

Peer Review

# Review of: "The Development of Differentiation-Based Therapy for Breast Cancer Using EDAR and XEDAR Signalling Pathways: A Conceptual Framework"

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1. Independent researcher

Nice work,

Open Peer Review

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## **The Development of Differentiation-Based Therapy for Breast Cancer Using EDAR and XEDAR Signalling Pathways: A Conceptual Framework**

Nice work, Slawomir Wiśniewski.

Generally, you did great. I have just a few inputs and recommendations that you may want to integrate into your work.

For the abstract section,

You may want to clearly state the rationale for focusing on XEDAR and EDAR compared to other pathways in the management of breast cancer. Differentiate them. This could be due to their unique approach in promoting cellular differentiation and stabilizing aggressive cancer cells by regulating how cells develop and mature, or because they hold the potential to turn difficult-to-treat cancers into more manageable conditions. Moreover, they specifically target an epigenetic weakness found in patients with high XEDAR promoter methylation, opening the door to a promising and innovative treatment option.

You can also provide a concise example or evidence of differentiation therapy's success in related cancers or conditions (which should be confirmable or evidence-based).

For example:

One of the most well-known successes of this approach is in the treatment of acute **promyelocytic**

**leukemia (APL).** The introduction of all-trans retinoic acid (ATRA) has significantly improved survival rates, **transforming APL from a once-deadly condition** into a largely treatable disease with a high chance of cure.

For solid tumors, differentiation therapy is still an evolving field with ongoing research. Studies have shown that encouraging cancer stem cells to mature can **help slow tumor growth and reduce its aggressive nature**. In some cases, differentiation therapy has been linked to lower levels of remaining cancer cells in metastatic settings, which may help in preventing disease recurrence and progression.

For the Key Challenges and Recommendations Section:

- Recognizing specific biomarkers can help pinpoint patients who are most likely to respond positively to EDAR/XEDAR therapy.
- Integrating EDAR/XEDAR therapy with established treatments like immunotherapy or chemotherapy may enhance overall effectiveness.
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- Collaborating with experts in computational biology and artificial intelligence can assist in optimizing drug design and predicting interactions within cancer cells.

Facilitating Clinical Implementation:

- Addressing regulatory challenges and initiating early-stage clinical trials will be essential in demonstrating the therapy's safety and effectiveness.
- Establishing clear criteria for patient selection will help ensure that the treatment is provided to those who are most likely to benefit.
- Regarding the long-term impact, conducting extended follow-up studies can help evaluate the therapy's effectiveness over time, focusing on cancer recurrence prevention and improvements in patients' quality of life.

## Declarations

**Potential competing interests:** No potential competing interests to declare.