

# Aggressive breast cancers may be sensitive to drugs clogging their waste disposal

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In a new paper in *Cancer Cell*, a team led by Judy Lieberman, PhD, of Boston Children's Hospital's Program in Cellular and Molecular Medicine reports "triple-negative" breast cancers may be vulnerable to drugs that attack the proteasome. This cellular structure acts as the cell's waste disposal, breaking down damaged or unneeded proteins.

These cancers, which lack the three major therapeutic markers for [breast cancer](#)—the estrogen, progesterone and HER2 receptors—are very aggressive and difficult to treat. They mostly affect younger women and have the worst prognosis of all breast cancers.

By selectively turning genes off throughout the genomes of triple-negative [tumor cells](#) in vitro, Lieberman's team found that these cells absolutely require active proteasomes in order to live. When turned off, the cells die.

These data suggest that triple-negative breast cancers may respond to treatment with drugs similar to bortezomib (Velcade®), a proteasome inhibitor that revolutionized the care of patients with the blood cancer [multiple myeloma](#).

Provided by Children's Hospital Boston

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