

1. Record Nr.	UNINA9910155555503321
Titolo	Biological Effects by Organotins / / edited by Toshihiro Horiguchi
Pubbl/distr/stampa	Tokyo : , : Springer Japan : , : Imprint : Springer, , 2017
ISBN	4-431-56451-9
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (VIII, 254 p. 66 illus., 36 illus. in color.)
Disciplina	571.95
Soggetti	Environmental toxicology Wildlife Fishes Water - Pollution Aquatic ecology Invertebrates Ecotoxicology Fish & Wildlife Biology & Management Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution Freshwater & Marine Ecology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1. Analytical techniques for trace levels of organotin compounds and contamination by organotin and alternative antifouling paints in the marine environment -- Analytical techniques for trace levels of organotin compounds in the marine environment -- Continuing issues of contamination by organotins in the marine environment after domestic and international legislation -- Emerging issues on contamination and adverse effects by alternative antifouling paints in the marine environments -- 2. Contamination by organotins and organotin-induced imposex in gastropod mollusks -- Contamination by organotins and its population-level effects involved by imposex in prosobranch gastropods -- Current status of contamination by organotins and imposex in prosobranch gastropods in Europe -- Current Status of Organotin Contamination and Imposex in

Neogastropods along Coastal Marine Environments of Southeast Asia and China -- Current status of contamination by organotins and imposex in prosobranch gastropods in Korea -- 3. Fundamental knowledge of physiology and mode of action of organotins to induce the development of imposex in gastropod mollusks -- Neuropeptides and their physiological functions in mollusks -- Mode of action of organotins to induce the development of imposex in gastropods, focusing on steroid and the retinoid X receptor activation hypotheses -- Effects of organotins in mollusk's lipids -- Reproductive organ development in the ivory shell, *Babylonia japonica* and the rock shell, *Thais clavigera*.

---

#### Sommario/riassunto

This book provides an overview of the induction mechanism of imposex caused by organotin compounds in gastropods, as well as fundamental information on the physiology and biochemistry of reproduction in mollusks. Are the sex hormones of gastropod mollusks vertebrate-type steroids, or neuropeptides? What about lipid disturbance and membrane toxicity due to organotin compounds? The book also discusses the latest findings on the role of nuclear receptors, such as retinoid X receptor (RXR), retinoic acid receptor (RAR) and peroxisome proliferator-activated receptor (PPAR), in the development of imposex in gastropods. Further, it describes the current state of contamination by organotins in the marine environment and gastropod imposex, especially focusing on Europe and Asia, introduces readers to analytical techniques for organotin compounds, and assesses the contamination and adverse effects of alternatives to organotin-based antifouling paints. Imposex, a superimposition of male genital tracts, such as penis and vas deferens, on female gastropod mollusks, is known as a typical phenomenon or consequence of endocrine disruption in wildlife. Imposex is typically induced by very low concentrations of organotin compounds, such as tributyltin (TBT) and triphenyltin (TPhT) from antifouling paints on ships and fishing nets. Reproductive failure may be brought about in severely affected stages of imposex, resulting in population decline and/or mass extinction. Thus, gastropod imposex has been recognized as a critical environmental pollution issue. Although gastropod imposex is also highly interesting for the biological sciences because of its acquired pseudohermaphroditism and/or sex change by certain chemicals, such as TBT and TPhT, the mechanism that induces the development of imposex remains unclear, possibly due to our limited understanding of the endocrinology of gastropod mollusks. This book offers a useful guide for professionals and students interested in the fields of aquatic biology, invertebrate physiology, ecotoxicology and environmental science.

---