CALCIUM FISH BONE POWDER
Specification

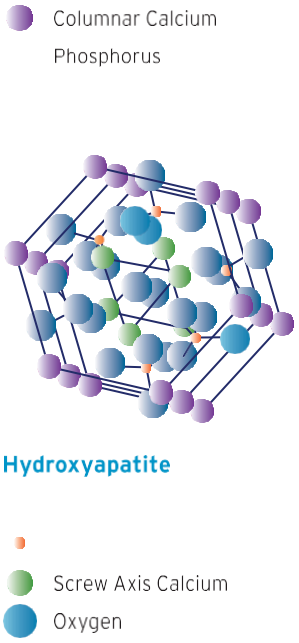
- rich in calcium, phosphorus & collagen
- helps support bone health & density

CALCIUM

Calcium has diverse biological roles. It supports the structural integrity and regulates metabolic functions in the body. It also helps in the signal transmission in the nerve cells, muscle contractions; regulates the activities of the enzymes and helps in normal clotting of blood. Although calcium is a major constituent of fish bone, the whole bone matrix is composed of a variety of other minerals including phosphorus, magnesium, trace elements and collagen. Calcium and phosphorus occur as a 2 to 1 ratio predominantly in crystalline structures called **hydroxyapatite**.

Fish bone is regarded as an important natural source of biological apatite compound since it contains a high source of minerals especially calcium and phosphorous. Processed fish bones improve the availability of the minerals present and can be used as a supplement material for health products and as an ingredient in feeds.

Calcium supplements can increase bone mineral density (BMD). Fish bone powder has naturally available calcium **hydroxyapatite** with its biocompatibility and great osteoconductive properties. Fish bone naturally has the correct ratio of calcium and phosphorus for better absorption.



Springfield International Limited
www.ilovedog.co.nz

KEY COMPONENTS OF CALCIUM FISH BONE (MCHC) POWDER

CALCIUM HYDROXYAPATITE

Bone health requires more than just calcium, fish bone is also rich in minerals, including phosphorus, magnesium and other trace elements. When all of the minerals in bone are naturally present in the right ratio, it then forms a crystalline structure called **hydroxyapatite**. Calcium **hydroxyapatite** from fish bone is considered to be the most bio available form of calcium.

COLLAGEN

Collagen makes up 30% of the protein in human bodies and can be found in the skin, joints, teeth, bones, tendons and blood vessels. Collagen helps to keep the joints fluid, teeth and bone strong. Collagen naturally stabilizes the body's immune system and helps neutralize the production of abnormal molecular structures known to be a major cause of joint misery and stiffness, especially in rheumatoid arthritis. Calcium Fish Bone (MCHC) Powder contains approximately 14% collagen. It may help in improving joint mobility and relieving stiffness. Pepsin digestion of fish bone yields fish collagen peptides, which have been shown in vitro to induce osteoblast activity, which would aid in repair of bone damage.

BENEFITS & FEATURES

- Highly bio available form of calcium and phosphorus
- Specially processed to retain all minerals and keep calcium and phosphorus intact in their natural physiological ratio of 2:1
- Contains marine collagen
- Contains other trace elements including magnesium, iron, and zinc

SUSTAINABILITY

Calcium Fish Bone (MCHC) Powder is manufactured by United Fisheries Ltd using fish that is caught according to the New Zealand quota management system and is from a sustainable fishing resource. Calcium rich, high collagen microcrystalline **hydroxyapatite** (MCHC) forms the basis for this high quality Calcium Fish Bone (MCHC) Powder. All extraction procedures meet the regulations and guidelines of Ministry of Primary Industries (MPI).

STUDIES

Maintenance of bone mass and integrity requires a tight balance between formation by osteoblasts and resorption by osteoclasts. In the bone, two types of cells are required to maintain a balance between creating new bone matrix and breaking down bone matrix. Osteoblasts are cells that build bone and osteoclasts are cells that break down bone matrix. In the body, osteoclasts and osteoblasts work in unison so that bone can grow and repair. In osteoporosis, bone is broken down more quickly than it is created.

A study conducted at Massey University on "The Effect of Fish Bone (MCHC) Powder on Osteoblast Function and Osteoclast - Precursor Differentiation" has shown that the powder has a significant effect on bone cells in vitro.

The results of this study showed that the MCHC powder reduced the amount of osteoclast forming. The powder had a positive effect on osteoblast function and inhibited osteoclast activity.

NUTRITIONAL INFORMATION

PHYSICAL FORM

Appearance	Off-white, fine, free-flowing powder
Particle size	<250 micron
Shelf Life	5 years
Packaging	10kg carton

TYPICAL ANALYSIS (PER 100 gm FISH BONE POWDER)

Protein	25.00 gm	Zinc	90 ppm
Calcium	25.13 gm	Manganese	17.5 ppm
Phosphorus	12.75 gm	Iron	6.2 ppm
Collagen	14.27 gm	Selenium	0.69 ppm
Magnesium	0.43 gm	Copper	0.18 ppm
Sulphur	0.25 gm	Boron	<5 ppm
Potassium	0.03 gm		

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