Biomarkers

Part 1: Technologies & Applications

By

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AUTHOR'S BIOGRAPHY

Professor K. K. Jain is a neurologist/neurosurgeon by training and has been working in the biotechnology/biopharmaceuticals industry for several years. He received graduate training in both Europe and USA, has held academic positions in several countries and is a Fellow of the Faculty of Pharmaceutical Medicine of the Royal College of Physicians of UK. Currently he is a consultant at Jain PharmaBiotech. Prof. Jain's 473 publications include 28 books (5 as editor+ 23 as author) and 50 special reports, which have covered important areas in biotechnology, gene therapy and biopharmaceuticals. The following Jain PharmaBiotech reports are relevant to biomarkers: proteomics, molecular diagnostics, nanobiotechnology, and personalized medicine. Recent books include "Handbook of Nanomedicine" (Springer 2008, Chinese edition by Peking University Press 2011, 3rd ed 2017), "Textbook of Personalized Medicine" (Springer 2009; Japanese ed 2012; 2nd ed Springer 2015), "Handbook of Biomarkers" (Springer 2010; Chinese ed, Chemical Industry Press 2016, 2nd ed 2017), "Handbook of Neuroprotection" (Springer 2011), "Applications of Biotechnology in Cardiovascular Therapeutics" (Springer 2011), "Applications of Biotechnology in Neurology" (Springer 2013), and "Applications of Biotechnology in Oncology" (Springer 2014). He has also edited "Applied Neurogenomics" (Springer 2015).

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Abbreviations

2D GE	2-dimensional gel electrophoresis
AD	Alzheimer's disease
BNP	B-type natriuretic peptide
CHD	coronary heart disease
CHF	congestive heart failure
CNS	central nervous system
CO	carbon monoxide
CRADA	cooperative research and development agreement (between a US federal laboratory and one or more non-federal parties)
CRP	C-reactive protein
CSF	cerebrospinal fluid
CT	computer tomography
CTC	circulating tumor cell
DT-MRI	diffusion-tensor MRI
EGFR	epithelial growth factor receptor
ELISA	Enzyme-linked immunosorbent assay
EST	expressed sequence tags
FDA	Food and Drug Administration, USA
FFPE	formalin-fixed paraffin-embedded
FISH	fluorescent in situ hybridization
fMRI	functional magnetic resonance imaging
GC	gas chromatography
GFAP	glial fibrillary acidic protein
GWAS	genome-wide association study
H_2S	hydrogen sulfide
Hs-CRP	high sensitivity C-reactive protein
IHC	Immunohistochemistry
IL	interleukin
KRAS	Kirsten rat sarcoma viral oncogene homolog
LC	liquid chromatography
LCM	laser capture microdissection
LDH	lactic dehydrogenase
LDT	Laboratory Developed Test

Lp-PLA2	lipoprotein-associated phospholipase A2
MALDI	matrix-assisted laser desorption/ionization
MALDI-MS	Matrix-Assisted Laser Desorption Mass Spectrometry
MCP-1	monocyte chemoattractant protein-1
miRNA	microRNA
MMR	mismatch repair
MRI	magnetic resonance imaging
MS	Mass spectrometry
mtDNA	mitochondrial DNA
NCI	National Cancer Institute
NIH	National Institutes of Health, USA
NMR	nuclear magnetic resonance
NO	nitric oxide
NRAS	neuroblastoma RAS viral (v-ras) oncogene homolog
NYHA	New York Heart Association
PCR	polymerase chain reaction
PET	positron emission tomography
PKC	protein kinase C
POC	point-of-care
PPAR	peroxisome proliferator-activator receptor
PSA	prostate-specific antigen
PSMA	prostate-specific membrane antigen
RAS	rat sarcoma viral oncogene homolog
RCAT	Rolling circle amplification technology
RNAi	RNA interference
SELDI-TOF	surface-enhanced laser desorption and ionization-time of flight
sICAM-1	soluble intercellular adhesion molecule-1
SNP	single nucleotide polymorphisms
SPR	surface plasma resonance
TIMI	Thrombolysis In Myocardial Infarction
USPTO	United States Patent & Trademark Office