

Biomarkers

Part 1: Technologies & Applications

By

Prof. K.K. Jain
MD, FRACS, FFPM
Jain PharmaBiotech
Basel, Switzerland

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A Jain PharmaBiotech Report

A U T H O R ' S B I O G R A P H Y

Professor K. K. Jain is a neurologist/neurosurgeon with specialist qualifications including Fellowships of the Royal Colleges of Surgeons in Australia and Canada. He has trained, practiced and held academic positions in several countries including Switzerland, India, Iran, Germany Canada and USA. After retirement from neurosurgery, Prof. Jain remains a consultant in neurology. He is also working in the biotechnology/biopharmaceuticals industry and is a Fellow of the Faculty of Pharmaceutical Medicine of the Royal College of Physicians of UK. Currently, he is the CEO of Jain PharmaBiotech.

Prof. Jain's 492 publications include 35 books (6 as editor+ 29 as author) and 50 special reports, which have covered important areas in biotechnology, gene therapy and biopharmaceuticals, biomarkers: proteomics, molecular diagnostics, nanobiotechnology, and personalized medicine. Contributions to MedLink, an accredited continuing education program for neurologists, include 172 articles out of a total of 1200 articles by 450 authors. These articles are updated on a yearly basis.

Prof. Jain's earlier books were the first in the areas covered: "Handbook of Laser Neurosurgery" (Charles C. Thomas, Springfield, Ill, 1983) and "Textbook of Hyperbaric Medicine" (1st ed in 1990 and 6th ed by Springer, 2017). His "Textbook of Gene Therapy" was translated into Chinese in 2000. 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, 3rd ed 2021), "Handbook of Biomarkers" (Springer 2010; Chinese ed, Chemical Industry Press 2016, 2nd ed 2017), "Drug-induced Neurological Disorders", 4th ed (Springer 2021), "Handbook of Neuroprotection" (Springer 2011, 2nd ed 2019), "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 3 editions of "Drug Delivery System" (Springer 2008, 20012 and 2018) and "Applied Neurogenomics" (Springer 2015). Lectures on personalized medicine given at Kazakh National Medical University, Kazakhstan were translated into Russian and published as a book "Essentials of Personalized Medicine" (LITERRA Publishing House, Moscow, 2019). Currently, he is writing "The Handbook of Alzheimer Disease to be published by Springer in 2022.

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Jain PharmaBiotech
Bläsiring 7
CH-4057 Basel
Switzerland

Tel & Fax: +4161-6924461
Email: info@pharmabiotech.ch
Web site:<http://pharmabiotech.ch/>

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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 ₂ S	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