

Scientists discover teeth protein promises bone regeneration

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Patients suffering from osteoporosis or bone fractures might benefit from a new discovery of a protein that plays an important role in bone regeneration made by bioengineers at Queen Mary University of London.

Provided by Queen Mary, University of London

Normally found in the formation of enamel, which is an important component of teeth, the scientists discovered that a partial segment of the protein statherin can be used to signal bone growth.

"What is surprising and encouraging about this research is that we can now use this particular molecule to signal cells and enhance [bone growth](#) within the body," said co-author Dr Alvaro Mata from QMUL's School of Engineering and Materials Science and the Institute of Bioengineering.

Publishing in the journal *Biomaterials*, the team created bioactive membranes made from segments of different proteins to show which protein in particular played the crucial role. They demonstrated the bone stimulating effect in a rat model, and used analytical techniques to visualise and measure the newly formed calcified tissue.

Co-author Dr Esther Tejada-Montes, also at QMUL's School of Engineering and Materials Science said: "The benefit of creating a membrane of proteins using these molecules means it can be both bioactive and easily handled to apply over injured areas in the bone."

Dr Mata added: "Our work enables the possibility to create robust synthetic bone grafts that can be tuned to stimulate the natural regenerative process, which is limited in most synthetic bone graft alternatives."

More information: Mineralization and bone regeneration using a bioactive elastin-like recombinamer membrane, *Biomaterials* (2014)

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