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Current landscape of treating different cancers using nanomedicines: Trends and perspectives

Carolina Salvador Morales ¹, Piotr Grodzinski ¹

Affiliations

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Abstract

The efforts to use novel nanotechnologies in medicine and cancer have been widespread. In order to understand better the focus areas of cancer nanomedicine research to date, we conducted a survey of nanomedicine developmental and clinical research in conjunction with treatment of various cancers. The survey has been performed based on number of publications, rate of citations, entry into clinical trials, and funding rates by the National Cancer Institute. Our survey indicates that breast and brain cancers are the most and one of the least studied by nanotechnology researchers, respectively. Breast cancer nano-therapies seem to also be most likely to achieve clinical translation as the number of publications produced, amount of funding, total citations, and clinical trials (active and completed) are the highest when compared with research in other cancers. Brain cancer, despite its low survival, has capture much less attention of nanomedicine research community as survey indicated, although nanotechnology can offer novel approaches which can address brain cancer challenges. This article is categorized under: Therapeutic Approaches and Drug Discovery > Nanomedicine for Oncologic Disease.

Keywords: animal models; brain cancer; breast cancer; cancer types; clinical trials; nanomedicine; nanoparticles; nanotherapeutics; translation.

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