We have identified a novel small peptide that has the ability to augment bone matrix production, potentiating its use for the treatment of osteoporosis and other bone related diseases.

Background:
Millions of people suffer from osteoporosis, leading to painful fractures and placing billions of dollars of financial stress on the healthcare system and the cost is only predicted to rise. It has been shown, fortunately, that early diagnosis and treatment can reduce the fracture rate in osteoporosis patients. Most drugs available for the treatment of osteoporosis are antiresorptive, slowing down the course of bone resorption during bone remodeling. While antiresorptives have been shown to slow down bone loss, they do not promote new bone growth. Alternatively, bone-building (anabolic) drugs stimulate osteoblast activity. Eli Lilly’s Teriparatide is a recombinant form of human parathyroid hormone analog and is the only approved anabolic drug available. Marketed under the trade name Forteo, it must be injected daily and carries a black box warning for osteosarcoma, preventing it from being used for more than three years. The limited clinical utility of Forteo leaves a large market for patient friendly and safe skeletal anabolic therapies.

Technology Description:
Dr. Srinivas Pentyala of the Department of Anesthesiology at the Health Sciences Center of Stony Brook University has discovered a short peptide, called CRP, that has the ability to augment bone matrix production. CRP increases bone matrix productions in pre-osteoblast cells and human fetal osteoblast cells in vitro. Further, CRP mobilizes calcium and increases the expression of osteocalcin, a marker for bone matrix production. Currently, the peptides are being evaluated in an OVX rat model to assess their affect on bone loss and bone fracture repair in vivo. It is believed that this peptide or its analogues can be used to treat bone related diseases, like osteoporosis, and bolster fracture healing.

Patents:
- Patent pending claiming composition of matter and methods of use.

Advantages
- CRP potentially utilizes a new mechanism of action
- CRP may have utility in treating both osteoporosis and osteoporosis related fractures

Applications
- Treatment of osteoporosis and other degenerative bone diseases.
- Enhance the healing of osteoporosis related bone fractures

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