# Article information:

Alu and LINE-1 Hypomethylation Is Associated with HER2 Enriched Subtype of Breast Cancer | PLOS ONE
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0100429>

# Article summary:

1. Alu and LINE-1 hypomethylation is associated with the HER2 enriched subtype of breast cancer.

2. Alu methylation showed no significant changes during multistep progression of breast cancer, while LINE-1 methylation significantly decreased from normal to ADH/FEA.

3. Low Alu methylation status tended to be associated with poor disease-free survival of the patients.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Alu and LINE-1 Hypomethylation Is Associated with HER2 Enriched Subtype of Breast Cancer” is a peer-reviewed research article published in PLOS ONE that examines the changes in DNA methylation status in cancer cells and its relationship with characteristics of invasive breast cancer (IBC). The authors used pyrosequencing to analyze the methylation status of Alu and LINE-1 in 145 cases of breast samples including normal breast tissue, atypical ductal hyperplasia/flat epithelial atypia (ADH/FEA), ductal carcinoma in situ (DCIS) and invasive breast cancer (IBC). The results showed that Alu methylation showed no significant changes during multistep progression of breast cancer, although it tended to decrease during the transition from DCIS to IBC. In contrast, LINE-1 methylation significantly decreased from normal to ADH/FEA, while it was similar in ADH/FEA, DCIS and invasive breast cancer.

The article is generally reliable as it is a peer-reviewed research article published in a reputable journal. The authors have provided sufficient evidence for their claims by using pyrosequencing to analyze the data from 145 cases of breast samples including normal breast tissue, atypical ductal hyperplasia/flat epithelial atypia (ADH/FEA), ductal carcinoma in situ (DCIS) and invasive breast cancer (IBC). Furthermore, they have also provided detailed information on their methods and results which can be verified by other researchers.

However, there are some potential biases that should be noted when interpreting the results presented in this article. Firstly, the sample size used for this study may not be large enough to draw definitive conclusions about the association between Alu and LINE-1 hypomethylation and HER2 enriched subtype of breast cancer. Secondly, there may be other factors that could influence the results such as lifestyle factors or environmental exposures which were not taken into account by the authors. Finally, further studies are needed to confirm these findings as this study only examined one type of repetitive element – Alu and LINE-1 – which may not represent all types of repetitive elements present in the genome.

In conclusion, this article provides valuable insights into how DNA methylation status can affect characteristics of invasive breast cancer but further studies are needed to confirm these findings before any definitive conclusions can be drawn about its association with HER2 enriched subtype of breast cancer.

# Topics for further research:

* DNA methylation and breast cancer
* HER2 enriched subtype of breast cancer
* Pyrosequencing and breast cancer
* Alu and LINE-1 hypomethylation
* Multistep progression of breast cancer
* Lifestyle factors and breast cancer

# Report location:

<https://www.fullpicture.app/item/d6c091e6ca62ec5328bef245a4875ce0>