Review of: "The role of pH in cancer biology and its impact on cellular repair, tumor markers, tumor stages, isoenzymes, and therapeutics"

Hamed Hashemi Borenjaghi[1]

1 Tabriz University

Potential competing interests: No potential competing interests to declare.

Strengths:

The study gives an in-depth examination of pH's function in cancer biology, including its impact on cellular repair, tumor markers, tumor stages, isoenzymes, and therapeutics. It also investigates how pH variability affects isoenzymes and produces distinct tumor markers, as well as how an acidic tumor microenvironment promotes tumor growth and development. It also describes how pH measurements should concentrate on the increasing alkaline intracellular outer ring rather than averaging the entire bulk, and how cancer cells continuously exhibit increased pH levels. Furthermore, it investigates the possible applications of pH-sensitive nanoparticles, proton pump inhibitors, and carbonic anhydrase inhibitors in cancer treatment. Finally, the paper examines glucosodiene, a glucose derivative with alkaline qualities that has shown efficacy in reported cases, showing its potential as a therapeutic target for cancer treatment.

Weaknesses:

- The paper does not provide a detailed analysis of the potential risks associated with targeting the pH microenvironment of tumors, such as the potential impact on normal cells and systemic pH balance.
- The paper does not discuss the potential side effects of modulating pH levels within cancer cells. Furthermore, the paper does not provide any clinical evidence on the efficacy of glucosodiene in treating cancer.
- The paper does not explore the potential implications of pH variability in different types of cancer.
- It is recommended to use the following keywords: cancer, pH, cellular repair, tumor markers, alkaline.
- Abstract needs to be revised.
- This publication draft is highly similar to another journal paper entitled: impact of acidic environment on gene expression and functional parameters of tumors in vitro and in vivo