Science Advancement & Outreach
A DIVISION OF PETA

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Request for Information (RFI): Benchmarks for Artificial Intelligence in Cancer Research and Care (NOT-CA-25-037)

Submitted by email to CancerAI@mail.nih.gov on July 22, 2025

We are writing on behalf of People for the Ethical Treatment of Animals (PETA), which has more than 10.4 million members and supporters globally, to urge the National Cancer Institute (NCI) to ensure that the datasets used to develop AI benchmarks for cancer research consist of clinical and human-based model data, such as those derived from human cells, tissues, and patient populations.

This recommendation is rooted in longstanding concerns about the translatability of cancer research conducted on animals. Despite significant investment in cancer experiments on animals, the success rate for oncology drugs remains below 10%—a strikingly low figure that reflects a systemic failure in current preclinical modeling strategies.[1]

Research has shown that cancer studies using animals tend to produce smaller effect sizes and are less likely to replicate compared to studies using non-animal models.[2] These findings underscore the limitations imposed by fundamental species differences. Mice and humans differ significantly at the genetic, molecular, immunologic, and cellular levels—differences that directly impact how cancer develops and responds to treatment.[3]

Moreover, the artificial nature of many animal cancer models introduces additional obstacles to translation. Rodents often undergo extensive genetic modifications or xenografting to induce tumor formation, creating experimental conditions that are not only physiologically unnatural but overwhelmingly fail to mirror human cancer pathophysiology. These manipulations frequently result in unintended biological effects, further compromising the relevance of the data generated.[4,5,6,7]

To ensure that AI tools truly advance cancer prevention, diagnosis, and treatment, we strongly encourage NCI to prioritize benchmarks built on high-quality, human-relevant data. Doing so will maximize translational potential, increase clinical impact, and reflect the most promising path forward for cancer research in the era of AI.

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