

Natural hydroxyapatite from bovine and fish bones, and its application in biomedicine

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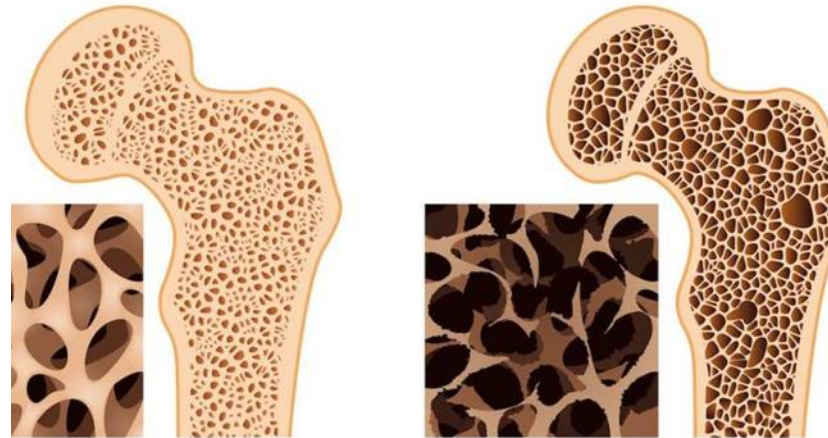
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Bone Fractures and Diseases



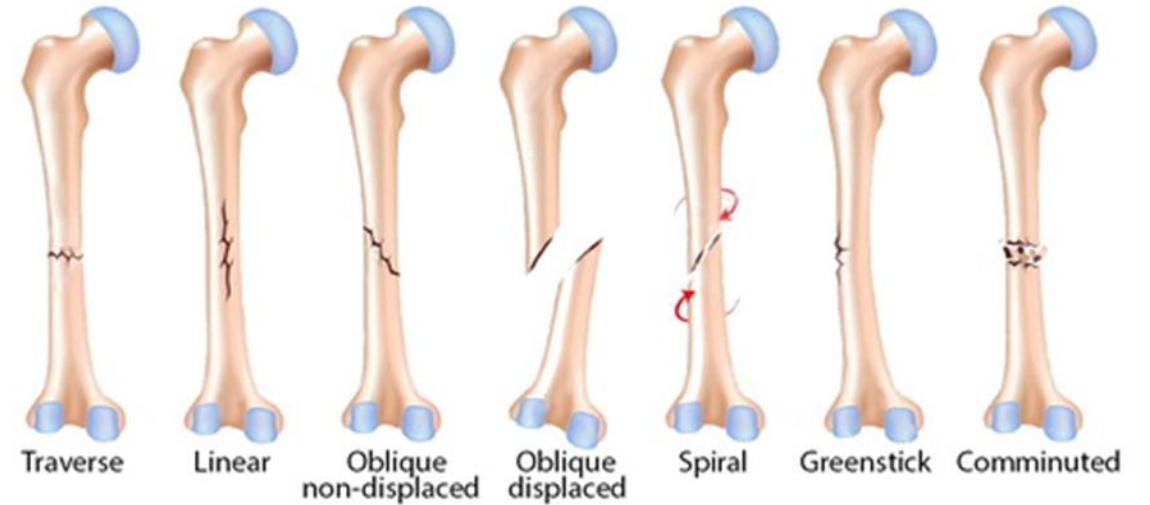
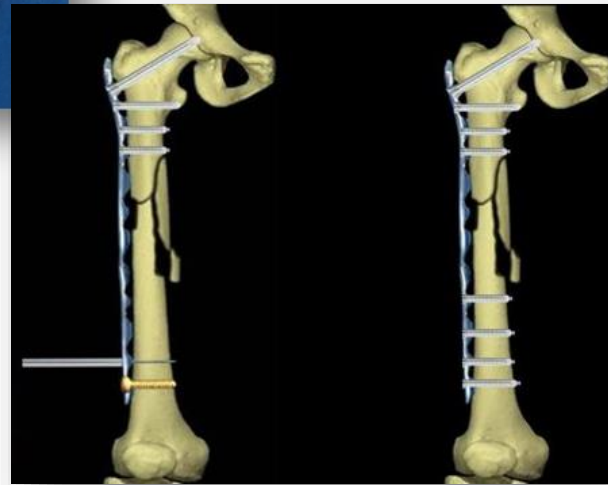
Osteoporosis



Healthy bone

Osteoporosis

How To Treat Damaged Bone ?



- Cast : Stretch fabric, a plaster cast
- Surgery : To use steel for fracture fixation

Bone loss is caused by bone cracks and bone diseases.

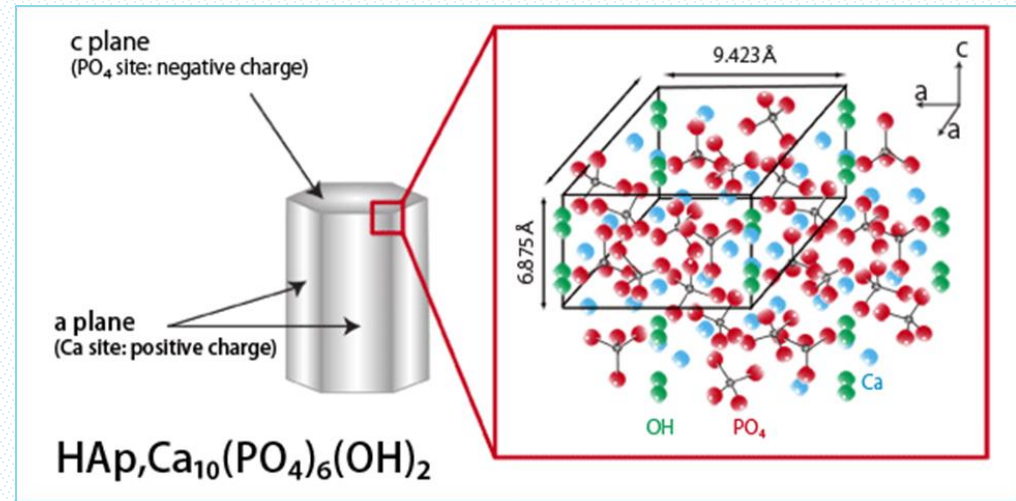
Bone Grafting Materials



Disadvantages:

- Very expensive materials
- Inconvenient when used

- Biocompatibility
- Bioactivity
- Osteoconductivity
- Non toxicity and non inflammatory nature
- Suitable for bone replacement



- ❑ Alginate-based fluids are generally used as mount cast to record fine detail in the mouth.
- ❑ Alginate can be formed gels by using simple ionic crosslinking.
- ❑ Alginate is non-toxicity, biocompatible and cost-effective.





BENEFITS OF GELATIN

Boosts immune system

Aids in weight management

Helps in reducing inflammation

Strengthens hair, skin, nails & teeth

Aids in improving sleep cycles

Helps in faster healing of wounds

Improves bone health & digestive health

Caution: May cause burping and bloating of stomach

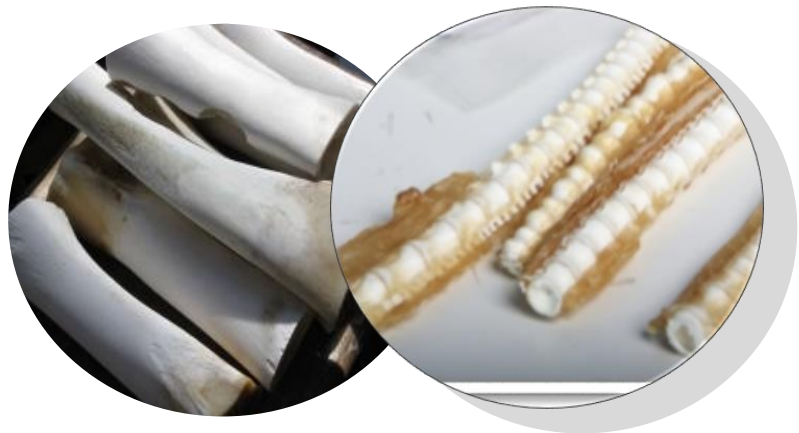
www.organicfacts.net



- To synthesize hydroxyapatite from bovine and fish bones by sintering method
- To study synthesise of scaffold from bovine and fish bones
- To characterize physico-chemical properties of hydroxyapatite and scaffold

Objectives

Scope of Work



Bovine

Fish



HAP powder



alginate

gelatin

Ha

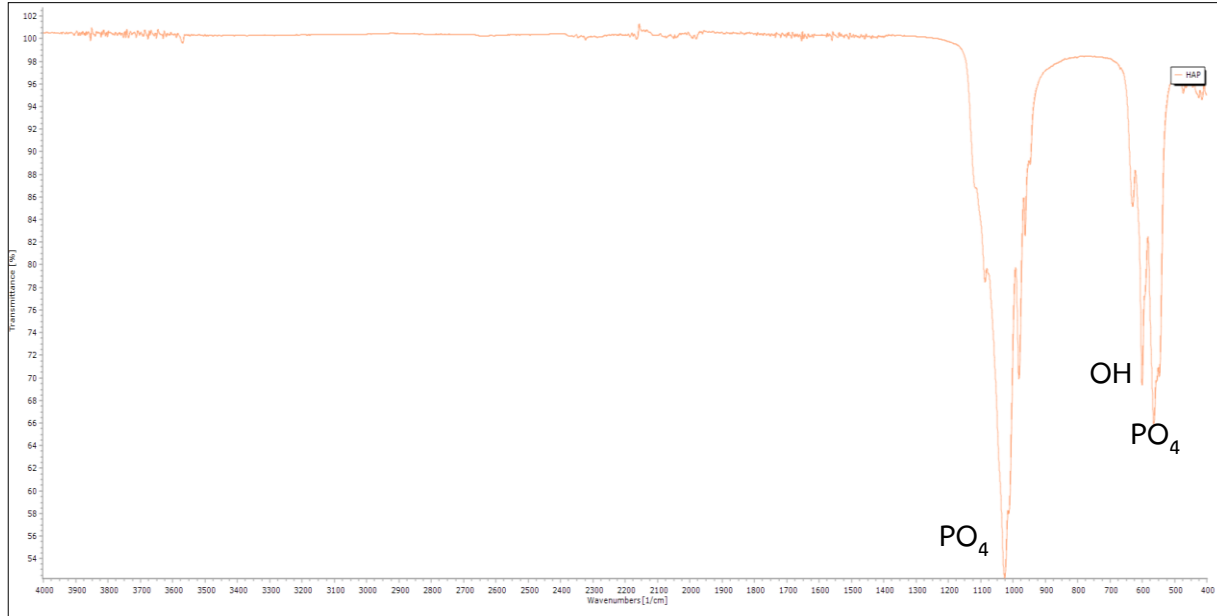


Scaffold

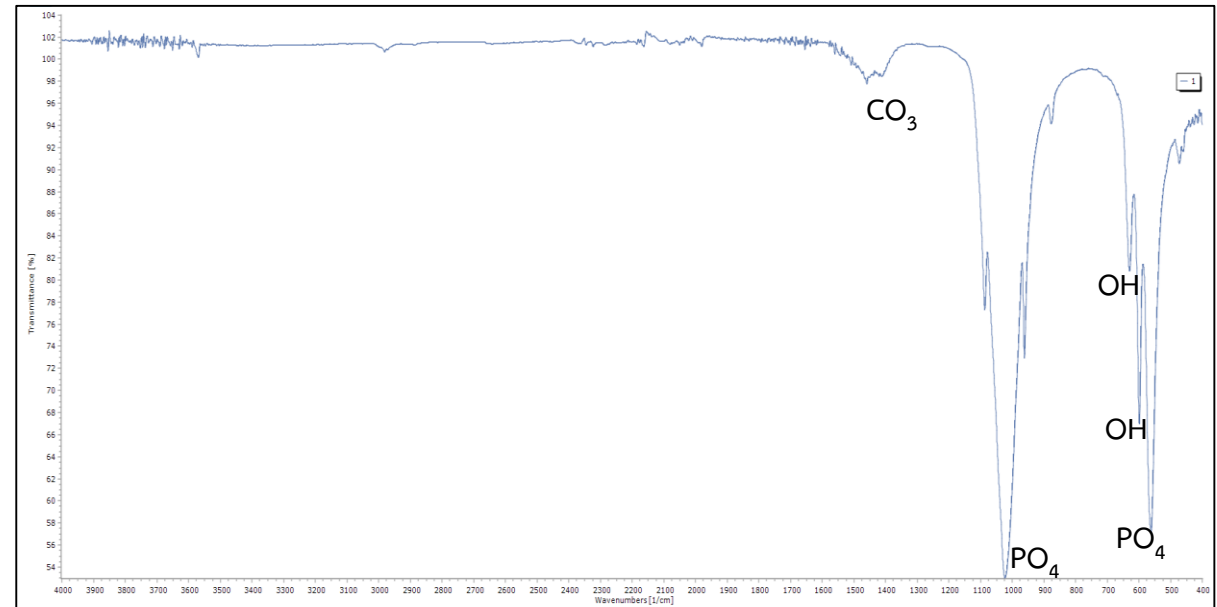
กำลังอยู่ในช่วงการทดลอง

Results and discussion

FT-IR result



Fish

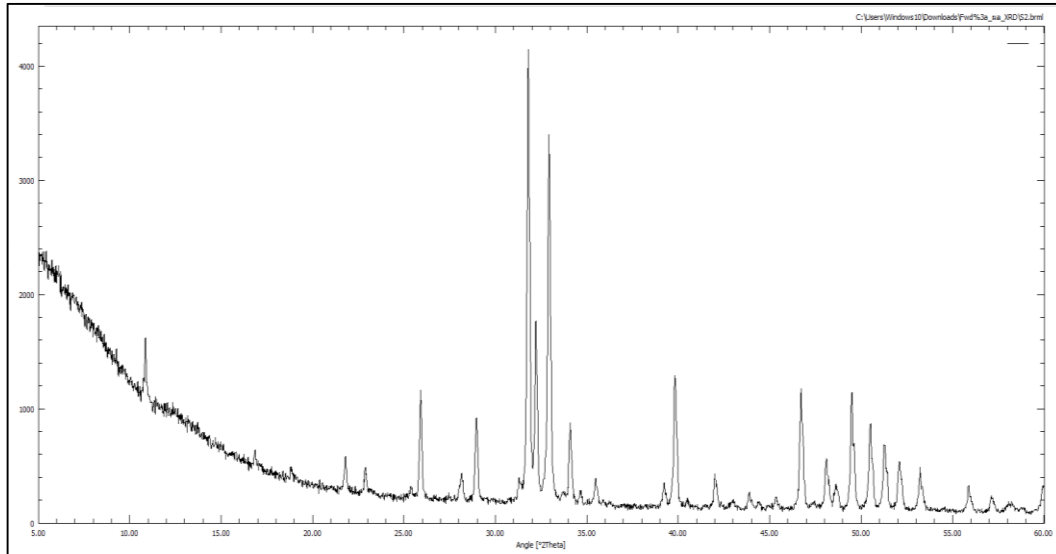


Bovine

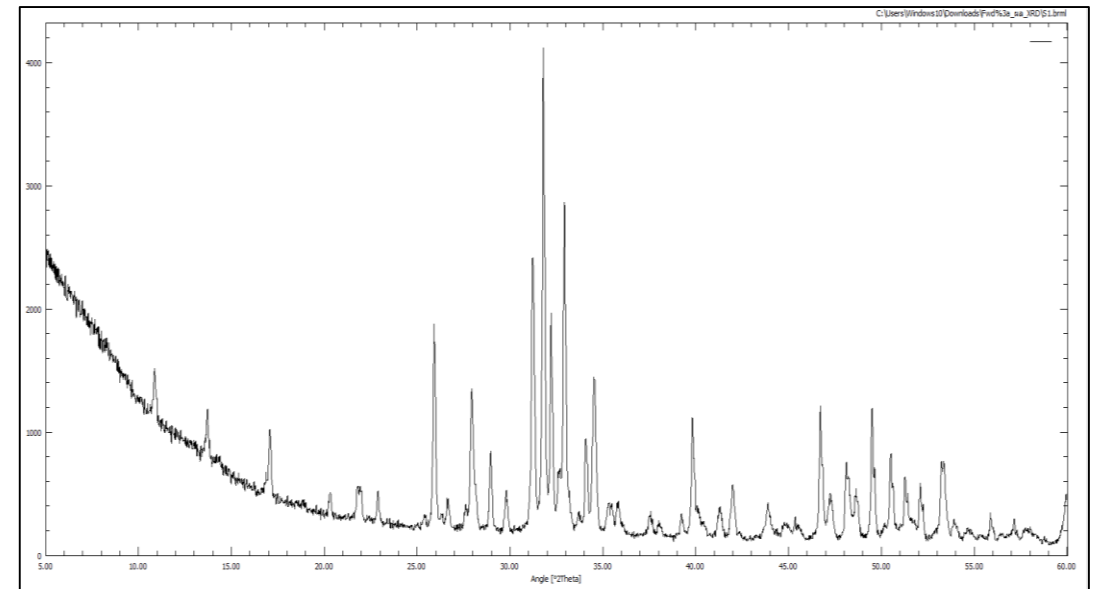
FT-IR for fish and bovine bones

Results and discussion

XRD result



Fish



Bovine

XRD of fish and bovine bones

กำลังอยู่ในช่วงการทดลอง