ULTRA HIGH

Clinical trial success (Cell and animal test complete)

Many SCI-level papers Cross-validation

No chemical addition fermentation

Natural substance oysters

enzyme, fermentation absorption power up

Ultra High uses different materials from the market?

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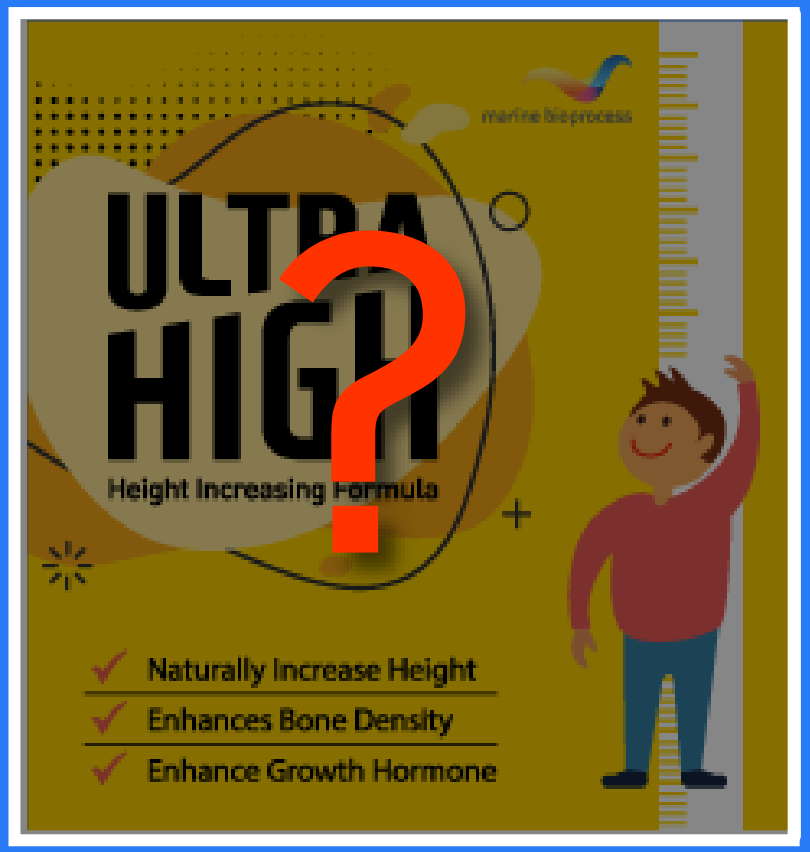
Growth functional materials in the global market are as follows.
In Korea, the same materials are sold like the world market.

Calcium absorption promoting products
(CPP, Bone Peptide, Milk peptide)

nutrition for growth
(A simple mixture of mineral complexes such as calcium and zinc and amino acids such as arginine)



ULTRA HIGH is just for children's height growth

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ULTRA HIGH ?

- ✓ The lactic acid bacteria fermentation method using oysters from the clean sea, an eco-friendly material, has obtained international patents in Korea, the United States, Japan, and Europe.
- ✓ Excellent height growth efficacy has been recognized through international clinical laboratory standards (IRB) and clinical trials at the National University Hospital
- ✓ Scientific cross-validation by Biomarker in SCI-level international journals has also been recognized for its effectiveness in improving child height and osteoporosis!

Introducing natural resources, oysters from the sea!

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Oysters are a superfood with a variety of nutrients.!

- ✓ About 50% protein (dry base)
- ✓ Glutamic acid 4.8% (dry base), a precursor of GABA (γ-aminobutyric acid) ☞ Growth hormone strengthening functional ingredient involved in height growth and osteoporosis
- ✓ Contains 4.2% of natural amino acid taurine (dry base) ☞ Antioxidant, fatigue recovery, stress relief, and cardiovascular effects
- ✓ Contains 0.35% (dry base) of zinc (Zn), an essential mineral for improving endurance and hormonal activity
- ✓ In addition, it is rich in essential minerals such as glycogen, vitamins and iron

Lactobacillus fermented oyster extract FO

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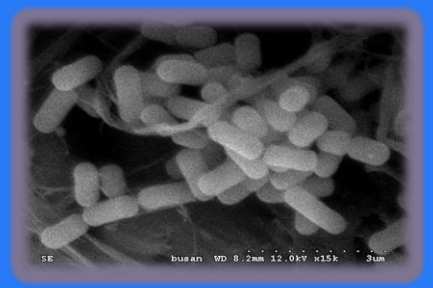
❖ Oyster, an eco-friendly material, meets a patented fermentation method using our specialized lactic acid bacteria
It has been reborn as lactic acid bacteria fermented oyster extract (FO).

Korea raw oysters



Lactobacillus brevis BJ20

enzyme (alcalase) digestion + lactic acid bacteria (L. brevis BJ20) Fermentation process

Specialized lactic acid bacteria fermentation

zymolysis

Spray&Dry

Korean Farmed Oysters Lactobacillus fermentation new material

- Composition for height growth comprising fermented oyster extract (Patent Application 10-2020-0149129)
- Composition for improving bone health containing functional fermented product using oysters (Patent registration 10-2132862, 4 international patent applications)
- Composition for preventing and treating muscle disease or improving muscle function, including functional fermented product using oysters (Patent Registration 10-2136886)

FO Fermented Oyster by Lactobacillus

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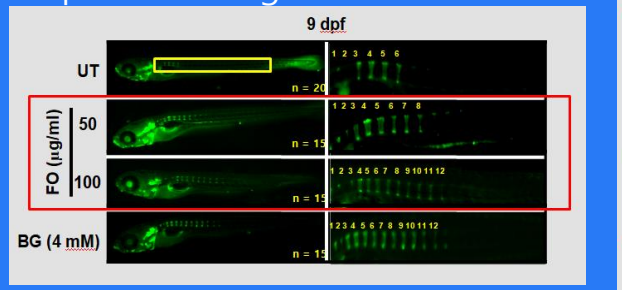
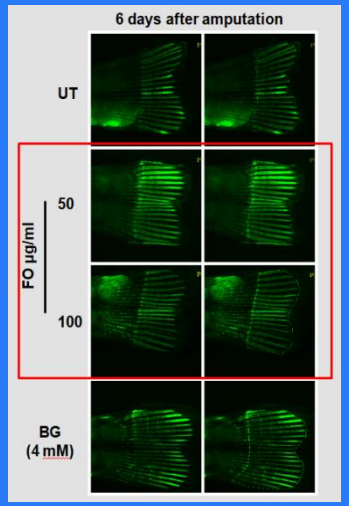
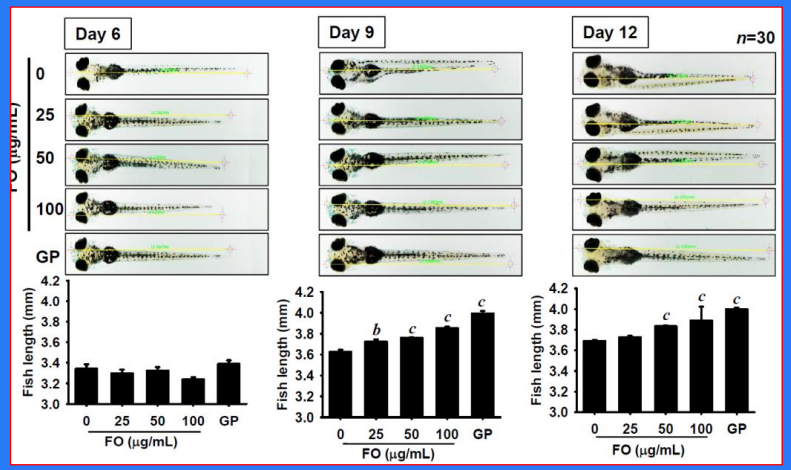
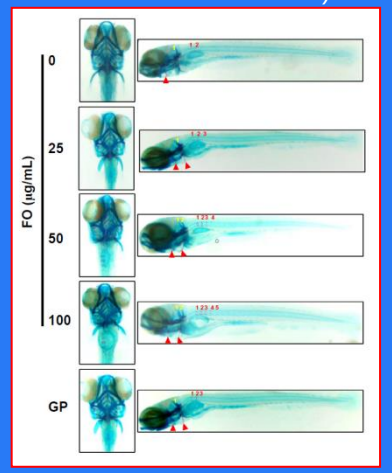
Korea patent application
Composition for improving bone health including functional fermented product using oysters (10-2018-0069132)
Composition for improving muscle function including functional fermented product using oysters (10-2018-0069112)
International patent application
USA: 1018649290000, EURO: EP19180523,
Japan: 2019-111568

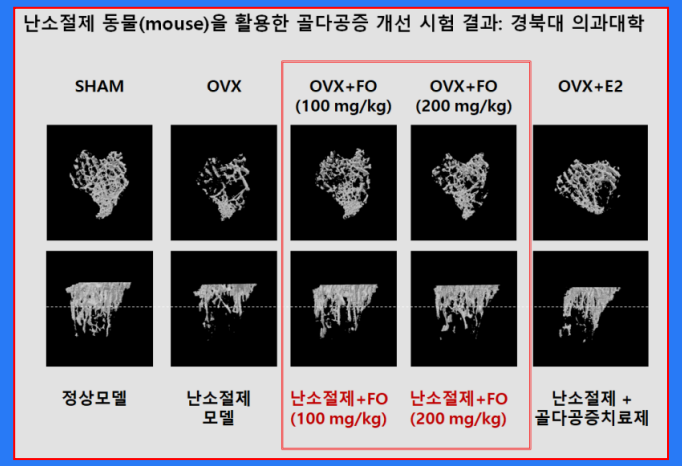
『Improvement of exercise ability』 (1st clinical trial completed)
Clinical trial of 『Children's Height Growth』, Pusan National University Oriental Medicine Hospital: Successful clinical trial in April 2020)
『Muscle function improvement』 clinical trial, Pusan National University Yangsan Hospital: end in October 2020, success),2nd trial scheduled for March 2021
『Bone Health』 (IRB approval in progress, clinical trial in December 2021)
『Improvement of exercise ability and endurance』 (Clinical trial in December 2021)











Efficacy verified by cross-validation

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biomolecules

MDPI

Article

Fermented Oyster Extract Promotes Osteoblast Differentiation by Activating the Wnt/β-Catenin Signaling Pathway, Leading to Bone Formation

Ilandarage Menu Neelaka Molagoda [1], Wisurumuni Arachchilage Hasitha Maduranga Karunarathne [1], Yung Hyun Choi [2], Eui Kyun Park [3], You-Jin Jeon [1], Bae-Jin Lee [4], Chang-Hee Kang [5] and Gi-Young Kim [1,*]

nutrients

MDPI

Article

Fermented Oyster Extract Prevents Ovariectomy-Induced Bone Loss and Suppresses Osteoclastogenesis

Hye Jung Ihn [1], Ju Ang Kim [2], Soomin Lim [2], Sang-Hyeon Nam [2], So Hyeon Hwang [2], Jiwon Lim [2], Gi-Young Kim [3], Yung Hyun Choi [4], You-Jin Jeon [3], Bae-Jin Lee [5], Jong-Sup Bae [6], Yeo Hyang Kim [7] and Eui Kyun Park [2,*]

Journal Pre-proof

Efficacy and safety of fermented oyster extract for height of children with short stature: A randomized placebo-controlled trial

Aram Jeong, Beom-Chan Park, Hee-Yeon Kim, Jun-Yong Choi, Jinhong Cheon, Joung-Hyun Park, Bae-Jin Lee, Kibong Kim

PII: S2213-4220(20)30328-0
DOI: https://doi.org/10.1016/j.imr.2020.100691

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Open Access Article

Fermented Oyster Extract Promotes Insulin-Like Growth Factor-1-Mediated Osteogenesis and Growth Rate

by Ilandarage Menu Neelaka Molagoda [1], Jayasingha Arachchige Chathuranga Chanaka Jayasingha [1], Yung Hyun Choi [2], Eui Kyun Park [3], You-Jin Jeon [1], Bae-Jin Lee [4] and Gi-Young Kim [1,*]

[1] Department of Marine Life Science, Jeju National University, Jeju 63243, Korea
[2] Department of Biochemistry, College of Oriental Medicine, Dong-Eui University, Busan 47227, Korea
[3] Department of Oral Pathology and Regenerative Medicine, School of Dentistry, Institute for Hard Tissue and Biotooth Regeneration, Kyungpook National University, Daegu 41940, Korea
[4] Marine Bioprocess Co., Ltd., Busan 46048, Korea
* Author to whom correspondence should be addressed.

Mar. Drugs **2020**, *18*(9), 472; https://doi.org/10.3390/md18090472

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International Journal of Molecular Sciences

MDPI

Article

Protective Effects of Fermented Oyster Extract against RANKL-Induced Osteoclastogenesis through Scavenging ROS Generation in RAW 264.7 Cells

Jin-Woo Jeong [1], Sung Hyun Choi [2], Min Ho Han [3], Gi-Young Kim [4], Cheol Park [5], Su Hyun Hong [6,7], Bae-Jin Lee [8], Eui Kyun Park [9], Sung Ok Kim [10], Sun-Hee Leem [11], You-Jin Jeon [4] and Yung Hyun Choi [6,7,*]

molecules

MDPI

Article

Gamma Aminobutyric Acid-Enriched Fermented Oyster (*Crassostrea gigas*) Increases the Length of the Growth Plate on the Proximal Tibia Bone in Sprague-Dawley Rats

Hyesook Lee [1,2], Hyun Hwangbo [1,3], Seon Yeong Ji [1,2], Min Yeong Kim [1,2], So Young Kim [1,3], Da Hye Kim [1,4], Su Hyun Hong [1,2], Su Jeong Lee [5], Freshet Assefa [5], Gi-Young Kim [6], Eui Kyun Park [5], Joung-Hyun Park [7], Bae-Jin Lee [7], You-Jin Jeon [6] and Yung Hyun Choi [1,2,*]

International Journal of Environmental Research and Public Health

MDPI

Article

In Vitro and In Vivo Effects of Fermented Oyster-Derived Lactate on Exercise Endurance Indicators in Mice

Storm N. S. Reid [1], Joung-Hyun Park [2], Yunsook Kim [2], Yi Sub Kwak [3] and Byeong Hwan Jeon [1,*]

Proven effectiveness in clinical trials

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대한한방소아과학회지 제33권 제4호(2019년 11월)
J Pediatr Korean Med. November, 2019;33(4):37-46
ISSN 1226-8038(Print), 2287-9463(Online), https://doi.org/10.7778/jpkm.2019.33.4.37

발효굴추출물의 경구 섭취가 소아 신장 성장에 미치는 효과 및 안전성 평가를 위한 무작위배정, 이중눈가림, 위약 대조 인체적용시험: 인체적용시험 프로토콜

김희연[1,5] · 박범찬[1,5] · 천진홍[1,5] · 최준용[2,5] · 안병민[3] · 박정현[4] · 이배진[4] · 김기봉[1,5,*]

[1]부산대학교한방병원 한방소아과, [2]부산대학교한방병원 한방내과, [3]㈜제너럴바이오텍, [4]㈜마린바이오프로세스, [5]부산대학교 한의학전문대학원

Abstract

Randomized, Double-blind, and Placebo-controlled a Human Study for Growing of Stature via the Analysis of Effect of Ferment Oyster Extract: Study Protocol

Kim Hee-Yeon[1,5] · Park Beom-Chan[1,5] · Cheon Jin-Hong[1,5] · Choi Jun-Yong[2,5] · An Byeong-Min[3] · Park Joung-Hyun[4] · Lee Bae-Jin[4] · Kim Kibong[1,5,*]

[1]*Department of Korean Pediatrics, Pusan National University Korean Medicine Hospital*
[2]*Department of Korean Internal Medicine, Pusan National University Korean Medicine Hospital*
[3]*General Biotech,* [4]*Marine Bioprocess Co. Ltd.*
[5]*School of Korean Medicine, Pusan National University*

Objectives
The purpose of this study is to confirm the efficacy and safety of the treatment of with fermented oyster extract on height growth in children with short stature.

Methods
A total of 100 people, between 6 and 11 years old, will be participated in a randomized, double-blind, and placebo-controlled human study. The fermented oyster group will take 500 mg of fermented oyster extract once a day for 24 weeks. The placebo group will take 3400 mg of fructooligosaccharide as placebo once a day for 24 weeks. The outcomes of the intervention will be measured at the baseline, 6 week, 12 week, 18 week, and 24 week. The primary outcome is the changes in height from the baseline. The secondary outcomes are growth rate, height SDS, bone age, GH, IGF-1, IGFBP-3, osteocalcin, BALP, DPD, and LH.

Results
This trial was approved by the institutional review board of Pusan National University Korean Medicine Hospital (registry number: PNUKHIRB-2019002). Recruitment of the research participants will be opened from May 2019 till December 2019.

Conclusions
This study will provide clinical information to determine the efficacy and safety of the treatment with fermented oyster extract on height growth in children with short stature

KIOM Integrative Medicine Research
Volume 10, Issue 2, June 2021, 100691

Original Article

Efficacy and safety of fermented oyster extract for height of children with short stature: A randomized placebo-controlled trial

변수	관찰된 값		기준선에서 변경		효과 크기
	제어($n = 50$)	실험($n = 50$)	제어($n = 50$)	실험($n = 50$)	
높이(cm)					
방문 2	124.14 ± 9.26	126.17 ± 10.61			
방문 3	125.09 ± 9.27	127.68 ± 11.02	0.95 ± 0.76	1.51 ± 1.37*	0.502
방문 4	125.80 ± 9.32	128.36 ± 11.01	1.66 ± 0.79	2.19 ± 1.49*	0.445
방문 5	126.37 ± 9.22	128.98 ± 11.17	2.23 ± 0.76	2.81 ± 1.71*	0.440
visit 6	127.06 ± 9.39	129.95 ± 11.22	2.91 ± 0.84	3.78 ± 1.88**	0.593
HV(cm/년)					
방문 3	8.25 ± 6.60	14.21 ± 11.68**	–	–	0.628
방문 4	6.33 ± 5.44	6.46 ± 5.48	–	–	0.025
방문 5	5.34 ± 5.20	5.80 ± 4.43	–	–	0.096
visit 6	6.38 ± 4.72	9.10 ± 4.49**	–	–	0.591
높이 SDS					
방문 2	-1.39 ± 0.54	-1.34 ± 0.57			
방문 3	-1.33 ± 0.56	-1.18 ± 0.62	0.06 ± 0.15	0.16 ± 0.22**	0.535
방문 4	-1.31 ± 0.56	-1.15 ± 0.63	0.08 ± 0.15	0.19 ± 0.24**	0.553
방문 5	-1.31 ± 0.56	-1.16 ± 0.63	0.08 ± 0.14	0.18 ± 0.25**	0.524
visit 6	-1.30 ± 0.56	-1.09 ± 0.62	0.09 ± 0.15	0.25 ± 0.26**	0.751

Information on FO related SCI-level papers

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	Paper Title	Paper online site (digital object identifier, DOI)
FO (Fermented Oyster extract)	1.Protective Effects of Fermented Oyster Extract against RANKL-Induced Osteoclastogenesis through Scavenging ROS Generation in RAW 264.7 Cells	Int. J. Mol. Sci. 2019, 20 (2019. 03.) https://doi.org/doi:10.3390/ijms20061439
	2.Fermented Oyster Extract Prevents Ovariectomy-Induced Bone Loss and Suppresses Osteoclastogenesis	Nutrients 2019, 11(2019. 6.) https://doi.org/10.3390/nu11061392
	3.Fermented Oyster Extract Promotes Osteoblast Differentiation by Activating the Wnt β-Catenin Signaling Pathway, Leading to Bone Formation	Biomolecules 2019, 9 (2019. 11.) https://doi.org/10.3390/biom9110711
	4.Effect of fermented oyster extract on growth promotion in Sprague-Dawley rats	Integrative Medicine Research, 9(4), 2020 (online 2020.4) https://doi.org/10.1016/j.imr.2020.100412
	5.GABA-enriched Fermented Oyster Increases the Length of the Growth Plate on the Proximal Tibia Bone in SD rats	Molecules 2020, 25, (2020. 09.) https://doi.org/10.3390/molecules25194375
	6.Fermented Oyster Extract Promotes Insulin-Like Growth Factor-1-Mediated Osteogenesis and Growth Rate	Marine Drugs 2020, 18 (2020.09) https://doi.org/10.3390/md18090472
	7. 발효굴추출물의 경구 섭취가 소아 신장 성장에 미치는 효과 및 안전성	The Journal of Pediatrics of Korean Medicine, 2019, 33 https://doi.org/10.7778/jpkm.2019.33.4.37
	8. Efficacy and safety of FO extract for height of children with short stature, A randomized pacebo-controlled trial	Integrative Medicine Research, 10 https://doi.org/10.1016/j.imr.2020.100691
	9. In Vitro and In Vivo Effects of Fermented oyster extract oyster-derived Lactate on Exercise Endurance indicators in mice	International Journal of Environmental Research and Public Health, 2020, 11 https://doi.org/10.3390/ijerph17238811

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