

## **PRESS RELEASE**

### **Removing bone protein shown to prevent obesity in mice**

An enzyme essential for bone strength may also play an important role in regulating blood glucose levels, according to research presented today at the Society for Endocrinology's annual BES conference. The findings may lead to new targets to help prevent diabetes and obesity.

Far from being inert structures, bones are living tissues regulated by hormones that are constantly being renewed. Researchers from the University of Edinburgh's Roslin Institute previously identified the enzyme PHOSPHO1 as fundamental for the hardening of bones. This process is called mineralisation and is essential for bones to be strong and able to resist fracture.

In this study, the group found that PHOSPHO1 is also important for regulating blood glucose levels. They discovered that when the gene coding for the enzyme is removed in mice, their cells becomes more sensitive to insulin. This protected the mice against obesity and diabetes when they were fed a high-fat diet over 14 weeks.

In the last decade there has been an explosion of research into bone metabolism and how it links to energy regulation. "Previously, leptin and osteocalcin were the two main hormones researchers looked at when studying bone and whole body energy metabolism," said lead researcher of the study Miss Karla Oldknow, a PhD student at the University of Edinburgh's Roslin Institute and lead researcher on the project. "Our research shows a regulation pathway independent of the existing known mechanisms, which suggests that the relationship between bones and the rest of the body is more complex than we previously thought".

The next stage of the research will be to investigate the exact mechanism by which PHOSPHO1 influences insulin sensitivity. "Once we understand how PHOSPHO1 works, we can begin to explore ways of inhibiting it. This could lead to new therapeutic targets that are desperately required in the battle against obesity and diabetes," said Miss Oldknow.

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## Notes for editors

1. For further information about the study please contact:

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2. The study *PHOSPHO1: Roles beyond skeletal mineralisation* will be presented by Miss Karla Oldknow *et al.* at the Society for Endocrinology's annual BES conference at 14:15 on Tuesday 25 March 2014.
3. For other press enquiries, or copies of the abstract, please contact the Society for Endocrinology press office:

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4. The Society for Endocrinology's annual BES conference is held at the ACC Liverpool from 24 - 27 March 2014. BES features some of the world's leading basic and clinical endocrinologists who present their work. Journalists wishing to attend should contact Omar Jamshed at the Society for Endocrinology press office.
5. The Society for Endocrinology is a UK-based membership organisation representing a global community of scientists, clinicians and nurses who work with hormones. Together we aim to improve public health by advancing endocrine education and research, and engaging wider audiences with the science of hormones [www.endocrinology.org](http://www.endocrinology.org)