



3.3.3.1 - Total number of books and chapters in edited volumes/books published and papers in national/international conference proceedings year wise during year

Multifunctional cyclodextrin nanoparticles: A promising theranostic tool for strategic targeting of cancer

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18.1 Introduction

A tiny tumor is featured in top 10 deadly diseases list and cancer mortality rate is continuously rising despite of advancement in its treatment. A magnificent history of the study of cancer began worldwide in this century and it is considered as the second most leading cause of death having an impact on the health of human life (Nagai and Kim, 2017). Moreover, statistical reports were also shown the ongoing leading cause of death is cancer. One of the most dreaded diseases in the world is cancer (Thun et al., 2010). Every year, over 11 lakh people are pretentious by cancer in India and 10 million worldwide (Roy and Saikia, 2016). It is projected that there will be 13.1 million deaths in year 2030 (approximately a 70% increase; Bray et al., 2018).

Cancer is a common name for a cluster of more than hundred diseases involving the abnormal and unregulated proliferation of cells with the potential to invade or spread to other organs of the body. These atypical strange cells are referred as cancerous cells, malignant, or tumor cells. These atypical malignant cells can create their own blood supply (angiogenesis), spreading away from the source organ, making transit through the blood vessels and lymphatic system, and seeding into other organs of the body where they can again repeat the uncontrolled growth cycle. Thus, this cancerous phase when malignant cells leaving one particular area and grow up in another part of

Punica granatum

Cultivation, Properties
and Health Benefits



Rupesh K. Gautam • Smriti Parashar
Editors

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Chapter 6

HEALTH BENEFITS OF *PUNICA GRANATUM* AGAINST DIABETES AND ASSOCIATED COMPLICATIONS

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ABSTRACT

More than 415 million individuals globally have diabetes mellitus in 2015, as per the International Diabetic Federation (IDF), and it is projected to grow to 642 million in 2040 except as urgent preventive steps are undertaken. Unless one of the life-threatening complications develops, diabetes mellitus may go undiagnosed. Chronic hyperglycemia leads to the development of secondary complications such as nephropathy, neuropathy, retinopathy, etc. which leads to alteration in a person's life. *Punica granatum*, popularly called as pomegranate, grenade, granats, and punica apple, is part of the Punicaceae family. In several nations, *Punica granatum* has been commonly used as a traditional medicine to treat dysentery, diarrhea, helminthiasis, acidosis, hemorrhage, and respiratory pathologies. Extracts of all parts of the fruit appear to have therapeutic properties. Recent research tends to suggest that ellagic acid ellagitannins (including punicalagins), puniceic acid, flavonoids, anthocyanidins, anthocyanins, and estrogenic flavonols and flavones are the key constituents of the *Punica granatum* tree and fruit are the most therapeutically beneficial pomegranate constituents. The beneficial health effects of *Punica granatum* is studied in a various model of diabetic and its complication. In this chapter, the authors tried to

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Chapter

Diagnosis in Medical Imaging

Emphasis on Photoacoustic Phenomena

By *N. Jadhav, Jaiprakash Sangshetti, Rohidas B. Arote*

Book [Machine Learning Approaches and Applications in Applied Intelligence for Healthcare Data Analytics](#)

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ABSTRACT

Photoacoustic imaging is a hybrid technique that shines laser light on tissue and measures optically induced ultrasound signals. There is growing interest within the clinical community in this new technique and its possible clinical applications. One of the most prominent features of photoacoustic imaging is its ability to characterise tissue, leveraging differences in the optical absorption of underlying tissue components such as haemoglobin, lipids, melanin, collagen and water among many others. In this review, the state-of-the-art photoacoustic imaging techniques and some of the key outcomes pertaining to different cancer applications in the clinic are presented.