Dhananjay Shukla Naveen Kumar Vishvakarma Ganji Purnachandra Nagaraju *Editors*

Colon Cancer Diagnosis and Therapy Vol. 3



Contents

Updates on Clinical Trials in Diagnosis and Therapy of Colorectal Cancer Farhan Ullah, Hariharasudan Mani, Maha Wazir, Sana Hussain, Saeed Ali, and Sarfraz Ahmad	1
Wnt Signaling-Related Long Noncoding RNAs: Critical Mediators of Drug Resistance in Colon Cancer. P. Vasudeva Raju and RamaRao Malla	21
The Triad of Estrogen, Estrogen Receptors, and Colon Cancer K. R. Sumalatha, Syamala Soumyakrishnan, and M. Sreepriya	41
Clinical Significance of Genetic Variants in Colon Cancer	69
Role of Nano-immunotherapy in Colorectal Cancer: An Updated Review	93
Mechanistic Exploration and Therapeutic Management of Colon Cancer Metastasis	105
Chemoresistance in Colorectal Malignancies: Molecular Mechanisms and Strategies to Overcome. Henu Kumar Verma, Yashwant Kumar Ratre, and Pellegrino Mazzone	123
Therapeutic Intervention of Signaling Pathways in Colorectal Cancer	143

xii Contents

Targeting Pathogenic Inflammation for Therapeutic Intervention Against Colon Cancer	173
Role of Tumour-Associated Macrophages in Colon Cancer Progression and Its Therapeutic Targeting Arundhati Mehta, Vivek Kumar Soni, Yashwant Kumar Ratre, Ajay Amit, Dhananjay Shukla, Ajay Kumar, and Naveen Kumar Vishvakarma	193
Advances in Chemoradiotherapy for Treatment of Colon Cancer V. K. Patel and H. Rajak	217
Cytotoxic and Chemopreventive Activity of Polyphenols and Their Derivatives in Colon Cancer Harit Jha and Ragini Arora	241
Prevention and Management of Colon Cancer	
by Nutritional Intervention	277
Vibha Sinha, Sapnita Shinde, Vineeta Dixit, Atul Kumar Tiwari, Ashwini K. Dixit, Naveen Kumar Vishvakarma, Sanjay Kumar Pandey, Alka Ekka, Mrinalini Singh, and Dhananjay Shukla	
Role of Food Additives and Intestinal Microflora in Colorectal Cancer Vivek Kumar Soni, Ajay Amit, Vikas Chandra, Pankaj Singh, Pradeep Kumar Singh, Rudra Pratap Singh, Girijesh Kumar Patel, and Rajat Pratap Singh	307
Effect of Milk and Dairy Products in Colorectal Cancer	325
Development of RNA-Based Medicine for Colorectal Cancer: Current Scenario. Ajay Amit, Sudhir Yadav, Rajat Pratap Singh, and Chanchal Kumar	339
Bacterial Cancer Therapy: Promising Role in the Treatment of Colon Cancer. Rishi Srivastava, Shweta Sonam, Naveen Kumar Vishvakarma, Rajesh Sharma, and Shree Prakash Tiwari	361
Antineoplastic Effects of Curcumin Against Colorectal Cancer: Application and Mechanisms. Vivek Kumar Soni, Arundhati Mehta, Yashwant Kumar Ratre, Chanchal Kumar, Rajat Pratap Singh, Abhishek Kumar Srivastava, Navaneet Chaturvedi, Dhananjay Shukla, Sudhir Kumar Pandey, and Naveen Kumar Vishvakarma	383

Contents	X111

Role of Chemokines in Colorectal Cancer Manisha Mathur, Sonal Gupta, Beiping Miao, Prashanth Suravajhala, and Obul Reddy Bandapalli	427
Index	441





Colon Cancer Diagnosis and Therapy Vol. 3 pp 277-306

Prevention and Management of Colon Cancer by Nutritional Intervention

Vibha Sinha, Sapnita Shinde, Vineeta Dixit, Atul Kumar Tiwari, Ashwini K.

Dixit, Naveen Kumar Vishvakarma, Sanjay Kumar Pandey, Alka Ekka,

Mrinalini Singh & Dhananjay Shukla

Chapter | First Online: 14 February 2022

122 Accesses

Abstract

Colorectal cancer (CRC) poses a significant threat to public health worldwide. It is the third most typically detected cancer in males and the second in females. The incidence rate of CRC differs among the geographical region; the highest rate was observed in developed countries and lowest in poorly developed countries. The reason behind this difference in CRC incidence rate is not clear, but socioeconomic, environment, and lifestyle factors have been shown to play an important role in CRC initiation and progression. Diet is a critical factor that helps to maintain overall health. Countries that follow Western diet in their lifestyle, those who consume red and processed meat, sugar, alcohol, and low amount of green vegetables fruits, and those who smoke are at high risk of colon cancer. Populations following diet enriched with green vegetables, fruits, whole grain, right dairy products, spices, etc., have lower risk of colon cancer. Bioactive components present in various diet play a significant role in decreasing the risk of colon cancer. These bioactive components have antioxidant, antiproliferative, antiinflammatory, and proapoptotic activity which together fight against colon malignant cells and reduce the risk.

Keywords

Colorectal cancer Diet Fruits