

SOUTHWESTERN NEWS

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BRCA1 NEIGHBOR MAY TELL RESEARCHERS MORE ABOUT BREAST CANCER

DALLAS – Nov. 25, 1996 – Like tourists cruising celebrity neighborhoods in hope of learning more about their idols, researchers at UT Southwestern Medical Center at Dallas interested in the breast cancer gene *BRCA1* think they may have found a neighbor who will reveal some of the secrets of the block's biggest star.

Writing in the December issue of *Nature Genetics*, Dr. Richard Baer and Dr. Anne Bowcock report the discovery of *BARD1*, a gene that is structurally similar to *BRCA1*. The proteins encoded by unmutated *BRCA1* and *BARD1* genes interact with one another in a way that may explain how breast-cancer tumors grow as a result of a defect in *BRCA1*.

Mutated forms of *BRCA1* appear in about half of families with a history of breast cancer. Women who inherit the mutated gene have an 80 percent to 90 percent lifetime risk of developing breast cancer and a 40 percent to 50 percent lifetime risk of developing ovarian cancer.

BARD1 doesn't associate with defective or mutated forms of *BRCA1*.

"Significantly," Baer explained, "interaction between *BARD1* and *BRCA1* proteins is completely abolished by mutations in *BRCA1* that are associated with breast-cancer susceptibility."

The complex built when normal *BARD1* and *BRCA1* proteins co-mingle in the cell may play "an essential role in *BRCA1*-mediated tumor suppression," Baer added. It also is possible, that *BARD1* itself is the starting point for genetic lesions that predispose

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women to breast and ovarian cancer.

Bowcock said the research on *BARD1* is far from complete, however. "Besides finding out the role of *BARD1* itself, we need to know if it is altered in some sporadic or familial types of breast and ovarian cancer." Bowcock, an associate professor of pediatrics, said researchers also need to learn whether *BARD1* resides in the nucleus or cytoplasm of the cell. Knowing its location may give them additional clues about the protein's function.

Baer is professor of microbiology and holder of the Roy and Christine Sturgis Chair in Biomedical Research and the H. Lloyd and Willye V. Skaggs Professorship in Medical Research.

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