Molecular imaging is a field of medical imaging that focuses on imaging molecules of medical interest within living patients. This is in contrast to conventional methods for obtaining molecular information from preserved tissue samples, such as histology. Molecules of interest may be either ones produced naturally by the body, or synthetic molecules produced in a laboratory and injected into a patient by a doctor. The most common example of molecular imaging used clinically today is to inject a contrast agent (e.g., a microbubble, metal ion, or radioactive isotope) into a patient's bloodstream and to use an imaging modality (e.g., ultrasound, MRI, CT, PET) to track its movement in the body. Molecular imaging originated from the field of radiology from a need to better understand fundamental molecular processes inside organisms in a noninvasive manner.[1]

In the present book, fifteen typical literatures about molecular Imaging on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on molecular Imaging . We hope this book can demonstrate advances in molecular Imaging as well as give references to the researchers, students and other related people.

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[1] https://en.wikipedia.org/wiki/Molecular_imaging