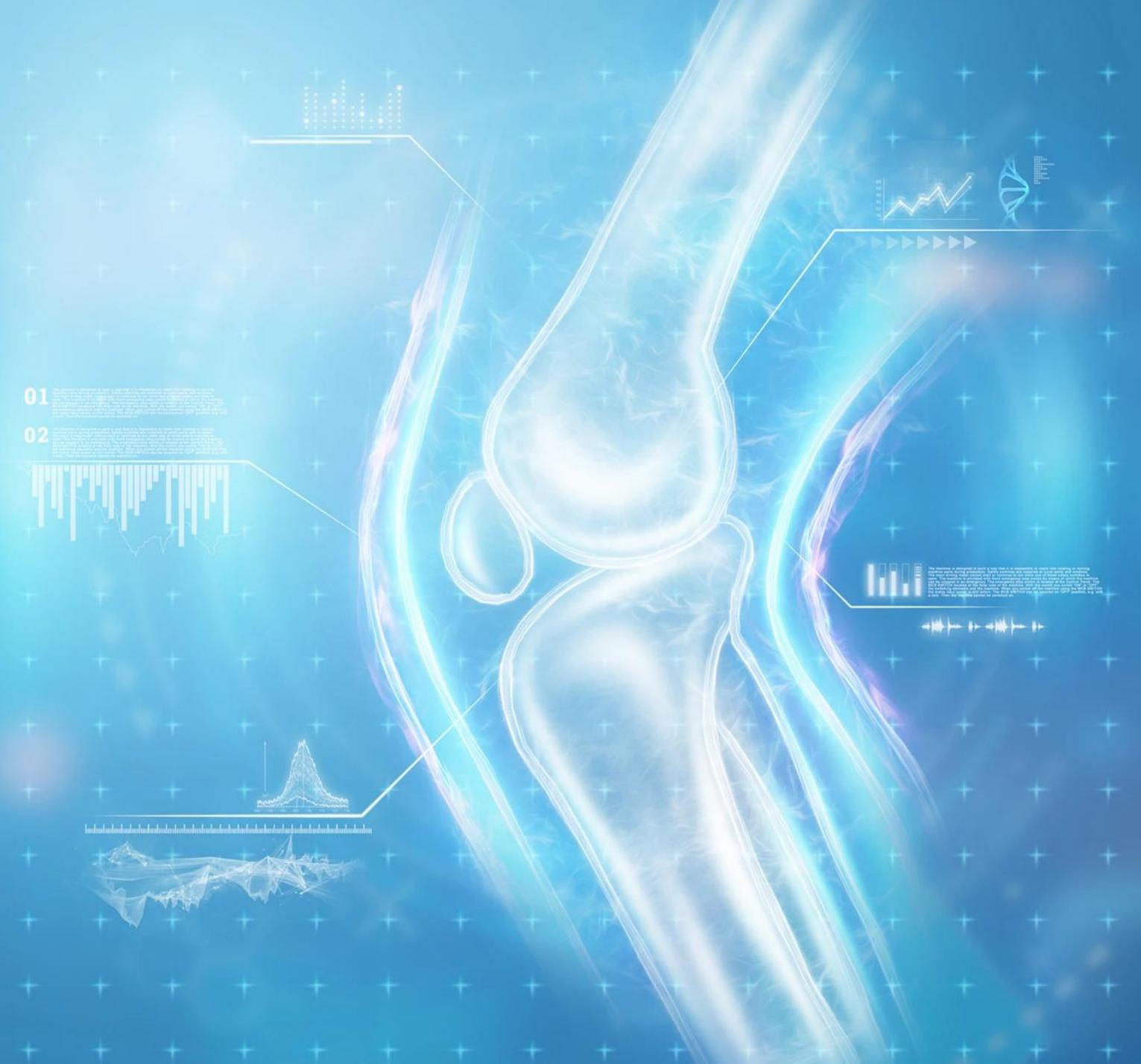


# V'eCollal<sup>®</sup>

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## Type 2 Joint & Bone Health



# Problem & Market

Joint and bone health is the **#1 reason in the USA** to use supplements (31%)

Source: STATISTA

**“1 in 3 women over 50 years old will experience osteoporosis fractures”**  
International Osteoporosis Foundation

**“Globally, 595 million people had osteoarthritis in 2020, affecting 7.6% of the global population.”**

[www.thelancet.com](http://www.thelancet.com)



Introducing

**VeCollal<sup>®</sup>**  
VEGAN COLLAGEN ALTERNATIVE

The First Plant Based Alternative  
To Animal Sourced Collagen.



VeCollal® contains a biomimetic amino acid profile, identical to human Type 2 Collagen and 3 powerful inductors to stimulate the body to make optimal use of the perfect supply of amino acids.

**VeCollal®**  
VEGAN COLLAGEN ALTERNATIVE



Vitamin C

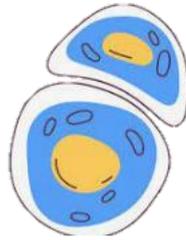
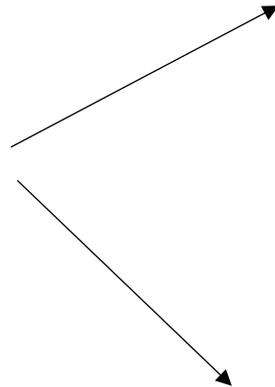
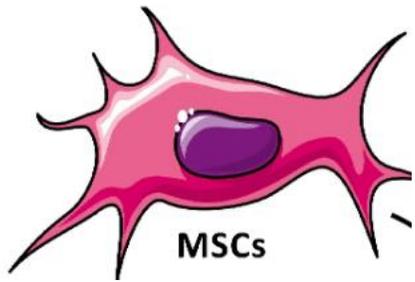


Elderberry

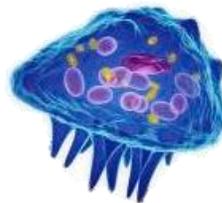


Curcumine

# Involved cells

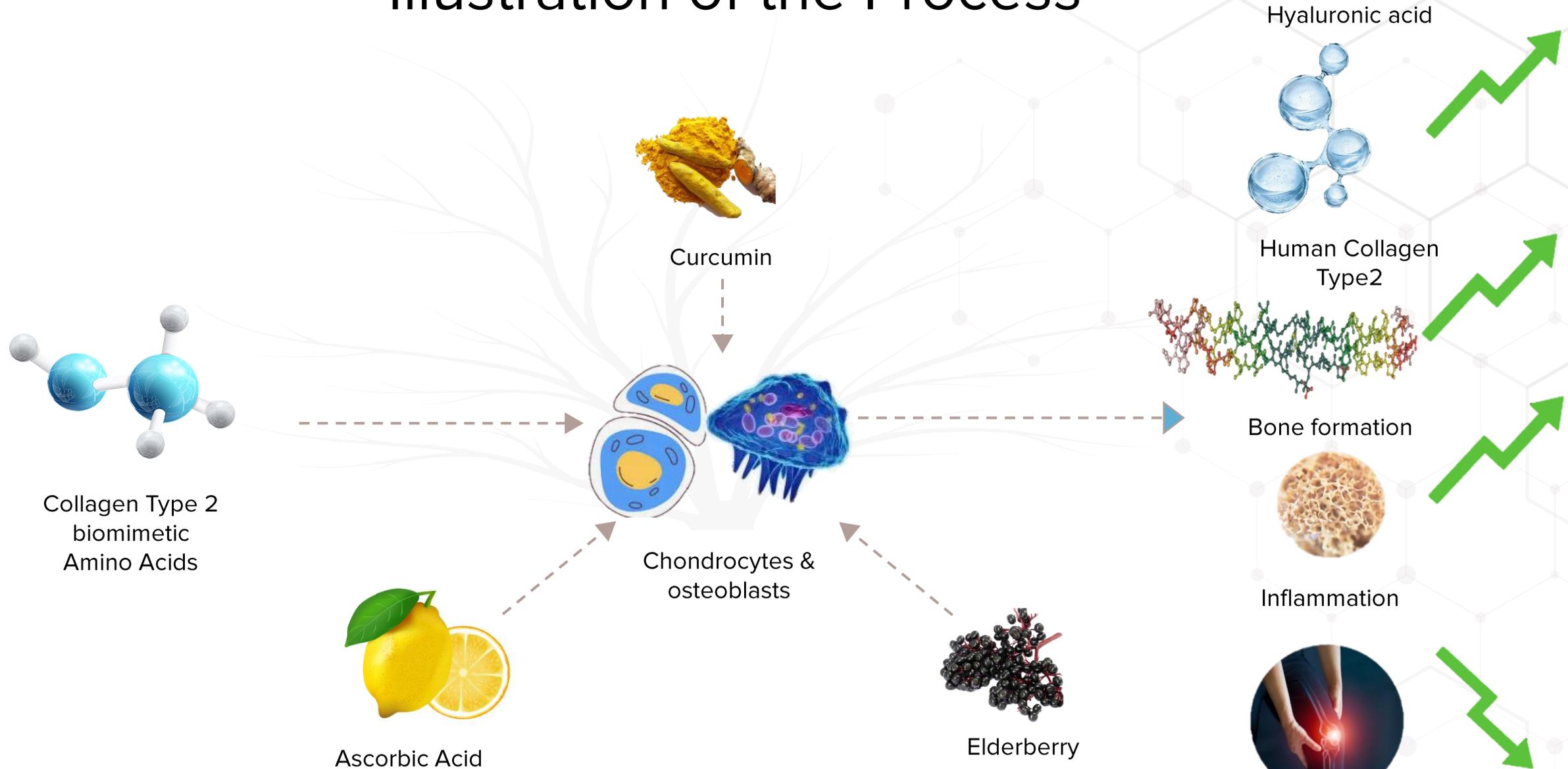


**Chondrocytes** are the only cells found in healthy cartilage. They produce and maintain the cartilaginous matrix, which consists mainly of collagen Type 2



**Osteoblasts** are colloquially referred to as cells that "build" bone. These cells are directly responsible for osteogenesis

# Illustration of the Process



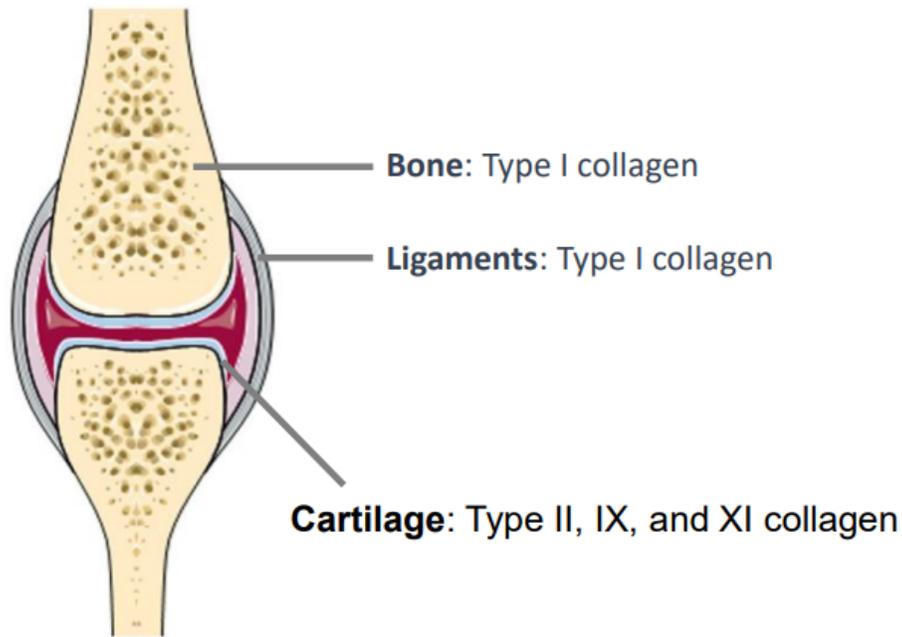


## In Vitro Test

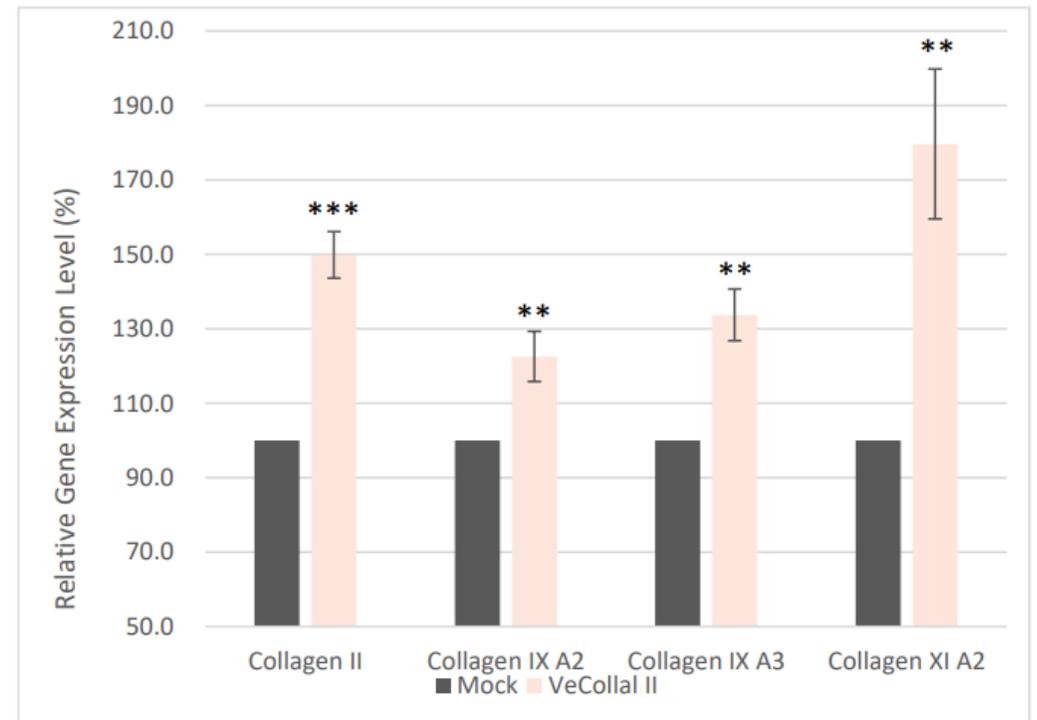
# VeCollal<sup>®</sup>

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VeCollal II can activate chondrocyte collagen gene and promote collagen secretion in cartilage.



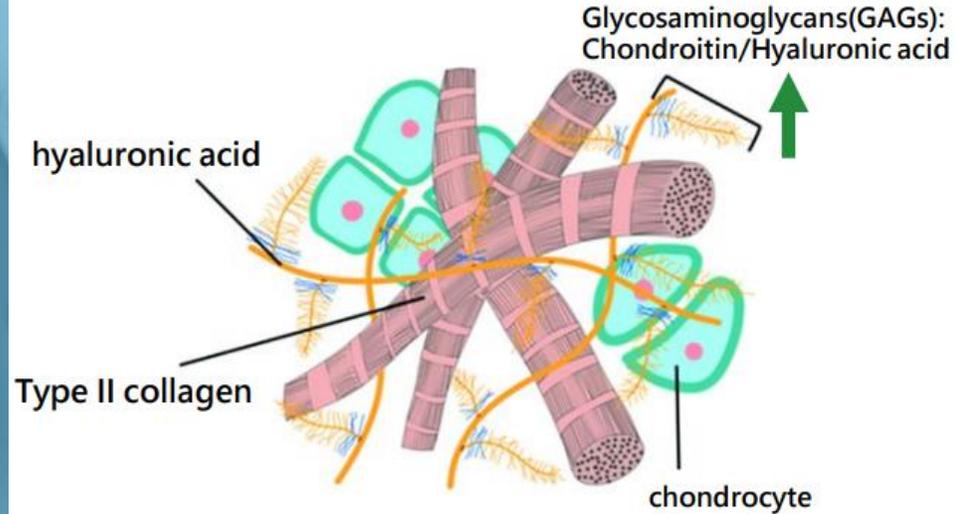
It has been experimentally confirmed that VeCollal II can activate up to 50% of the type II collagen gene in chondrocytes and promote joint repair.



# VeCollal®

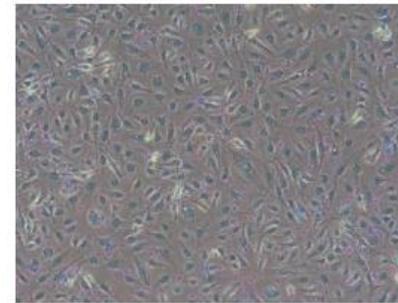
VEGAN COLLAGEN ALTERNATIVE

**VeCollal II can promote chondroitin and hyaluronic acid secretion from chondrocyte**

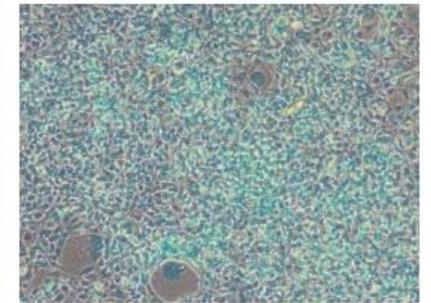


**Components in Joint cartilage**

It has been experimentally confirmed that, VeCollal II can significantly stimulate the secretion of glycosaminoglycans from chondrocyte. Indicating a benefits in enhancing resistance against joint wear and reducing joint stiffness.



Mock



VeCollal II

The blue color indicates glycosaminoglycans stained by Alcian blue

**VeCollal II promotes osteoblast differentiation.**

**Differentiation of Osteoblast**

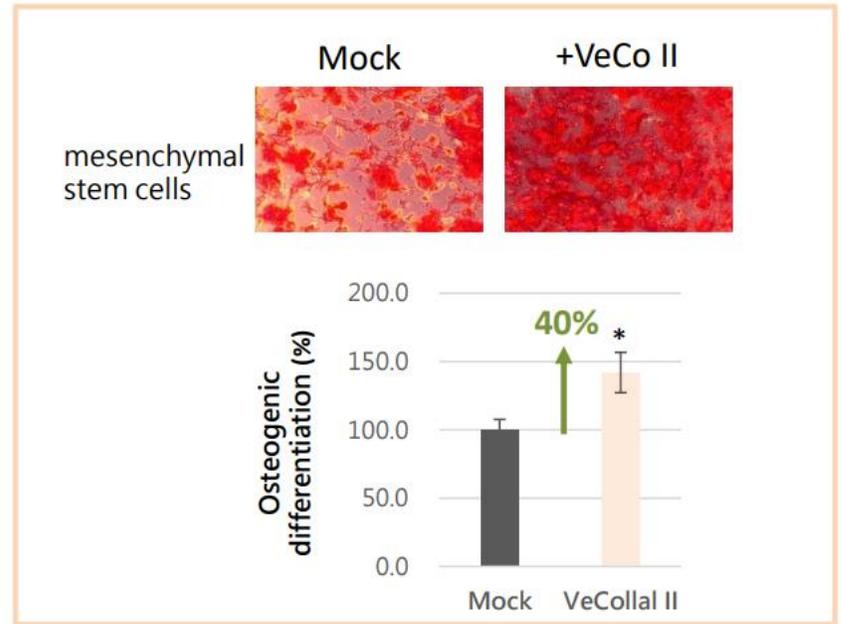


PLoS One. 2014 Apr 10;9(4):e94395

Induction of osteogenesis can be confirmed by staining calcium (red dye) to indicate bone formation.

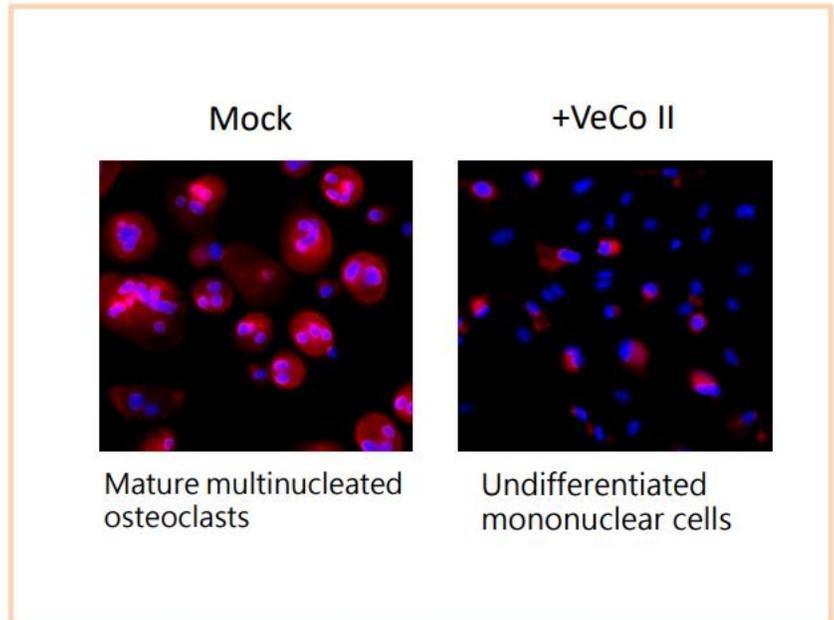
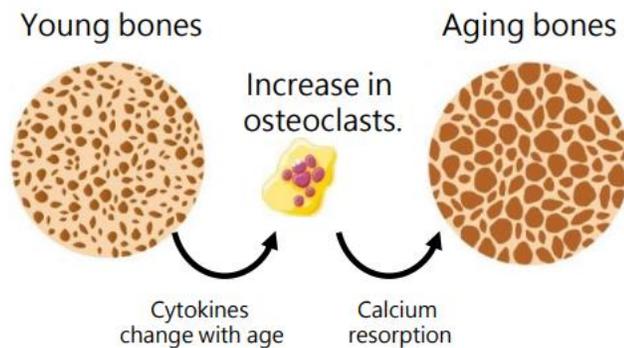
數據及結果表公司所有內部文件 - 請勿外泄及傳播

It has been experimentally confirmed that VeCollal II can promote the differentiation of mesenchymal stem cells into osteoblasts, increasing stem cell differentiation by 30%.



## VeCollal II inhibits the differentiation and maturation of osteoclasts.

It has been proven in experiments that VeCollal II can reduce the differentiation and maturation of osteoclasts, lowering the differentiation of mononuclear cells by 70%.

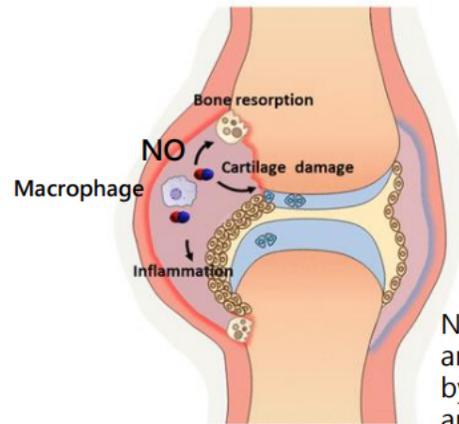


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## VeCollal II can reduce bone inflammatory factors.

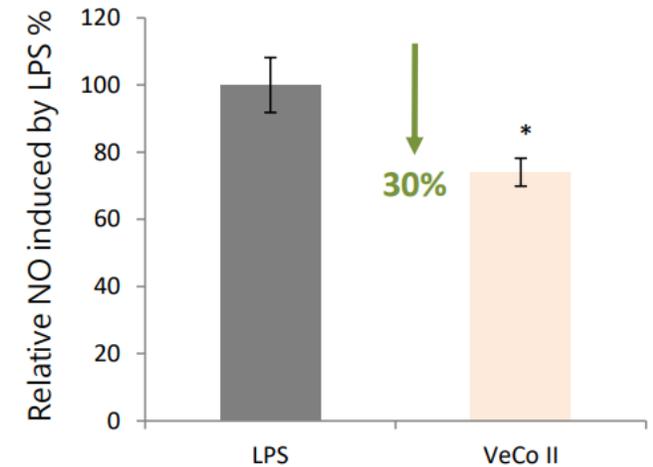
VeCollal II can inhibit the production of nitric oxide (NO) by inflammatory macrophages, thus reducing the secretion of inflammatory substances and bone infiltration.



NO acts on rheumatoid arthritis and osteoporosis, characterized by increased NO production and activation of cytokines.

Immunology . 2001 Jul;103(3):255-61.

研究數據及結果為公司所有內部文件

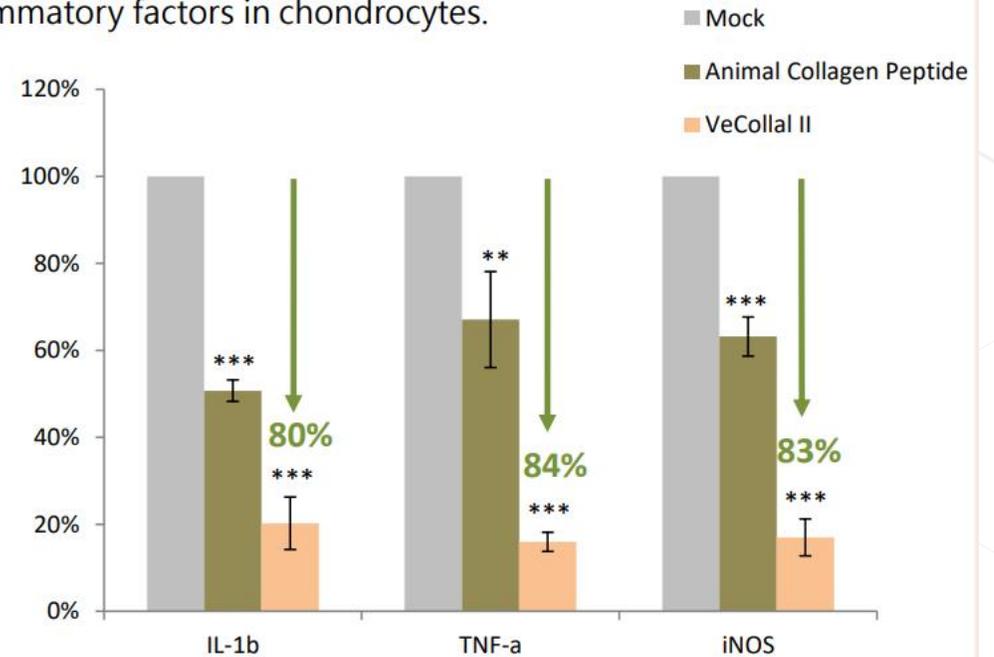
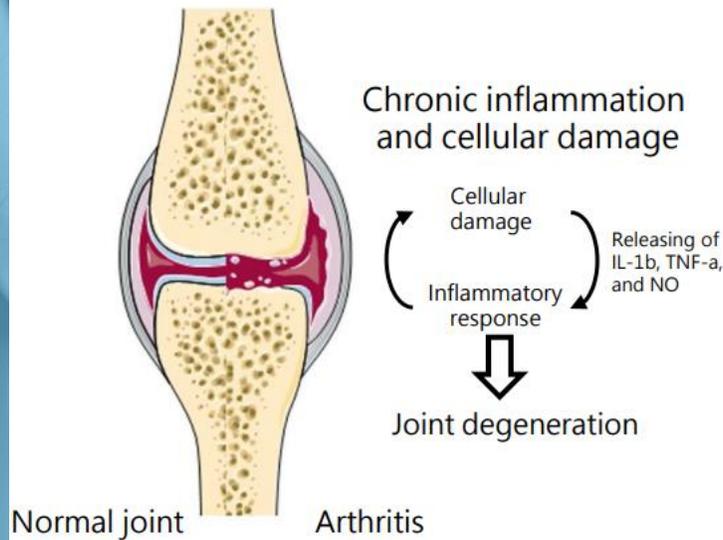


Compared to the Mock group, the LPS group (200ng/ml) significantly increased the content of NO (\* indicates  $p < 0.05$ ).

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## VeCollal II reduces the inflammatory response of chondrocytes.

VeCollal II can significantly reduce several inflammatory factors in chondrocytes.



# In Vivo Trial



## **SAMPLE**

- VeCollal II sachet (5 g/day)

## **DOSAGE**

- 1 sachet/day

## **SUBJECTS**

- Total 10 adults

## **INCLUSION CRITERIA:**

- Above 20 years old.
- Adults with joint discomfort or has high risk for bone fracture (low bone mineral density, postmenopausal women, age  $\geq$  65 years old).

## **METHOD**

A self-controlled trial was conducted. The subjects were informed to consume 1 pack of the sample before meal daily for 3 months. The bone density values and blood samples were collected at month 0 and month 3. The self-assessment questionnaires were collected at month 0, month 1 and month 3.

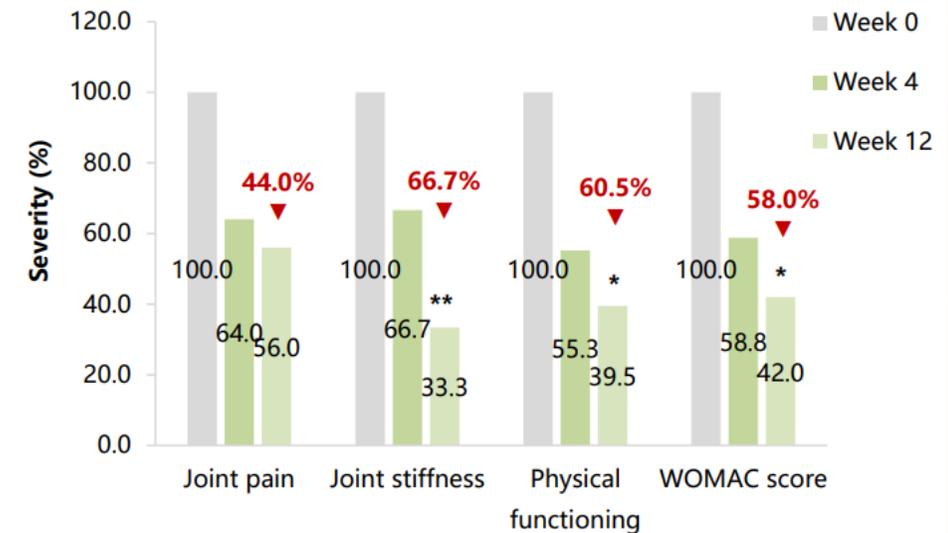
## **TEST ITEM**

- Bone density scan-spine (Dual-energy X-ray absorptiometry, DEXA): T-score, Z-score
- Bone markers: serum beta-Crosslaps ( $\beta$ -CTX) level
- Self-assessment questionnaire: WOMAC Osteoarthritis index

## VeCollal II can help alleviate joint discomforts

- After taking VeCollal II sachet for 12 weeks, subjects felt their severity of the joint pain, stiffness and physical functioning were improved. The average WOMAC score of the subjects was reduced by 58.0%.

The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) is a widely used, proprietary set of standardized questionnaires used by health professionals to evaluate the condition of subjects with osteoarthritis of the knee and hip, including pain, stiffness, and physical functioning of the joints.

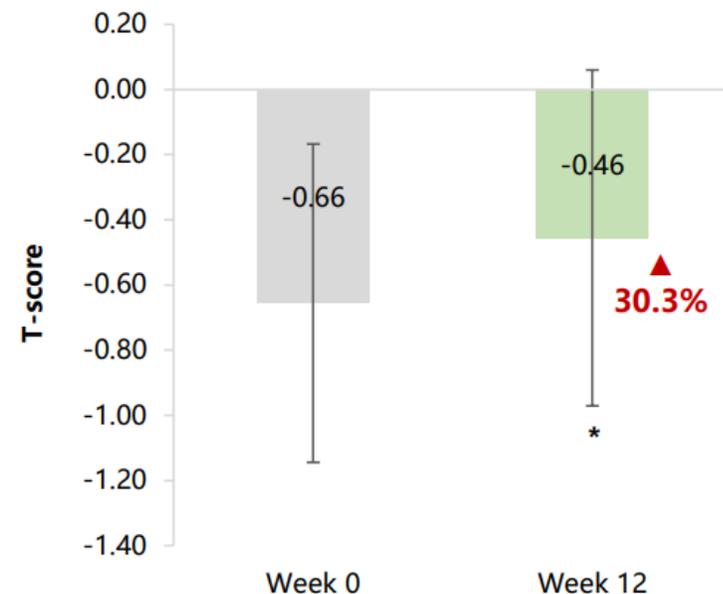


## VeCollal II can help increase bone mineral density

- After taking VeCollal II sachet for 12 weeks, the T-score of the subjects was significantly increased from -0.66 to -0.46, the change rate was 30.3%. The ratio of the subjects who had an effective improvement to the total participants was 77.8%.

A t-score reflects your bone mineral density (BMD) compared with the average BMD of a young, healthy adult of the same sex. T-scores can be used to diagnose osteopenia and osteoporosis.

T-score range	Description
-1 and above	Normal bone density
Between -1 and -2.5	Osteopenia (below normal BMD)
-2.5 and lower	Osteoporosis (low BMD)

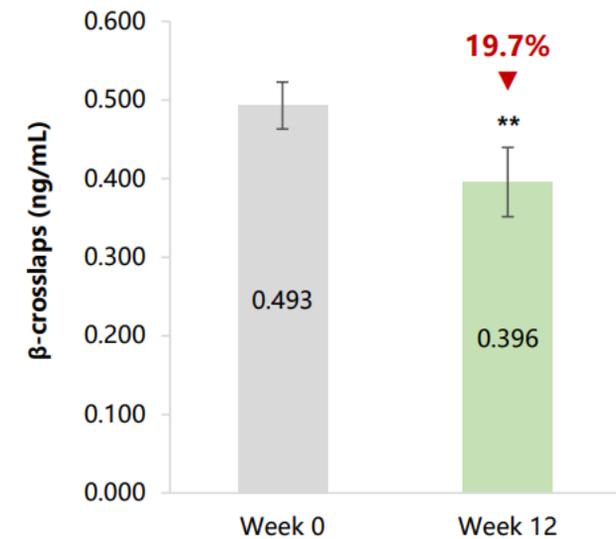


## VeCollal II can help reduce bone resorption

- After taking VeCollal II sachet for 12 weeks, the blood  $\beta$ -crosslaps level of the subjects was significantly decreased by 19.7%. The ratio of the subjects who had an effective improvement to the total participants was 87.5%.

$\beta$ -crosslaps (CTx), the degradation products of type I collagen cross-linked telopeptide, reflects the level of bone resorption and it can also reflect the degree of the injury of the bone tissues.

<b>Female</b>	<b>Reference range</b>
Premenopause	0.136-0.689
Postmenopause	0.177-1.015
<b>Male</b>	<b>Reference range</b>
< 30 years old	0.148-0.967
30-70 years old	0.132-0.936
> 70 years old	0.118-0.776

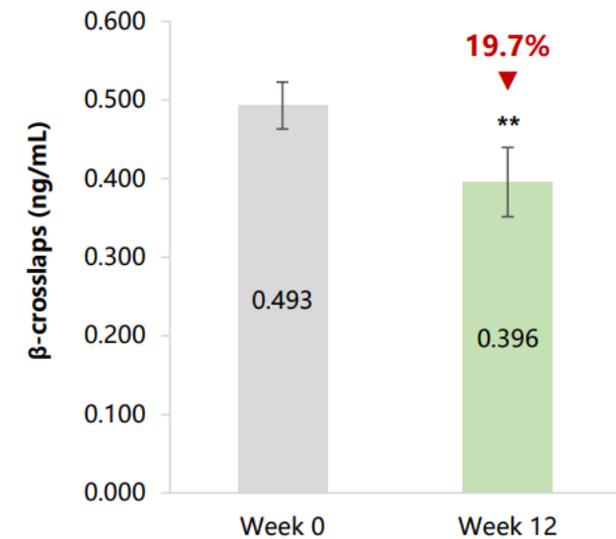


## VeCollal II can help reduce bone resorption

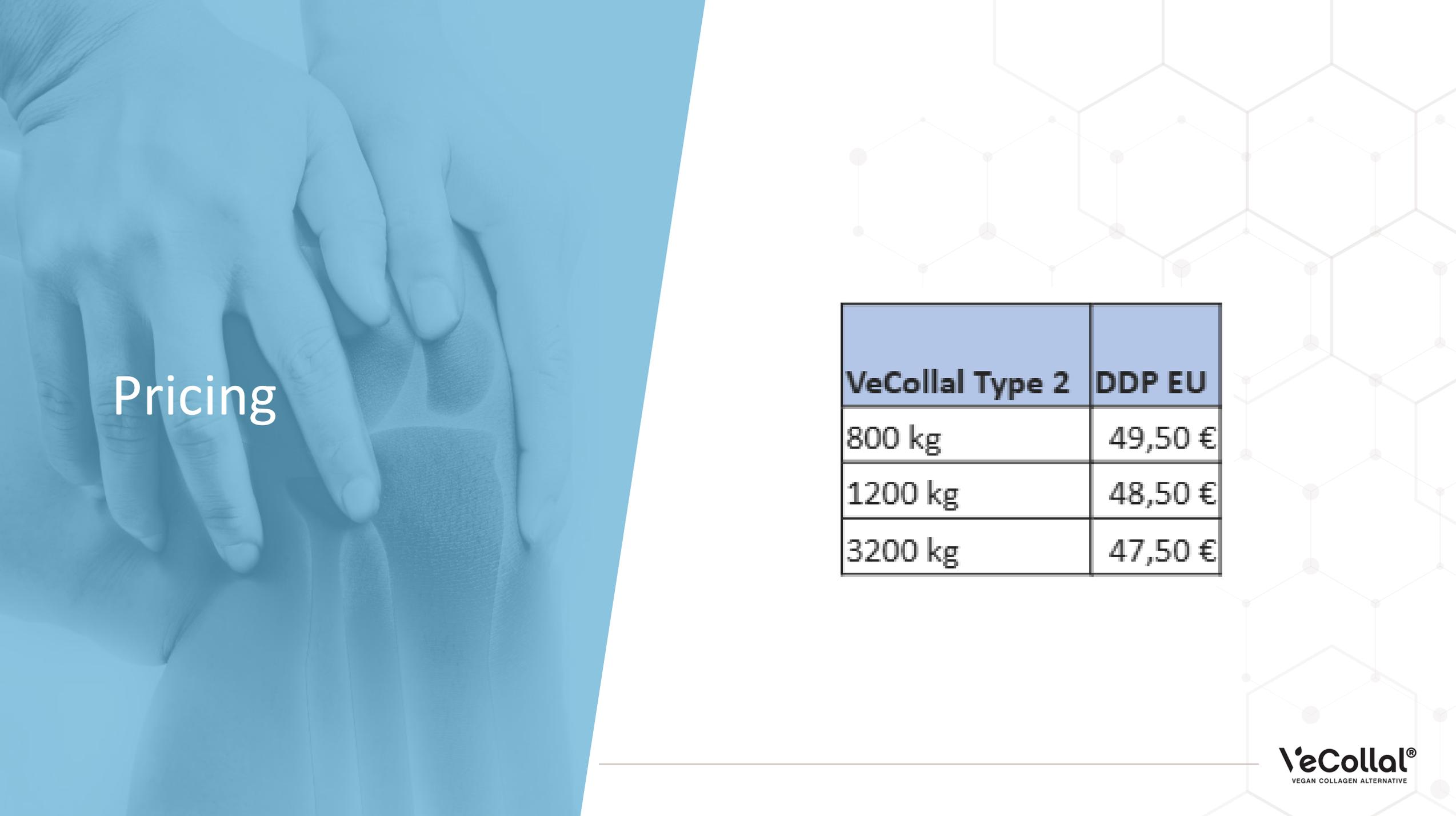
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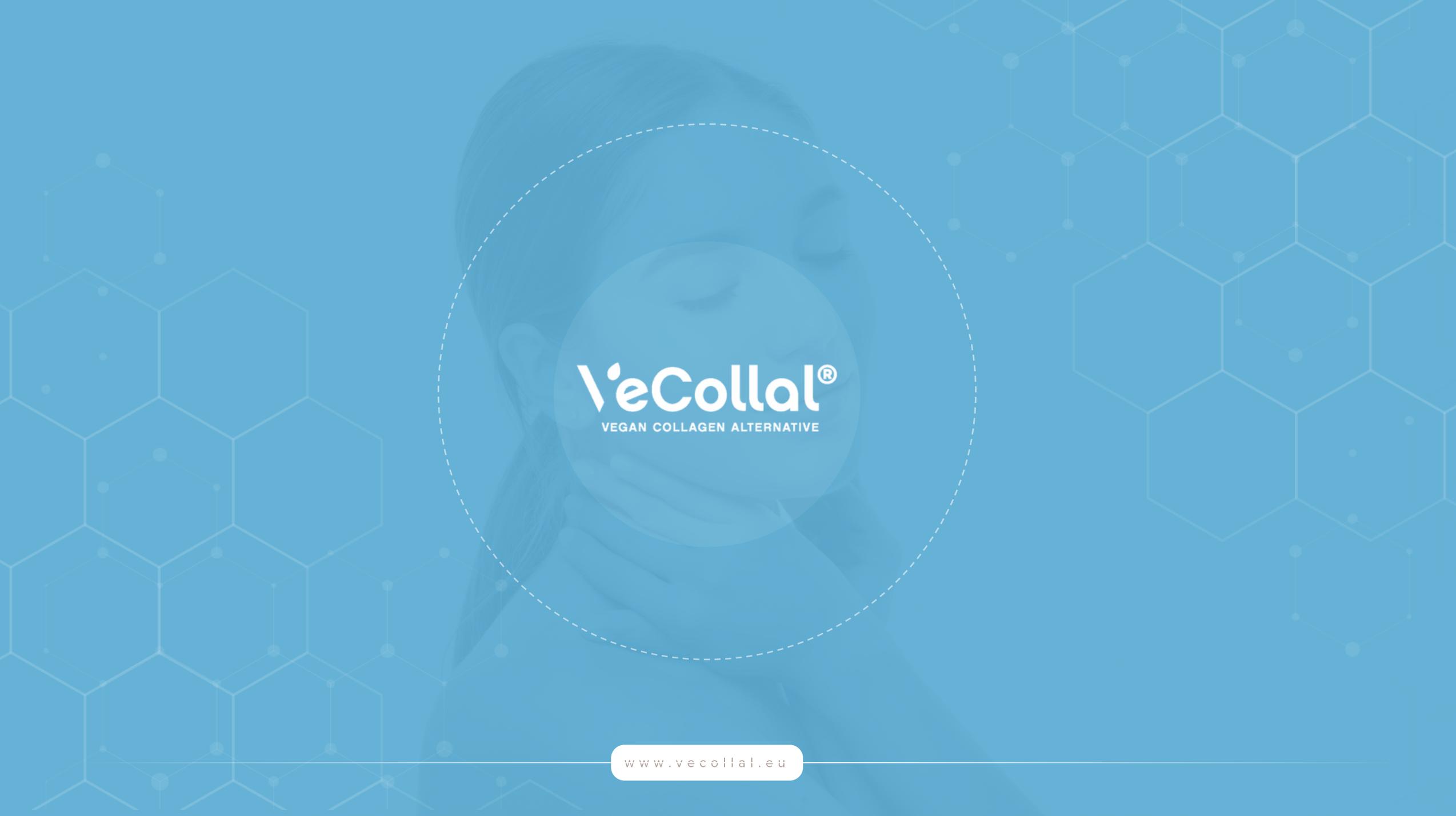






# Pricing

<b>VeCollal Type 2</b>	<b>DDP EU</b>
800 kg	49,50 €
1200 kg	48,50 €
3200 kg	47,50 €



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