

Index

a

- ABL1* 82–83, 107, 140, 143–145, 154–155, 157
- acute lymphoblastic/lymphocytic leukemia (ALL) 49, 78–79, 142
- acute myeloid leukemia (AML) 46, 75, 77, 84
- alveolar rhabdomyosarcoma 95
- Anaximander 4
- ancient theories 3–5
- animalcules 9
- Aristotle 152
- Arrighi, F. E. 61
- ascites fluid tumor cells 36–37, 41, 89
- atypical lipomatous tumors (ALT) 94
- Avery, A. G. 30
- Avery–MacLeod–McCarty experiment 18

b

- Baikie, A. G. 42–43
- banding cytogenetics 99
- banding revolution 59–70
- Bateson, W. 17
- Bauer, F. 10
- BCL2* 82
- BCR* 82, 83, 107, 140, 143–145, 154–155, 157
- Belling, J. 29
- benign smooth muscle tumors 91
- Berlin, E. A. 32
- Bichat, X. 11
- Blakeslee, A. F. 30
- Boveri–Sutton chromosome theory of inheritance 20
- Boveri, T. 19–20, 23–27, 182–183
- breast cancer 99
- Burkitt lymphoma (BL) 68, 70

c

- Cancer
 - clinical-cytogenetic associations 48–50, 76–80
 - pathogenetic classification of 151–157
 - specific chromosome abnormalities in 44–47, 66–70, 88–89, 117–123
 - cancerous cells in animal models 41–42, 47
- carcinomas 23, 97
- Caspersson, T. 60–61
- C-banding 61
- cella* 9
- cell division 18–19
- cell nuclei, colored bodies of 15–20
- cell theory 10
- cellular pathology 7–12
- centrosome 23
- chromatin, chromatic elements 18
- chromophobe renal cell carcinoma 172–173
- chromosome territory 182, 185
- chromosome theory of inheritance 20
- chronic myeloid leukemia (CML) 43, 44–49, 69, 82, 144–145, 155
- chronic myeloproliferative disorders 78
- Chrusterschoff, G. K. 32
- clinical-cytogenetic associations 48–50, 76–80
- clinical usefulness 137–146
- colchicine pretreatment 30
- Copernicus' heliocentric system 9
- Correns, C. 16
- cytology 10, 182

d

- “the Dark Age” 31
- Darwin, C. 15–16
- deletions 64

Denver nomenclature 38
de Spinoza, B. 9
de Vries, H. 16
DMBA-induced leukemias 47
dominant 17
double-hit model 110
Down syndrome 35
Dutrillaux, B. 62
dysmyelopoietic syndrome 46

e

electron microscopy 170
embolus 11
Empedocles 4
epigenetics 162, 164
ETV6 84, 142–143, 155
Ewing sarcoma 95
EWSR1 155–156

f

“factors of heritability” 17
Fanconi anemia 50
Fialkow, P. J. 43
Fischer, R. A. 17
FICTION technology 181
Flemming, W. 18
flow cytometry 181
fluorescence *in situ* hybridization (FISH)
technologies 65
Ford, C. 35, 42
French-American-British (FAB)
nomenclature 76

g

Gall, J. G. 61
Galton, F. 16
Gautier, M. 35
Gavaudan, P. 30
G-banding 61–62
gene 17
gene fusion 81, 83
genetic code 162
genetics 17
genome 27, 105–114
genotype 15
G-group chromosome 47
glucose-6-phosphate dehydrogenase
(G6PD) 43–44

h

Hamerton, J. 35
Hanseemann, D. 23
Harper, P. 32
Harris, H. 25
Hartsoeker, N. 9
Hauschka, T. 36
hematopoietic neoplasias 155
Hertwig, O. 20
Hippocrates 4
histology 10
historicism 151–157
HMGA1 93
HMGA2 92–93
homunculus 9–10
Hooke, R. 9
Hsu, T. C. 31–32, 61
Hughes, A. 31
Human Genome Project 66
humoral theories of disease 4
Hungerford, D. 42–43
“hypotonic miracle” 31

i

immunoglobulin genes 79, 81
insertions 64
International System for Human
Cytogenetic Nomenclature (ISCN)
62
inversions 64
irregular mitoses 23–24

j

Johannsen, W. 17

k

karyogram 165
“karyosomes” 18
karyotype 38, 61
Kemp, T. 30
kidney cancer 171
Klein, G. 108
KMT2A 78, 84, 155
Knudson, A. 109–110

l

La Cour, L. F. 30
Lampert, F. 49

- leiomyomas 92
 leiomyosarcomas 93
 Lejeune, J. 35
 “leukämie” 12
 leukemias 66, 75–84
 Levan, A. 30, 33–35, 47
 Link, J. H. F. 10
 lipomas 90–92
 liposarcomas 94
 loci 20
 lymphocytic malignancies 79
 lymphomas 75–84
 Lysenko, T. 33
- m**
- Makino, S. 31, 36, 42
 malignant epithelial tumor 97
 malignant fat cell tumors 94
 malignant neoplastic disorders 93
 malignant smooth muscle tumors 93
 malignant tumors 11
 marker-carrying cells 43
 massively parallel sequencing (MPS) 174
 McClintock, B. 163
 meiosis 20
 Melander, Y. 35
 Mendel, G. J. 16
 Mendelian genetics 16–17
 meningioma 87
 microscopic studies 8–9
 Miescher, J. F. 18
 mitosis 18, 20
MLL, see *KMT2A*
 molecular genetic studies 80–81
 monosomy 22, 66, 119
 Moorhead, P. 38
 mutation(s) 27
MYC 81, 163
 myelodysplastic syndrome (MDS) 45, 46,
 48, 77–78, 141, 154
 myxoid liposarcomas 94
- n**
- neoplasia 12
 neoplastic cell populations 125–134
 nonrandom clonal evolution pattern
 44–46
- NOR-banding 61
 Nowell, P. C. 36–37, 42–43
 “nuclear segments” 18
nuclein 18
- o**
- Ockham, W. 5
Omnis cellula e cellula 11
 oncogenes, quantitative and qualitative
 activation of 81–83, 107–108
- p**
- Painter, T. S. 31
 Pardue, M. L. 61
 parenchyma 41
 Paris Conference 62
 pathogenesis 8
 Ph^1 44
 phenotype 15, 153
 Philadelphia chromosome 43–45, 48, 69,
 76, 83, 144–145
phtisis 5
 phytohemagglutinin (PHA) 37–38, 179
 pleomorphic liposarcomas 94
 polycythemia vera (PV) 68
 polymerase chain reaction (PCR)
 technique 83
 Popper, K. R. 151
 position effect 162–163
 precision medicine 156
 preleukemia, see myelodysplasia (MDS)
- q**
- Q-banding 60
 “5q- syndrome” 77
 qualitative oncogene activation 82–83,
 107–108
 quantitative oncogene activation 81, 107
- r**
- Rabl, C. 182
 R-banding 62
 recessive 17
 “recessive genes” 109
 retinoblastoma (RB) 109–110
 retinoblastoma locus (*RB1*) 110–111
 round cell liposarcomas 94
 Rous sarcoma virus (RSV) 47

Rowley, J. D. 69
Rudolphi, K. 10

s

sarcomas 47
Schleiden, M. 10–11
Schwann, T. 10
secondary aberrations 126
secondary acute myeloid leukemia
 (sAML) 78
sex chromosome aberrations 139
single-gene genetics 18
single nucleotide polymorphism (SNP)
 arrays 171
Snow, C. P. 189
solid tumor 47
 cytogenetics 87–100
somatic mutation theory of cancer
 25–27
sperm cells 9–10
squash technique 29–30
Stanbridge, E. 108
stemline concept 42
Strasburger, E. 18
stroma 41
Sutton, W. 19
synchronous polyps 98
syndromology 66

t

theory of evolution 15
thrombus 11
Tjio, J. H. 33–34
Tough, I. M. 44
transformed somatic cell 92
translocations 64, 69
trisomy 7, 12, 79, 99, 154

tumor cell mitosis 37
tumor suppressor genes 27
Turpin, R. 35
tyrosine kinase inhibitors 144

u

uterine leiomyoma 91
uterine tumor 93

v

van Beneden, E. 18
van Leeuwenhoek, A. 9
van Steenis, H. 47
Vesalius, A. 7–8
Virchow, R. 11–12
von Mohl, H. 18
von Tschermak, E. 16
von Waldeyer-Hartz, W. 18
von Winiwarter, H. 31

w

water-filled spheres 8
“weisses Blut” 12
whole-exome sequencing (WES) 174
whole-genome sequencing (WGS) 174
Wittgenstein, L. 185

y

Yunis, J. 65

z

Zech, L. 60–61
Zellsubstanz, Kern und Zelltheilung
 (1882) 18
Zhivago, P. 32
Zur Frage der Entstehung maligner
 Tumoren (1914) 25