Natural support for complete bone health

MCHCal™

MICROCRYSTALLINE HYDROXYAPATITE CALCIUM

WAITAKI BIOSCIENCES

A DIVISION OF PHARMAZEN LIMITED

MCH-Cal™ contains biologically active growth factors, collagen, and other bone proteins to promote optimal bone health.

MCH-Cal™ More than just calcium

MCH-Cal™ is a totally natural ingredient supplying multiple bioactives that support overall bone health.

MCH-Cal™ Component	Benefit
Calcium	Promotes optimal bone mineral density
Type I Collagen	Supports bone strength and flexibilty
Amino Acids	Supports muscle maintenance and repair
Bone Stimulating Proteins (IGF I & II, TGF β, Osteocalcin)	Promotes bone remineralisation

MCH-Cal™ Research

Published scientific research on whole bone microcrystalline hydroxyapatite (MCHA), demonstrates its effectiveness at slowing loss of bone mineral density in post menopausal women, improving symptoms of bone pain in those with osteoporosis and slowing the progression of osteoporosis. Research has also shown that it works well as a complementary therapy to drug treatments such as raloxifene and estradiol.[1]

In an animal model of postmenopausal bone loss MCH-Cal™ supplementation was shown to reduce loss of bone mineral density compared to controls receiving a standard diet.

NATURAL SUPPORT FOR COMPLETE BONE HEALTH

MCH-Cal™ slowed the rate of bone mineral density loss at femur and lumbar spine sites by up to 8% and bone mineral content by up to 13% compared to controls as measured by DEXA[2]. *(Figure 1.)*

Studies at the University of Auckland demonstrated that bone proteins extracted from MCH-Cal™ were able to promote osteoblast differentiation and mineralisation in in-vitro models[3]. *(Figure 2.)*

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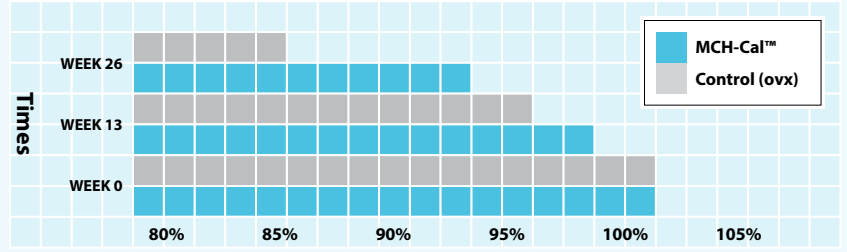
MCH-Cal™ Manufacture

MCH-Cal™ is manufactured only from safe, natural raw material sources - New Zealand free range, pasture fed and BSE free cattle. All animals have passed ante and post mortem veterinarian inspection at the time of processing.

Conversion of the raw material occurs at Waitaki's purpose built and fully export licensed factory in Christchurch, New Zealand.

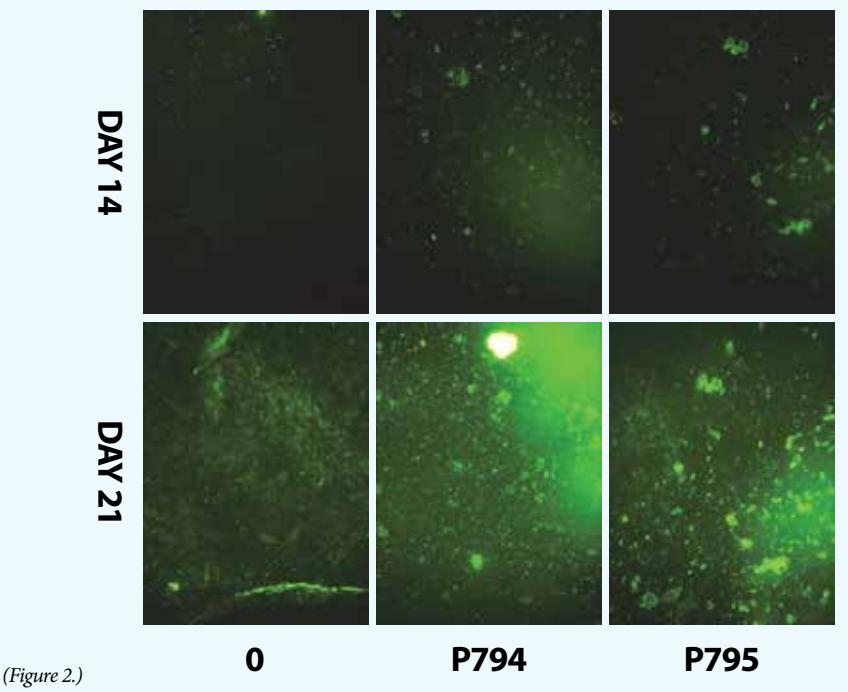
What's more, the gentle, proprietary, manufacturing process preserves the naturally occurring bioactives in MCH-Cal™ and ensures they are present in the correct physiological ratios. This makes MCH-Cal™ one of the most complete and effective bone health ingredients available today.

Effect of MCH-Cal™ Treatment on Loss of Bone Density at the Lumbar Spine 1 by using DEXA scanning.



(Figure 1.)

MCH-Cal™ particles increase osteoblast mineralisation as demonstrated through calcein incorporation.



(Figure 2.)

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MCH-Cal™

MCH-Cal™ Features

Produced exclusively to our proprietary process, using 100% New Zealand sourced raw materials, MCH-Cal™ is a bone derived, nutraceutical ingredient, delivering all the elements present in healthy bone tissue.

- Contains bioactive growth factors. These small peptides found in the protein fraction of MCH-Cal™ play an important role in bone remodeling by stimulating osteoblast formation and activity.
- Microcrystalline structure. MCH-Cal™ contains a minimum of 22% calcium and 9% phosphorous in a microcrystalline structure for improved absorbtion and bioavailability.
- Minimum of 22% bone protein, including up to 20% type I collagen and growth factors to enhance absorbtion and promote bone formation.
- Contains a range of trace minerals as well as glycosaminoglycans found naturally in healthy bone matrix.
- Independent testing verifies low levels of lead, making Waitaki's MCH-Cal™ compliant with stringent Californian propostion 65 requirements.

MCH-Cal™ Profile

Raw Material:	Fine free flowing powder
Partical size:	<850, <250, <150 and <74 micron
Colour:	White
Shelf life	3 years
Packaging:	25 kg net weight cartons

MCH-Cal™ Composition

Bioactive	mg per 1000mg capsule	mg per daily dose
Collagen Type 1	200	400
Calcium	250	500
Phosphorous	100	200
Trace Minerals	1.4	2.8
Growth Factors	0.6	1.2
Non-collagen bone proteins and amino acids	50	100

References:

1. Castelo-Branco C., Dávila Guardia J., Use of ossein-hydroxyapatite complex in the prevention of bone loss: a review. Climateric 2014; 17:1-9

2. The effect of oral MCH-Cal™ treatment on bone mineral density in ovariectomised rats. Animal Health Service Centre, Massey University. 2002.

3. Musson. DS, et.al., Osteogenic effect of the protein component extracted from hydroxyapatite based products. Department of Medicine, University of Auckland. 2012

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