



OUR SCIENCE, YOUR SUCCESS

Powered by **BIORESOURCE DATA MINING**

TCI透過獨家的生物挖礦開發模組，
專利原料及產品配方皆可快速產出大量科學驗證數據支持

產品在廣告宣傳必需遵守各國法規

TCI uses BIORESOURCE DATA MINING in developing
patent materials and product formula, to generate mass supportive scientific data.

The advertising of products must follow local regulations.

Key Ingredient



VeCollal®
VEGAN COLLAGEN ALTERNATIVE

VeCollal type II

Vegan Collagen Alternative Type II

The world's only scientifically-based, non-GMO plant-based collagen formula, designed specifically for joint and bone health, with type II collagen amino acids.

Joint Cartilage Rejuvenation

Activation of Chondrocyte Type II Collagen Gene

Promotion of Chondrocyte Type II Collagen Secretion - Coming soon

Promotion of Chondrocyte Hyaluronic Acid Secretion

Bone Health and Anti-aging

Activation of Osteoblasts

Inhibition of Osteoclasts

Reducing Joint Inflammation and Degeneration

Inhibition of NO Inflammatory Factors Released by Joint Macrophages

Lowering of Cartilage Inflammatory Factors IL-1 β , TNF- α , and iNOS



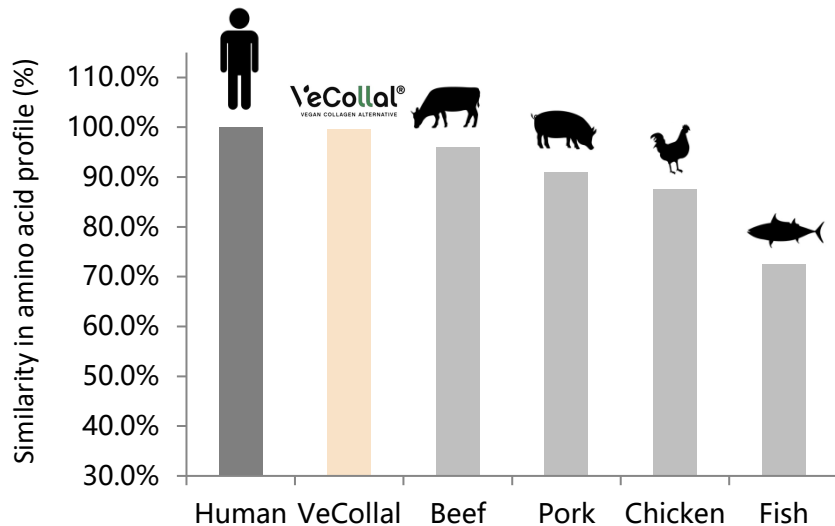
Biomimetic of human Collagen

VeCollal has an amino acid composition that mimics human collagen.

Type I collagen amino acid sequence analysis

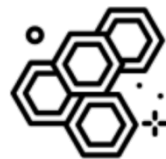
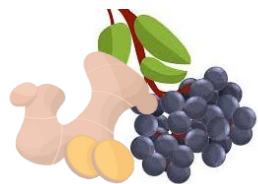
Human	159	APQLSYGYDEKSTGGISVPPGPMGSPGPRGLPGPPGAPGPQGFQGPPEPGEPPGASGPMGF	220
Porcine	162	APQLSYGYDEKSTAG-ISVPPGPMGSPGPRGLPGPPGAPGPQGFQGPPEPGEPPGASGPMGF	222
Bovine	159	APQLSYGYDEKSTG-ISVPPGPMGSPGPRGLPGPPGAPGPQGFQGPPEPGEPPGASGPMGF	219
Chicken	149	APQMSYGYDEKSTAG-VAVPGPMGPAGPRGLPGPPGAPGPQGFQGPPEPGEPPGASGPMGF	209
Fish	151	SPQMSYVDHSSSG-PAVPGPMGPMGARGPPGAGYSGGPQGMPPAGEPGEPPGATGPMGF	211
Human	221	PPGPPGKNGDDGEAGKPRPGERGPPGQGARGLPGTAGLPGMKHRRGFSGLDGAAGDA	282
Porcine	223	PPGPPGKNGDDGEAGKPRPGERGPPGQGARGLPGTAGLPGMKHRRGFSGLDGAAGDA	284
Bovine	220	PPGPPGKNGDDGEAGKPRPGERGPPGQGARGLPGTAGLPGMKHRRGFSGLDGAAGDA	281
Chicken	210	PAGPPGKNGDDGEAGKPRPGERGPPGQGARGLPGTAGLPGMKHRRGFSGLDGAAGDA	271
Fish	212	PVGPPEGKNGDDGEAGKPRPGERGAGAGPQGARGLPGTAGLPGMKHRRGFSGLDGAAGDA	273
Human	283	GPKGEPGSPGENGAPGQMGPRGLPGERGRPGAPGAGARGNDGATGAAGPPGPTGPAGP	344
Porcine	285	GPKGEPGSPGENGAPGQMGPRGLPGERGRPGPPGAG-----PTGPAGP	331
Bovine	282	GPKGEPGSPGENGAPGQMGPRGLPGERGRPGAPGAGARGNDGATGAAGPPGPTGPAGP	343
Chicken	272	GPKGEPGSPGENGAPGQMGPRGLPGERGRPGSPGAGARGNDGAPGAAGPPGPTGPAGP	333
Fish	274	GPKGEPGSPGENGIPGALGLRGLPGERGRPGSPGAGARGNDGTPAGPPGPTGPAGP	335
Human	345	PPGAVGAKGEAGPQGRGSEGGVGRGEPGPPGAGAAAGPAGNPGADGQPPGAKGANGAPG	405
Porcine	332	PPGAVGAKGEAGPQGRGSEGGVGRGEPGPPGAGAAAGPAGNPGADGQPPGAKGANGAPG	392
Bovine	346	PPGAVGAKGEAGPQGRGSEGGVGRGEPGPPGAGAAAGPAGNPGADGQPPGAKGANGAPG	404
Chicken	334	FPGAAGAKGETGPQARGSEGGVGRGEPGPPGAGAAAGPAGNPGADGQPPGAKGATGAPG	394
Fish	336	FPGAAGAKGETGPAGRGSEGGVGRGEPGPNPGAPAGAAAGPAGADGQPPGAKGANGAAG	396

Data from NCBI (The National Center for Biotechnology Information)

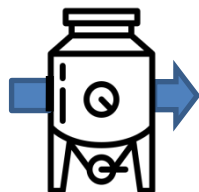


VeCollal[®] The Vegan Collagen Alternative Type II

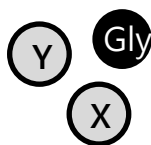
VEGAN COLLAGEN ALTERNATIVE



Bioactive ingredients
from plant



Plant-based
Collagen Amino acids



Fermented Collagen Alternative: A Key to a Sustainable Future

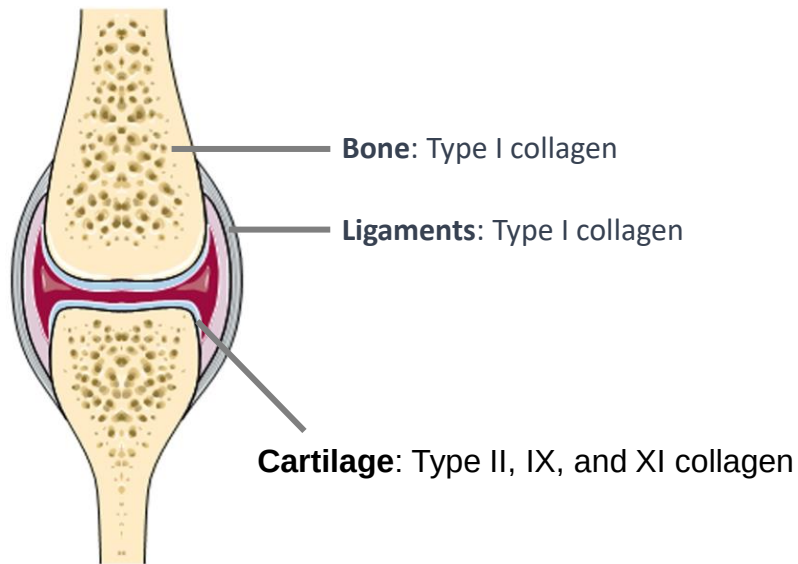


VeCollal®
VEGAN COLLAGEN ALTERNATIVE

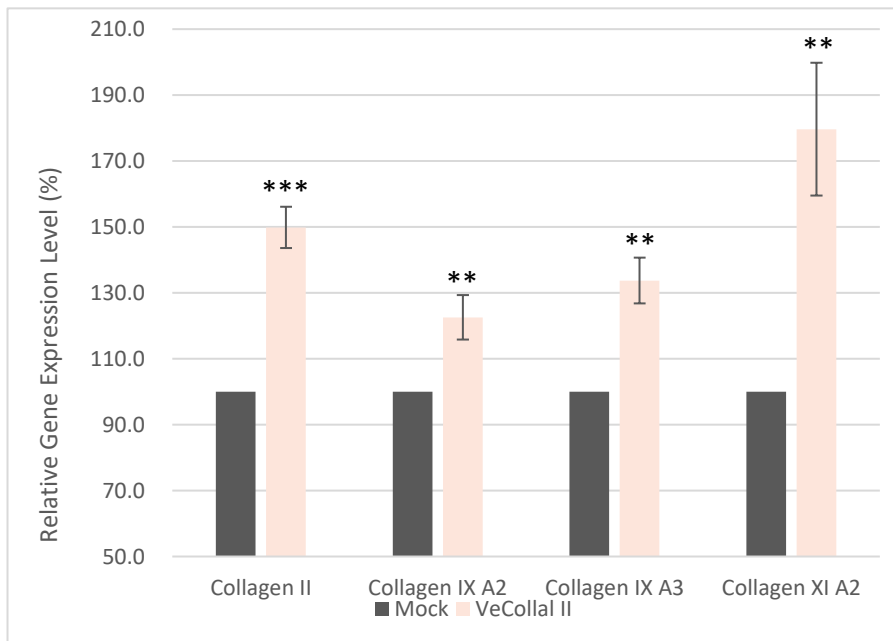
Better health for you
kinder planet for all



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



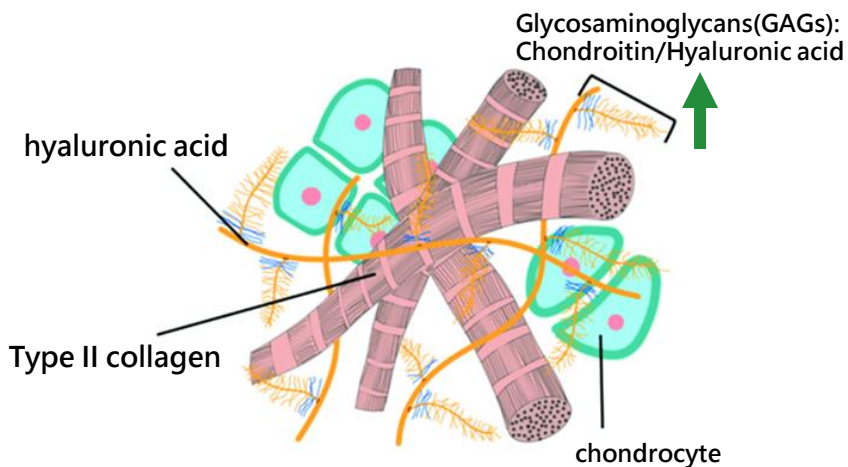
It has been experimentally confirmed that VeCollal II can activate up to 50% of the type II collagen gene in chondrocytes and promote joint repair.



VeCollal®

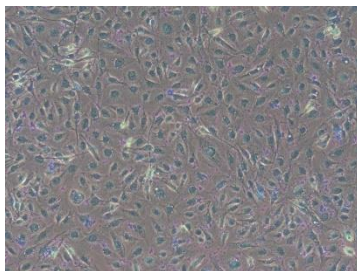
VEGAN COLLAGEN ALTERNATIVE

VeCollal II can promotes chondroitin and hyaluronic acid secretion from chondrocyte

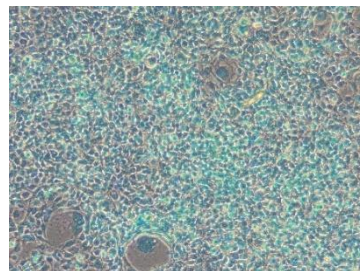


Components in Joint cartilage

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



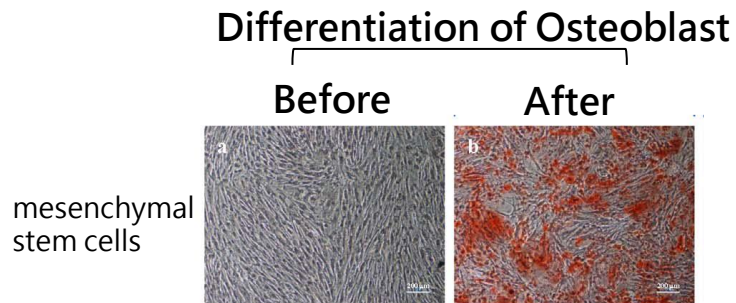
VeCollal II

The blue color indicates glycosaminoglycans stained by Alcian blue



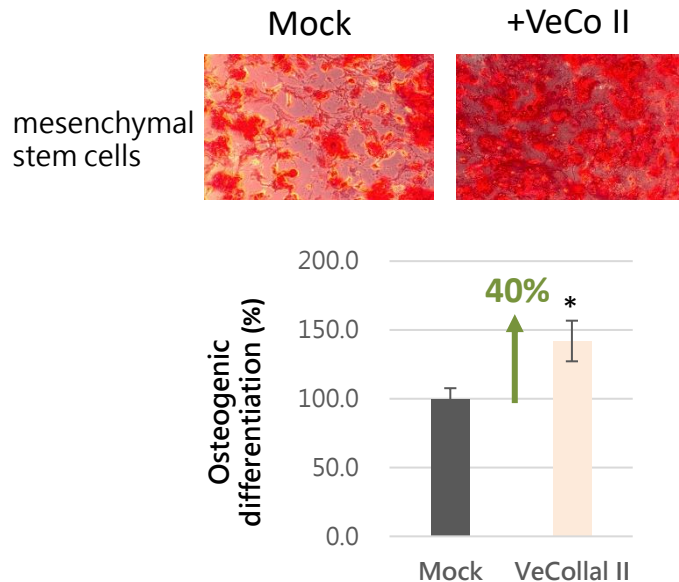
VeCollal II promotes osteoblast differentiation.

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



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

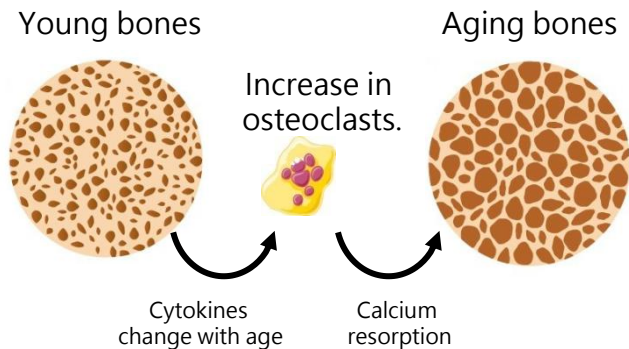
Induction of osteogenesis can be confirmed by staining calcium (red dye) to indicate bone formation.



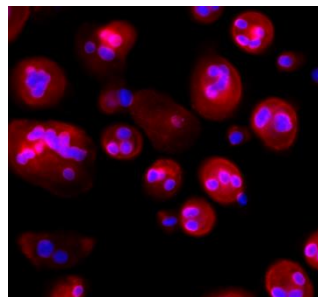


VeCollal II inhibits the differentiation and maturation of osteoclasts.

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%.

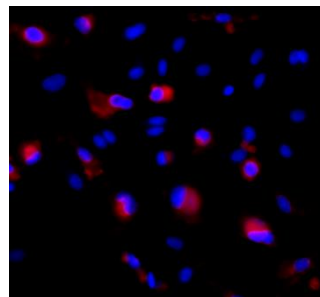


Mock



Mature multinucleated osteoclasts

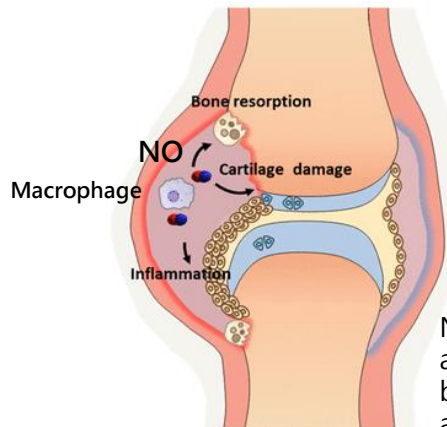
+VeCo II



Undifferentiated mononuclear cells

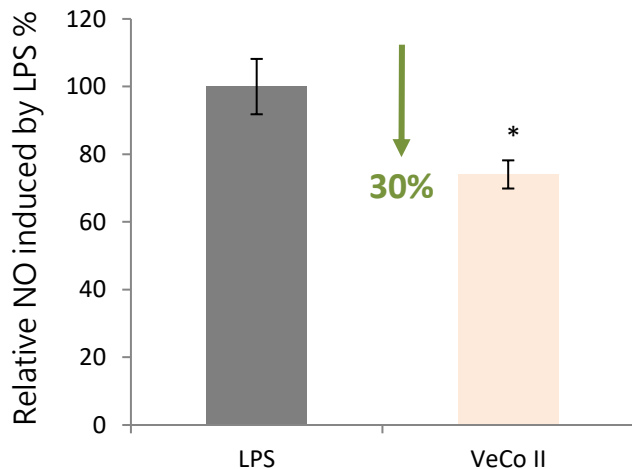
VeCollal II can reduce bone inflammatory factors.

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.

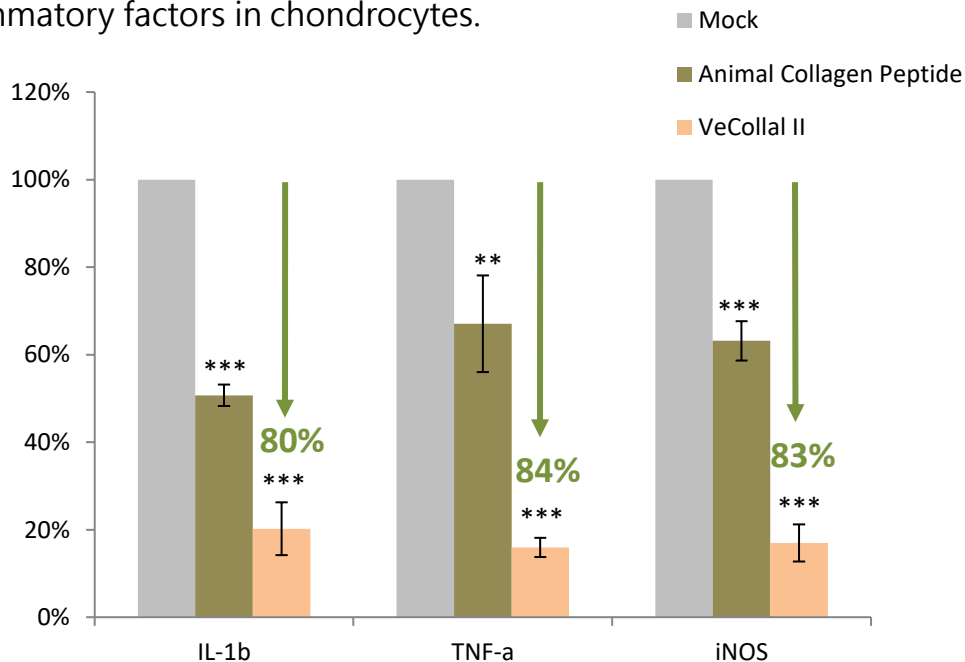
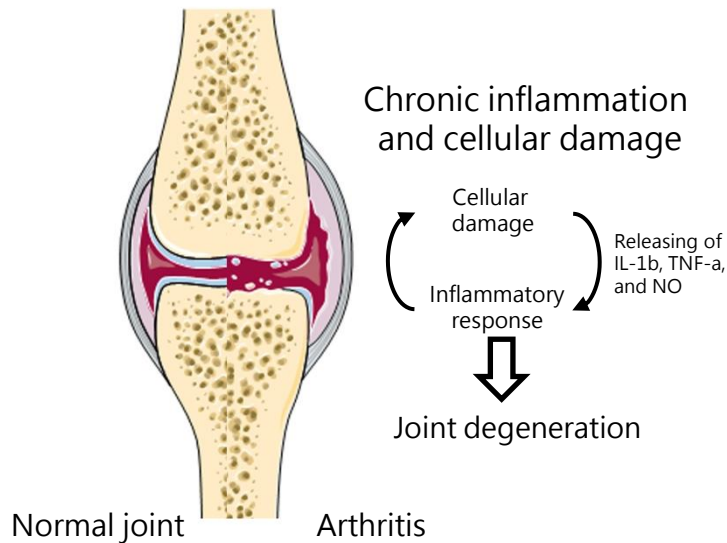


Compared to the Mock group, the LPS group (200ng/ml) significantly increased the content of NO (* indicates $p < 0.05$).



VeCollal II reduces the inflammatory response of chondrocytes.

VeCollal II can significantly reduce several inflammatory factors in chondrocytes.





Human Trial

Preface: The aim of the study is to evaluate the efficacy of VeCollal II on bone and joint health.

- ❑ Sample:
 - VeCollal II sachet (5 g/day)
- ❑ Dosage: 1 sachet/day
- ❑ Subjects: Total 10 adults
 - Inclusion criteria:
 - ① Above 20 years old.
 - ② Adults with joint discomfort or has high risk for bone fracture (low bone mineral density, postmenopausal women, age ≥ 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 (β -CTx) level
 - Self-assessment questionnaire: WOMAC Osteoarthritis index

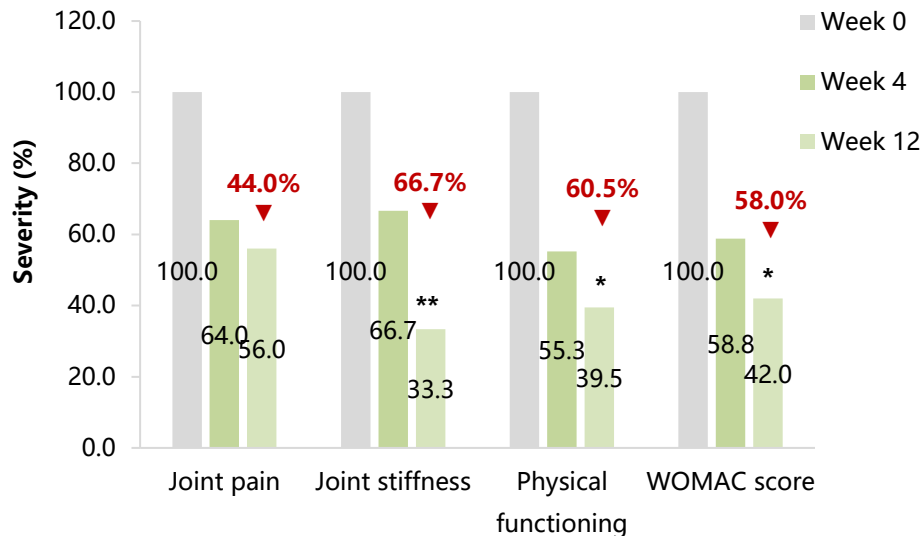


*Human trial*

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.





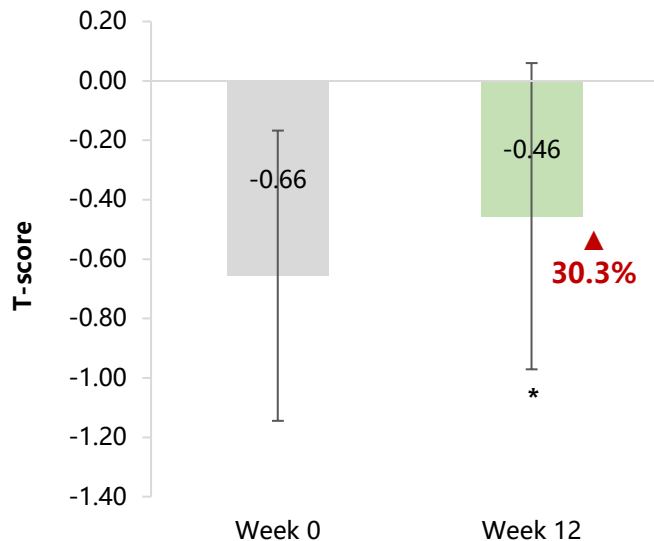
VeCollal II can help increase bone mineral density

- 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)



n=9, Compare with baseline: *, $p < 0.05$



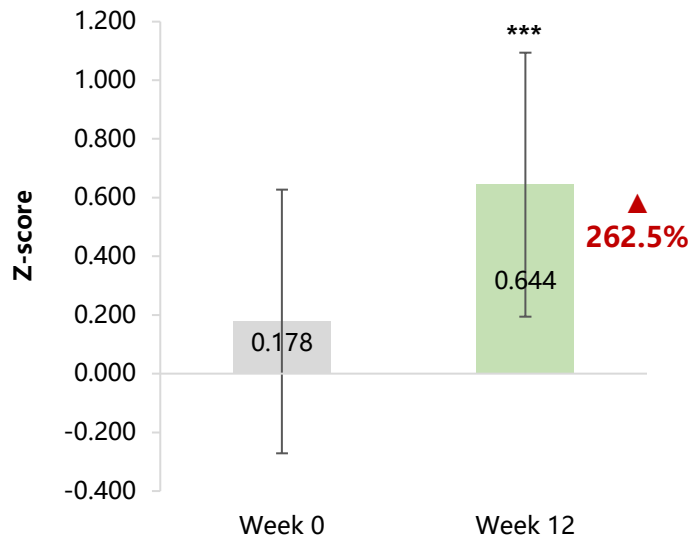
VeCollal II can help increase bone mineral density

- After taking VeCollal II sachet for 12 weeks, the Z-score of the subjects was significantly increased from 0.178 to 0.644, the change rate was 262.5%. The ratio of the subjects who had an effective improvement to the total participants was 100%.

A z-score compares your BMD with the average BMD in your own age group, taking both sex and body mass index (BMI) into account.

This score is more useful for diagnosing secondary osteoporosis, especially for children and younger adults.

Z-score range	Description
-1.5 and above	Typical BMD for peer group
Lower than -1.5	Atypical BMD, needs investigation



n=9, Compare with baseline: ***, $p < 0.001$



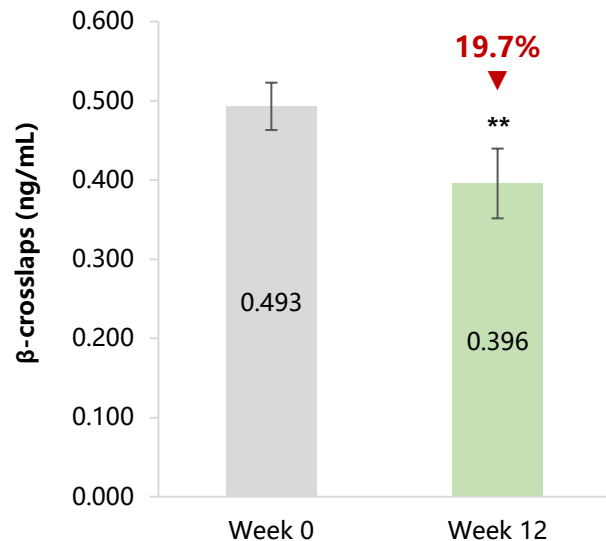
Human trial

VeCollal II can help reduce bone resorption

- After taking VeCollal II sachet for 12 weeks, the blood β -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%.

β -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.

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



n=8, Compare with baseline: **, $p < 0.01$

IBD Data sheet

Name : VeCollal® type II

Area : TW / US / EU

Applicable Types: Powder

Recommended Dosage: Powder– 5g/day

Vegetarian Category: Vegan

Trademark :



TCI NO. 30300150 VeCollal type II

Reference

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Mol. Cell. Biochem. 1997, 169, 125–134.

2. Vitamin C prevents Oxidative Stress Induced Chondrocyte Dysfunction

Ther Adv Chronic Dis. 2021 Oct 20;12:20406223211047026.

3. Efficacy of Vitamin C on Type II Collagen in Cartilage

Int J Mol Sci. 2016 Dec 27;18(1):38.

4. Effects of Amino Acids on Knee Joint Conditions

Nutrients 2022, 14(17), 3628



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