Editorial

iMedPub Journals
www.imedpub.com

British Biomedical Bulletin
ISSN 2347-5447

2021
Vol. 9 No. 2:06

An Introduction to Nanotechnology

Mikako Sakaguchi*

Received: April 06, 2021, **Accepted:** April 12, 2021, **Published:** April 22, 2021

Editorial office, British Biomedical Bulletin, London, UK

***Corresponding author:**
Mikako Sakaguchi

mikakos687@gmail.com

Editorial office, British Biomedical Bulletin, London, UK.

Citation: Sakaguchi M (2021) An Introduction to Nanotechnology. Br Biomed Bull Vol.9 No.2: 06.

Editorial

Nanotechnology has been more prevalent in our daily lives in recent years. Through an integrated approach, this groundbreaking technology has been implemented in a variety of industries. A growing number of applications and goods containing nanoparticles, or at least claiming to be based on nanotechnology, are now accessible. This occurs in pharmaceutical research as well. Nanotechnology is now being used in the development of novel medications, and it has been designated as a key enabling technology in the European Union (EU), capable of bringing new and creative medical solutions to address unmet medical needs.

Nanomedicine is the application of nanotechnology for medical reasons, and it is described as the use of nanoparticles for illness diagnosis, monitoring, control, prevention, and therapy. The definition of nanomaterial, on the other hand, has sparked debate among scientists and international regulatory bodies. Because nanomaterials have novel physicochemical properties that differ from those of their typical bulk chemical equivalents due to their small size, some efforts have been made to come up with a consensus definition. These qualities considerably expand a range of possibilities in medication development; yet, some safety concerns have surfaced. Because nanomaterials have unique physicochemical features that differ from their bulk chemical counterparts due to their small size, several efforts have been made to come up with a consensual definition. These characteristics greatly broaden the spectrum of options for drug development; yet, some safety concerns have developed.

It is vital to provide an unambiguous definition to identify the existence of nanomaterials in order to avoid any concerns. Based on the European Commission Joint Research Center and the Scientific Committee on Emerging and Newly Identified Health Risks, the European Commission (EC) developed a definition. This definition is just used as a guide to identify whether a material is a nanomaterial or not; it does not categories it as hazardous or non-hazardous. According to the EC, it should be used as a model for other regulatory and policy frameworks in the areas of quality, safety, efficacy, and risk assessment.

Nanomaterial, according to the EC recommendation, is a natural, incidental, or manufactured material that consists of particles, either in an unbound state or as an aggregate, with one or more external dimensions in the size range of 1 nm-100 nm for 50% of the particles, according to the number size distribution. Nanomaterials are structures with one or more exterior dimensions of less than one nanometer, such as fullerenes, graphene flakes, and single wall carbon nanotubes. Materials with a surface area of more than 60 m2/cm3 by volume are also included. This is how the European Union defines a nanomaterial in terms of legislation and policy.

The Food and Drug Administration (FDA) has not established its own definition for the terms "nanotechnology," "nanomaterial," "nanoscale," or other related terms, instead adopting the meanings commonly used in relation to the engineering of materials with at least one dimension in the size range of approximately 1 nanometer (nm) to 100 nm. FDA advises that evaluations of the safety, effectiveness, public health impact, or regulatory status of nanotechnology products should consider any unique properties and behaviour that the application of nanotechnology may impart, based on current scientific and technical understanding of nanomaterials and their characteristics.

The most crucial factor to consider is size, which may be applied to a wide range of materials. The standard wavelength range is 1 nm to 100 nm. This restriction, however, does not have a clear cutoff. Because the psychochemical and biological features of materials do not change abruptly at 100 nm, the largest size that a material can have to be considered nanomaterial is an arbitrary value.