

1. Record Nr.	UNINA9910985659403321
Autore	Alenzi Faris Q
Titolo	Animal Models in Experimental Medicine
Pubbl/distr/stampa	Sharjah : , : Bentham Science Publishers, , 2024 ©2024
ISBN	9789815196382 9815196383
Edizione	[1st ed.]
Descrizione fisica	1 online resource (282 pages)
Soggetti	Animal models in research Medicine, Experimental
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title -- Copyright -- End User License Agreement -- Contents -- Preface -- Dedication -- List of Contributors -- Animal Models for Cancer -- Fahad N. Alonazi1,* , Yousef M. Hawsawi2,3, Helal G. Alanazi4, Adel M. Alqarni4, Suad A. Alghamdi4 and Rakan J. Alanazi5 -- INTRODUCTION -- MECHANISMS OF CANCER DISEASE -- Cell Cycle -- Characteristics of Developing Tumors -- Escaping or Evading Growth Suppressors -- Ability to Enable Replicative Immortality -- Capacity to Sustain Proliferative Signalling -- Genome Instability and Mutations -- Capability for Resisting Apoptosis -- Tumour-promoting Inflammation -- Triggering Invasion and Metastasis -- Capability for Inducing/accessing the Vasculature -- Avoiding Immune Destruction System -- Cellular Metabolism Reprogramming -- ANIMAL MODELS IN CANCER RESEARCH -- Mice -- Chemically Induced Mice -- Genetically Engineered Mice -- Patient-derived Tumor Xenograft -- Zebrafish -- Drosophila -- Non-human Primates -- CONCLUSION -- REFERENCES -- Animal Modeling of Infectious Diseases -- Mohammed A. Afifi1, Mohammed W. Al-Rabia1,* and Deema I. Fallatah2 -- INTRODUCTION -- Schistosomiasis Model -- Ascaris Lumbricoides Model -- Fasciola Hepatica Model -- Hepatitis C Virus Model -- Listeria Monocytogenes Model -- Entamoeba Histolytica Model -- Cytomegalovirus Animal Model -- NON-PRIMATE SPECIES -- Non-Human Primates --

CONCLUSION -- REFERENCES -- Autoimmune Diseases in Animals -- Noufa Al Onazi1,* , Mona Alanazi2,3, Ghfren Aloraini4 and Aisha Al Anazi5 -- TYPE-1 DIABETES MELLITUS, NON-OBESE DIABETIC (T1DM) IN ANIMAL MODELS -- Introduction -- Epidemiology of Type-1 Diabetes Mellitus -- Risk Factors for Type-1 Diabetes Mellitus -- Animal Models of Type-1 Diabetes Mellitus -- Non-obese Diabetic Mouse (NOD) -- Genetically Modified Mice Models -- Biobreeding (BB) Rat -- Komeda Diabetes Prone (KDP) Rat -- Conclusion.

TYPE 2 DIABETES MELLITUS (T2DM) IN ANIMAL MODELS -- Introduction -- Disease Models Listed by Animals in the Past -- CABG in Large Animals -- Differences from Human Models -- AUTOIMMUNE THYROID DISEASES IN ANIMAL MODELS -- Introduction -- Epidemiology of Autoimmune Thyroid Diseases -- Risk Factors for Autoimmune Thyroid Diseases -- Possible Mechanism of Disease Development -- Animal Models of Human AITD -- The Spontaneous AITD Animal Model -- Induced AITD Model -- Conclusion -- ARTHRITIS IN ANIMAL MODELS -- Introduction -- The Animal Models Used -- Disease Mechanism -- Rat Adjuvant Arthritis -- The Cytokine Responses During the Course of Arthritis -- The Features of each Model -- DIFFERENCES FROM HUMAN MODELS -- In Vivo Models for RA -- CONCLUSION -- REFERENCES -- Animal Models of Anemia -- Yousef Hawsawi1,2,* , Abdulaziz Al Anizi3, Faihan Al Anizi3 and Fahad E. Albisi3 -- INTRODUCTION -- General Overview -- Animal Models of Anemia of Inflammation -- The Mouse Models of Anemia of Inflammation -- Transgenic Models Anemia of Inflammation -- The Rats' Models of Anemia of Inflammation -- Fish Models of Anemia of Inflammation -- Animal Models of Iron Deficiency Anemia During Pregnancy -- Animal Models of Iron Overload Hemochromatosis (HH) -- Animal Models of Menkes Syndrome -- Animal Models of Wilson Disease -- CONCLUSION -- REFERENCES -- Animal Models of Alzheimer's Disease -- Ammar Y. Jastaniah1,* -- INTRODUCTION -- MICE -- PDAPP -- Tg2576 -- APP23 -- TgCRND8 -- APP/PS1 -- 3xTg-AD -- 5xFAD -- APPNL-G-F Knock-in Mice -- APOE4-TR -- TREM2 KO/APPPS1 -- PS19 -- ALDH2 KO -- Injury-based and Trauma-based Models -- Other KO Mice -- Chemically Induced AD Models -- Mouse Model Drawbacks -- RATS -- Familial Swedish and Indiana -- PSAPP (Tg478/Tg1116/Tg11587) -- AD tau -- Chemically-induced -- LARGE ANIMALS -- Non-human Primates -- CONCLUSION -- REFERENCES.

Animal Models of Asthma -- Mohammed W. Al-Rabia1,* and Mohammed A. Afifi1 -- INTRODUCTION -- Asthma Phenotypes/endotypes -- Animal Models and Asthma: Value, Criteria of Selection, and Limitations -- Murine Models: Investigation of Asthma Pathogenesis and Airway Remodeling -- Murine Models: Investigation of the Genetic Basis of Asthma -- Murine Models: Role in Drug Discovery for Asthma -- Murine Models in Asthma: Limitations and Validity of Data Extrapolation -- Non-murine Models for Asthma -- CONCLUSION -- REFERENCES -- Atherosclerosis in Animals -- Rakan J. Alanazi1,* -- INTRODUCTION -- DISEASE MECHANISM -- DISEASE MODELS LISTED BY ANIMALS -- FEATURES OF EACH MODEL -- Rabbit Model -- Rat Model -- Pig and Non-human Model -- Other Animal Models of Atherosclerosis -- DIFFERENCE FROM HUMAN MODELS -- CONCLUSION -- REFERENCES -- Animal Models of Food Allergy -- Talal Adnan Basha1,* -- INTRODUCTION -- REVIEW OF FOOD HYPERSENSITIVITY PATHOGENESIS -- ANIMAL MODELS OF FOOD ALLERGY -- Murine Model -- Mouse Model with Adjuvant -- Mouse Model Without Adjuvant -- Genetically Modified Mice -- Transgenic/Humanized Mouse Model -- RAT Food Allergy Model -- Guinea Pig Model -- Canine Model -- Swine Model -- Sheep Model --

CONCLUSION -- REFERENCES -- Animal Models in Dentistry -- Jana Ali Alnajim1,* , Huda Abdullah Almutairi2 and Khalid Jamal Alanazi3 -- INTRODUCTION -- DISEASE MECHANISM -- Periodontal Disease -- Dental Caries -- Oral Cancer -- DISEASE MODEL LISTED BY ANIMALS -- ANIMAL MODELS -- Features of Each Animal Models used in Periodontology -- Dogs -- Cats -- Rats -- Hamsters -- Minks -- Miniature Pigs -- Mice -- Baker Mouse Model -- Non-Human Primates -- Other Animals -- Rabbit -- Horses -- Features of Each Model Used in Oral Cancer -- Rats Model -- Mouse Model -- Other Models -- Hamster Model -- Primates Model -- Features of Each Model used in Dental Caries. Rodent Model -- Rat Model -- Hamster Model -- Pig Model -- Dog Model -- Other Models -- Non-Human Primates -- Difference from Human Model -- CONCLUSION -- REFERENCES -- Animal Models for the Study of Autism -- Saba Abdi1,* -- INTRODUCTION -- ANIMAL MODELS OF AUTISM -- Genetic Models for Autism -- Animal Models for Genes of Human Syndromic Disorders Predisposing to Autism -- Animal Models for Non-syndromic Genes Associated with Autism -- Idiopathic Model of Autism -- Environment Exposure Models for Autism -- Toxin-induced Animal Models of Autism -- Drug-induced Animal Models of Autism -- Other Environment-induced Models of Autism -- Characterization of Animal Models of Autism -- CONCLUSION -- REFERENCES -- Animal Models for the Study of Osteoporosis -- Saba Abdi1,* -- INTRODUCTION -- Osteoporosis -- Animal Models of Osteoporosis -- SPECIFIC ANIMAL MODELS -- Primary Osteoporosis Model: Ovariectomy induced Animal Model for Postmenopausal Osteoporosis -- Rodent Model for Postmenopausal Osteoporosis -- Rabbit Model for Postmenopausal Osteoporosis -- Sheep Model for Postmenopausal Osteoporosis -- Other Large Animal Models for Postmenopausal Osteoporosis -- Primary Osteoporosis Model: Senile Osteoporosis -- Secondary Osteoporosis Model -- Glucocorticoid-Induced Osteoporosis Model -- Retinoic Acid-induced Osteoporosis Model -- Alcoholic Osteoporosis Model -- Disuse Osteoporosis Model -- METHODS FOR ANALYSIS/SCREENING OF ANIMAL MODELS OF OSTEOPOROSIS -- Dual Energy X-ray Absorptiometry (DXA) -- Peripheral Quantitative Computed Tomography (Pqct) and Microcomputed Tomography (μ CT) -- Bone Histomorphometry -- Serum Markers of Bone Turnover -- CONCLUSION -- REFERENCES -- Experimental Models in Autoimmune Uveitis -- Ahmed M. Al-Hakami1,* and Anandhalakshmi Subramanian1 -- INTRODUCTION -- AUTOIMMUNE UVEITIS (AU) -- ETIOPATHOGENESIS OF AUTOIMMUNE UVEITIS. ANIMAL MODEL FOR EXPERIMENTAL AUTOIMMUNE UVEITIS -- Retinal S-Antigen (S-Ag) -- Interphotoreceptor Retinoid-Binding Protein (IRBP) -- Recoverin -- Rhodopsin -- Phosducin -- Retinal Heat Shock Protein 60 (HSP60) -- EXPERIMENTAL AUTOIMMUNE UVEITIS [EAU] -- Induced Animal Models of Uveitis -- "Classical" EAU Induced in B10.RIII, B10. A and C57BL/6 mice -- EAU Induced by Retinal Antigens in Lewis Rat Model -- EAU Induced by Antigen-pulsed Syngeneic Dendritic Cells in Mice -- Spontaneous Uveitis Models -- B10.RIII Mouse Model -- Autoimmune Regulator (AIRE) Knockout Mice -- Transgenic Models -- Humanized Animal Models of Uveitis -- THE EXPERIMENTAL AUTOIMMUNE UVEITIS (EAU) GRADING SYSTEM -- CONCLUSION -- REFERENCES -- Subject Index -- Back Cover.

Sommario/riassunto

This reference presents information about models utilized in experimental medicine and pharmaceutical research and development for several human diseases. Written by experts in immunology, cancer biology and pharmacology, the book provides readers with handy notes

and updated data on animal models that are critical to research planning and lab execution. The main feature of the book is a set of 12 structured chapters that focus on a specific disease such as cancer, infectious diseases, autism, autoimmune diseases, Alzheimer's disease and anemia. The contributors have gathered information on a wide range of genetic and physiological animal models that are employed in research with comparative charts that highlight their main differences. The book also includes chapters for special topics like food allergies and dentistry. Additional features of the book are an explanation of disease mechanisms that give an easy understanding, notes for idiopathic models and specific clinical conditions, and a list of references for advanced readers. Animal Models In Experimental Medicine is essential reading for scholars, graduate students and senior researchers in life sciences and clinical medicine. It also serves as a resource for professionals involved in bench-to-bedside pharmaceutical projects. Readership Scholars, graduate students and senior researchers in life sciences and clinical medicine; professionals involved in bench-to-bedside pharmaceutical projects.
