Preventing Prostate Cancer to Bone Metastasis

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(PhysOrg.com) -- In new research on prostate cancer to bone metastasis, Dr. Phillip Trackman of Boston University Henry M. Goldman School of Dental Medicine explains that the lysyl oxidase pro-peptide (LOX-PP) inhibits prostate cancer cell growth in vitro by inhibiting the activity of a key growth factor known as Fibroblast Growth Factor 2, or FGF-2.

The discovery that LOX-PP interferes with interactions between FGF-2 and cancer and bone cells is a key step in prostate cancer to bone metastasis research, as it was previously unknown how LOX-PP inhibits prostate cancer cell growth. Dr. Trackman's team, including Co-Principal Investigators Dr. Amitha Palamakumbura and Boston University School of Medicine (BUSM) Professor Dr. Gail Sonenshein, has shown that LOX-PP interferes with FGF-2 receptor binding and signaling with both prostate cancer cells and normal bone cells.

"Prostate cancer metastasizes to bone quite frequently, and bone metastatic disease is painful and debilitating," Dr. Trackman says. "The lysyl oxidase pro-peptide is a great thing because it can block some of the pathways that incite tumor growth and bone destruction and interrupt this negative cycle."

Dr. Trackman and his team were the first to show in 2004 that LOX-PP—not the LOX enzyme as previously believed—acts as a tumor suppressor.

Dr. Trackman continues to explore LOX-PP's ability to inhibit breast

cancer cell growth with Dr. Sonenshein, Director of BUSM's Program in Research on Women's Health.

Additional authors of the paper include Dr. Siddharth Vora from the Goldman School of Dental Medicine and Drs. Matthew Nugent and Kathrin Kirsch from Boston University School of Medicine.

The paper, Lysyl Oxidase Pro-peptide Inhibits Prostate Cancer Cell Growth by Mechanisms that Target FGF-2-Cell Binding and Signaling, appears in the July 13 issue of *Oncogene* (advanced online publication), available at www.nature.com/onc/journal/vao … /ncurrent/index.html.

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