

# Bushehr Province University of Medical Science

## Public Relation & International Affairs

### Exploring All-Trans Retinoic Acid as a Potential Breast Cancer Treatment: An Insight into Its Mechanism and Future Implications

In a recent study at BPUMS, Dr. Hamed Manoochehri and fellow scientists shed light on the potential of all-trans retinoic acid in treating breast cancer. The study reveals that all-trans retinoic acid exhibits anti-cancer effects by influencing key genes, paving the way for alternative therapies and targeted drug development for the most prevalent form of cancer in women.

"The anti-cancer effects of all-trans retinoic acid in breast cancer have been demonstrated in some studies. However, since the precise mechanism of its action remains unclear, a study was conducted to investigate this issue," said Dr. Hamed Manoochehri, an Assistant Professor at the Persian Gulf Marine Biotechnology Research Center of Bushehr University of Medical Sciences.

"The study's findings revealed that all-trans retinoic acid exhibits anti-cancer effects in breast cancer by influencing key genes such as the estrogen receptor (ESR1) and those involved in cell death regulation (MDM2) and cell proliferation (CCND1/CDK4)," added Dr. Manoochehri.

Dr. Manoochehri mentioned: "All-trans retinoic acid directly or indirectly affects these genes, leading to cancer suppression by modulating their expression."

"Based on these findings, each of the genes mentioned above could serve as potential targets for developing new drugs or redesigning existing ones, paving the way for cancer gene therapy, particularly in breast cancer treatment," said Dr. Manoochehri.

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