

Contents

1	Current Status and Characteristics of Cancer	1
1.1	Abnormal Metabolism	2
1.2	Abnormal Vasculature	3
1.3	Resistance to Anti-proliferative Growth Factors (GFs)	3
1.4	Unlimited Replicative Potential	4
1.5	Immune System Activation and Inflammation	4
1.6	Interstitial Pressure	4
	References	4
2	Clinical Anticancer Drugs for Cancer Treatment	7
2.1	Antimetabolites	8
2.2	Antimitotic Agents	8
2.3	Alkylating Agents	8
2.4	Antitumor Antibiotics	9
2.5	Tyrosine Kinase Inhibitors (TKI)	9
2.6	Cyclin Dependent Kinase (CDK) Inhibitors	9
2.7	Poly(ADP-Ribose) Polymerase (PARP) Inhibitors	10
2.8	Histone Deacetyltransferase Inhibitors (HDACi)	10
2.9	Mitogen-Activated Protein Kinase (MAPK) Kinase (MEK) Inhibitors	10
2.10	Serine/Threonine-Protein Kinase B-Raf Inhibitors	10
2.11	Mammalian Target of Rapamycin (MTOR) Inhibitors	10
2.12	Phosphoinositide 3-Kinase (PI3K) Inhibitors	11
2.13	Ribonucleotide Reductase (RNR) Inhibitors	11
2.14	DNA Methyltransferase Inhibitors	11
2.15	Retinoids	11
2.16	Monoclonal Antibodies (MAbs)	11
2.17	Combination Therapy	12
	References	12

3 Nanomaterial-Based Drug Delivery Carriers for Cancer	
Therapy	15
3.1 Introduction	15
3.2 Organic Nanomaterials	15
3.2.1 FDA-Approved Liposomes	15
3.2.2 Polymer-Based Nanoparticles	17
3.2.3 Supramolecular Nanosystems	18
3.2.4 Others	21
3.3 Inorganic Nanomaterials	23
3.3.1 Quantum Dots	24
3.3.2 Gold Nanomaterials	25
3.3.3 Mesoporous Silica Nanoparticles	30
3.3.4 Carbon Nanomaterials	33
3.3.5 Upconversion Nanoparticles	40
3.3.6 Two-Dimensional Nanomaterials	42
3.3.7 Others	43
3.4 Organic–Inorganic Hybrid Nanomaterials	45
References	47
Conclusions	55



<http://www.springer.com/978-981-10-3297-4>

Nanomaterial-Based Drug Delivery Carriers for Cancer
Therapy

Feng, T.; Zhao, Y.

2017, IX, 55 p. 35 illus., 32 illus. in color., Softcover

ISBN: 978-981-10-3297-4