

# Induction of composites of chitosan nanoparticles from crustaceans source for nanomedicine

Dare Victor Aberé\*

Department of Marine Sciences, University of New York, United States

---

**Received:** 01-Mar-2023; **Manuscript No:** JAEFR-23-103576; **Editor assigned:** 03-Mar-2023; **Pre QC No:** JAEFR-23-103576 (PQ); **Reviewed:** 17-Mar-2023; **QC No:** JAEFR-23-103576; **Revised:** 22-Mar-2023 (R); **Manuscript No:** JAEFR-23-103576 (R); **Published:** 29-Mar-2023; **DOI:** 10.3153/JAEFR.9.3.023

## Description

Crustaceans, a diverse group of arthropods, are a vital component of aquatic ecosystems and play a significant role in maintaining ecological balance. These remarkable creatures have colonized various habitats, ranging from the deepest ocean trenches to freshwater streams and terrestrial environments. With over 67,000 known species, Crustaceans exhibit an astonishing array of sizes, shapes, and adaptations. In this article, we will delve into the captivating world of Crustaceans, exploring their evolutionary history, morphological characteristics, ecological importance, and the fascinating strategies they employ for survival. Crustaceans are members of the phylum Arthropoda, which also includes insects, spiders, and millipedes. Their evolutionary lineage dates back over 500 million years, making them one of the oldest and most successful groups of animals on Earth. Crustaceans are further classified into various subclasses, including Malacostraca (which encompasses many familiar species like crabs, lobsters, and shrimp), Branchiopoda (brine shrimp and fairy shrimp), and Ostracoda (seed shrimp), among others. Each subclass has its own unique adaptations and ecological roles. Crustaceans exhibit a remarkable diversity of body forms, reflecting their adaptation to different environments. Most Crustaceans have a segmented body covered by a hard exoskeleton, which provides support, protection, and a surface for muscle attachment. This exoskeleton is periodically molted to accommodate growth. The head region bears a pair of sensory antennae, compound eyes, and various appendages modified for feeding, locomotion, and reproduction. From the diminutive copepods to the formidable king crabs, Crustaceans come in a wide range of sizes. They exhibit striking morphological adaptations, such as the elongated pincers of mantis shrimp for capturing prey, the flattened bodies of amphipods for life in narrow crevices, and the paddle-like appendages of barnacles for filter feeding. The diversity of crustacean

forms is truly awe-inspiring. Crustaceans fulfill numerous ecological roles and are critical for the functioning of aquatic ecosystems. They serve as primary consumers, feeding on algae, detritus, and other organic matter, and in turn, serve as prey for various predators, including fish, birds, and marine mammals. Crustaceans also act as ecosystem engineers, influencing nutrient cycling, sediment dynamics, and habitat modification. Many Crustaceans play essential roles in maintaining water quality. For instance, the brine shrimp *Artemia* and copepods are used in aquaculture and water treatment facilities to remove excess nutrients and enhance water clarity. Additionally, some species of shrimp, such as the cleaner shrimp, form symbiotic relationships with fish by removing parasites from their bodies, benefiting both parties involved. Crustaceans exhibit diverse reproductive strategies, including internal fertilization, external fertilization, and complex courtship rituals. Most Crustaceans have separate sexes, but some species can change their sex depending on environmental conditions. Females often produce large numbers of eggs, which they carry and protect until they hatch. Crustacean life cycles vary considerably.

## Acknowledgement

None.

## Conflict of interest

The author declares there is no conflict of interest in publishing this article.

## \*Corresponding to

Dare Victor Aberé

Department of Marine Sciences,

University of New York, United States

Email: [dv\\_abered@sunypoly.edu](mailto:dv_abered@sunypoly.edu)