Heparin-like compounds inhibit breast cancer metastasis to bone

May 21 2012

Researchers from VTT Technical Research Centre of Finland have in collaboration with the University of Turku, Indiana University and two Finnish companies, Biotie Therapies Corp. and Pharmatest Services Ltd, discovered a novel mechanism regulating the development of breast cancer bone metastases and showed that heparin-like compounds can potentially be used to inhibit breast cancer metastasis to bone.

These findings were published on the *Molecular Cancer Research* journal website on 20th April 2012.

The researchers at VTT used RNA interference-based screening in breast cancer cells and found that an enzyme that modifies heparan sulfate glycosaminoglycans, HS6ST2, is an important regulator of breast cancer cell–bone interactions. Heparin, which is commonly used as an anticoagulant, also inhibited this regulatory mechanism.

Experiments in a mouse model of breast cancer bone metastasis indicated that heparin-like compounds decreased bone destruction and tumor growth in bone. One of these heparin-like compounds, developed by Biotie Therapies, has a significantly reduced anticoagulant activity as compared to heparin, which improves its applicability as a potential cancer therapeutic agent.

Breast cancer that has metastasized to bone is currently an incurable disease, causing significant morbidity and mortality.