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Nota di contenuto	Human Cancer- Epidemiology, Hallmarks, and Defense Strategies -- Cancer Treatment Modalities Systemic and Loco regional Approaches: Challenges and Opportunities of multidisciplinary approaches -- Cancer Radiotherapy: General Considerations and Human Radiobiology -- Radionuclide Cancer Therapy- Unsealed Alpha, Beta and Gamma Emitters -- Locoregional Therapy – Cancer Interventions with and without Radionuclides -- Radiation Dosimetry Considerations of Locoregional Radionuclide Cancer Therapy -- Voxel-based Targeted Radionuclide Therapy Dosimetry -- Locoregional Unsealed Radionuclide Cancer Therapy – Experimental Findings -- Animal Cancer Therapy Models – Ready Translation to Humans -- An Overview of Regulations of Radiopharmaceuticals -- Locoregional Radionuclide Cancer Therapy (LRCT) Using Sealed & Unsealed Radionuclides.
Sommario/riassunto	This book reviews locoregional radionuclide cancer therapies (LRCT). Proving an increasingly viable alternative to radiotherapy, radionuclide therapy includes a diversity of choices of well characterized biochemical and physiologic target molecules. The delivery and retention of radionuclides may be monitored by advanced imaging for exact tissue localization and for real-time dosimetry to enable personalized precision medicine. Radiopharmaceuticals in human cancer therapies are typically delivered in systemic routes but can also

be designed for locoregional routes to harness pharmacokinetic advantages of higher payload and lower systemic toxicities. This book explores the latest advancements and clinical considerations of the locoregional approach. Throughout the chapters, the clinical and scientific bases of cancer treatment and the locoregional use of radionuclides are explored. Mathematical models of radiation dosimetry of locoregional radionuclides on tissues are studied using common models for multiple commercially available radionuclides. Rodent and canine tumor models of LRCT are compared for selected radionuclides and radiopharmaceuticals. The practical aspects of radiopharmaceuticals production, marketing, transport, as well as radiation protection are reviewed. Finally, the combination of LRCT with immunotherapy and other cancer therapies and prospective future use of LRCT are discussed. This is a guide for practicing nuclear physicians, interventional radiologists, radiation oncologists, radiation scientists, veterinarians and oncologists to expand their knowledge base and to prepare for designing locoregional radionuclide cancer therapies in animals and in humans.
