# miR-491-5p functions as a tumor suppressor by targeting JMJD2B in ERα-positive breast cancer

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Abstract

The involvement of miR-491-5p in breast cancer development is unclear. Our study showed that miR-491-5p is significantly downregulated in ERα-positive breast cancer tissues and cell lines and is generally hypermethylated in ERα-positive breast cancer. MiR-491-5p overexpression significantly suppressed estrogen signaling and estrogen-stimulated proliferation of breast cancer cells. Furthermore, the histone demethylase JMJD2B was identified as a direct target of miR-491-5p. The ectopic expression of JMJD2B abrogated the phenotypic changes induced by miR-491-5p in breast cancer cells. Collectively, our data indicate that miR-491-5p plays a tumor suppressor role in the development and progression of breast cancer and may be a novel therapeutic target against ERα-positive breast cancer.

## Result

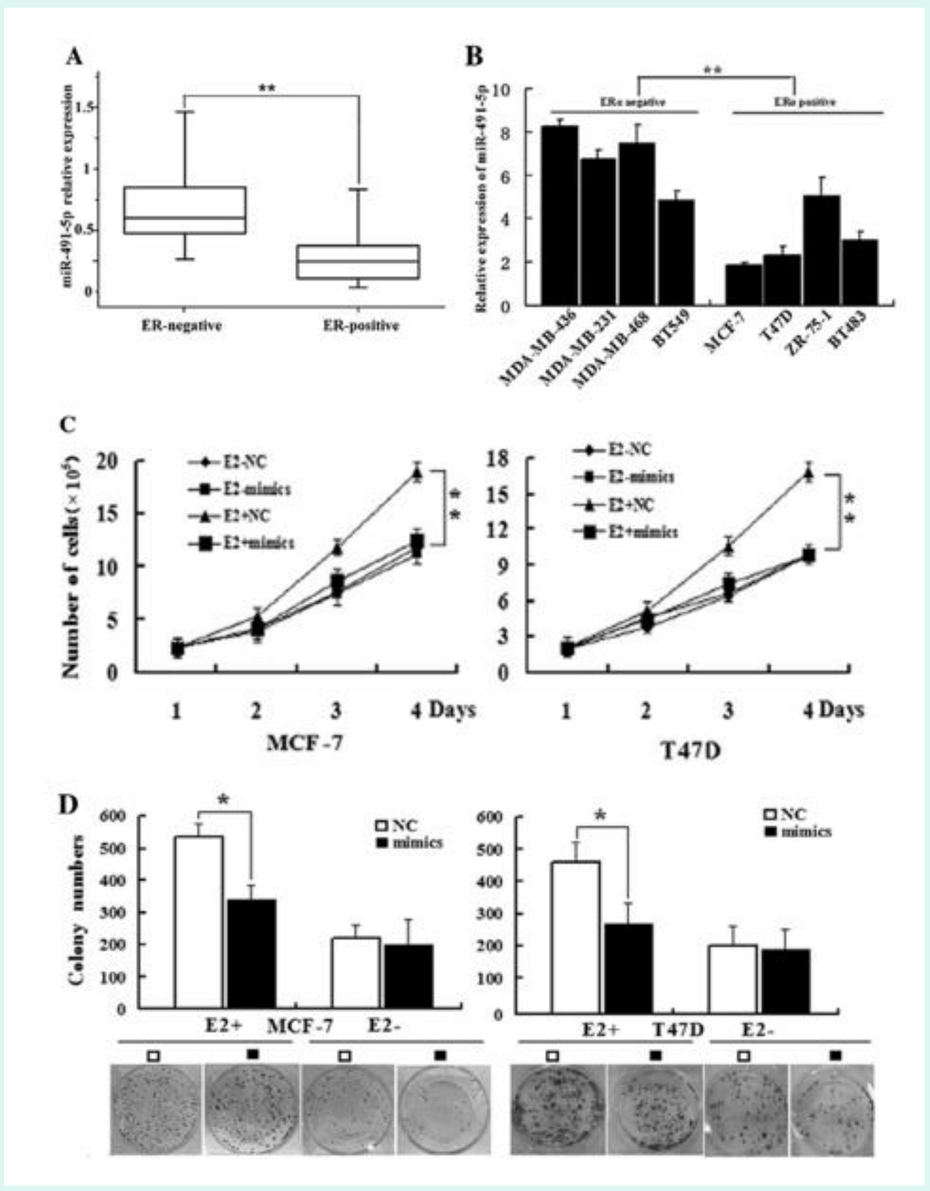


Fig 1. miR-491-5p expression is down-regulated in ERα-positive breast cancers and cell lines , and miR-491-5p inhibits estrogen-stimulated breast cancer cell growth




Fig 2. JMJD2B is a direct target of miR-491-5p

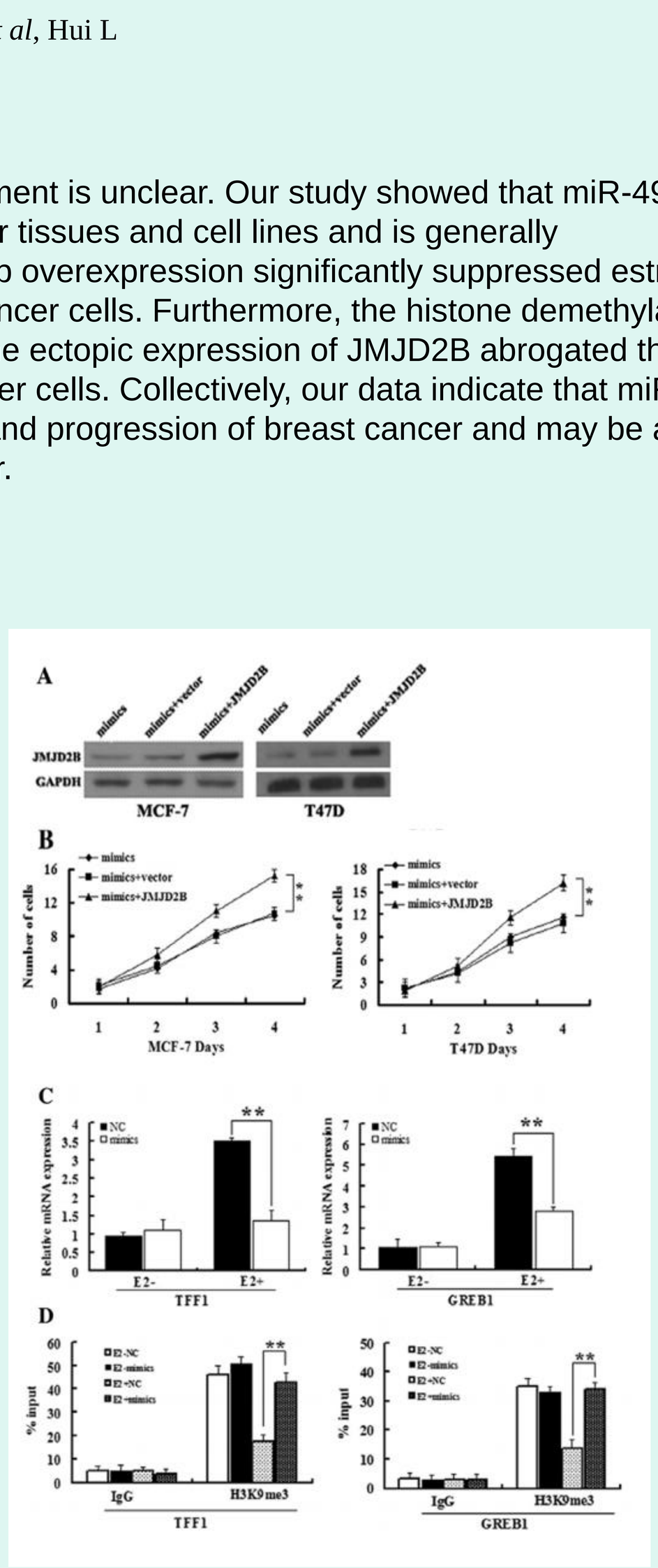


Fig 3. MiR-491-5p-mediated inhibition of JMJD2B is involved in the suppression of estrogen-stimulated breast cancer cell growth and estrogen signaling

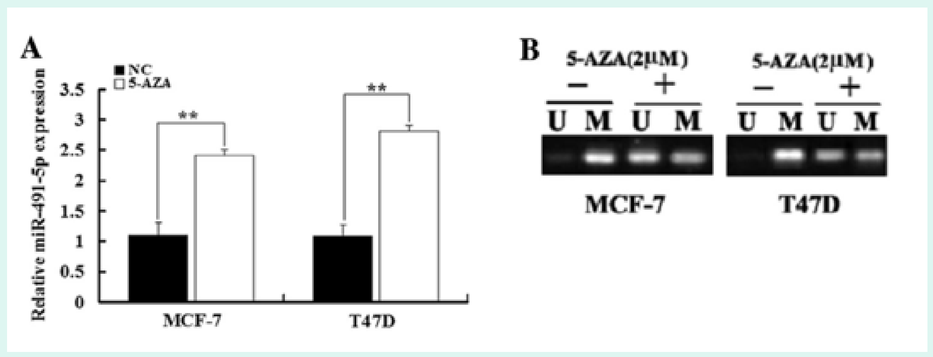


Fig 4. DNA methylation down-regulates miR-491-5p in ERα-positive breast cancer

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