1. Record Nr. UNINA9910583014303321

Autore	Voutchkov Nikolay
Titolo	Pretreatment for reverse osmosis desalination / / Nikolay Voutchkov
Pubbl/distr/stampa	Amsterdam, Netherlands : , : Elsevier, , 2017 ©2017
ISBN	0-12-809945-3
Descrizione fisica	1 online resource (291 pages) : illustrations (some color)
Disciplina	628.167
Soggetti	Saline water conversion - Reverse osmosis process Membranes (Technology) Nanofiltration
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	; Machine generated contents note: ; 1. Introduction to Saline Water Pretreatment -- ; 1.1. Purpose of Pretreatment -- ; 1.2. Membrane-Fouling Mechanisms -- References -- ; 2. Membrane Foulants and Saline Water Pretreatment -- ; 2.1. Introduction -- ; 2.2. Particulate Foulants -- ; 2.3. Colloidal Foulants -- ; 2.4. Mineral-Scaling Foulants -- ; 2.5. Natural Organic Foulants -- ; 2.6. Microbial Foulants -- ; 2.7. Combined Effect of Various Foulants on Membrane Performance -- References -- ; 3. Diagnostics of Membrane Fouling and Scaling -- ; 3.1. Purpose of Membrane Fouling and Scaling Diagnostics -- ; 3.2. Typical Membrane-Fouling Phenomena -- ; 3.3. Typical Diagnostics Procedures -- ; 3.4. Membrane Autopsy -- References -- ; 4. Saline Water Intakes and Pretreatment -- ; 4.1. Introduction -- ; 4.2. Subsurface Intakes -- ; 4.3. Open Intakes -- References -- ; 5. Pretreatment by Screening -- ; 5.1. Introduction -- ; 5.2. Bar, Band, and Drum Screens -- ; 5.3. Microscreens -- ; 5.4. Cartridge Filters -- References -- ; 6. Conditioning of Saline Water -- ; 6.1. Introduction -- ; 6.2. Coagulation -- ; 6.3. Flocculation -- ; 6.4. Addition of Scale Inhibitors -- ; 6.5. Addition of Sodium Hydroxide -- ; 6.6. Addition of Biocides -- ; 6.7. Addition of Reducing Compounds -- ; 6.8. Planning and Design Considerations for Source Water Conditioning -- References -- ; 7. Sand Removal, Sedimentation, and Dissolved Air

Flotation -- ; 7.1. Introduction -- ; 7.2. Sand Removal Systems -- ; 7.3. Sedimentation Tanks -- ; 7.4. Dissolved Air Flotation Clarifiers -- ; 7.5. Construction Costs of Lamella Settlers and DAF Clarifiers -- References -- ; 8. Granular Media Filtration -- ; 8.1. Introduction -- ; 8.2. The Filter Operation Cycle -- ; 8.3. Key Filtration System Components -- ; 8.4. Filter Types and Configurations -- ; 8.5. Filter Performance -- ; 8.6. Source Water Pretreatment Prior to Granular Media Filtration -- ; 8.7. Planning and Design Considerations -- ; 8.8. Construction Costs of Granular Media Filtration Systems -- References -- ; 9. Membrane Filtration -- ; 9.1. Introduction -- ; 9.2. The Membrane Filtration Process -- ; 9.3. Key Filtration System Components -- ; 9.4. Filter Types and Configurations -- ; 9.5. Filter Performance -- ; 9.6. Planning and Design Considerations -- ; 9.7. Overview of Membrane Products Used for Saline Water Pretreatment -- ; 9.8. Design Examples -- ; 9.9. Construction Costs of Membrane Pretreatment System -- References -- ; 10. Comparison of Granular Media and Membrane Pretreatment -- ; 10.1. Introduction -- ; 10.2. Effect of Source Water Quality on Performance -- ; 10.3. Surface Area Requirements -- ; 10.4. Quantity and Quality of Generated Residuals -- ; 10.5. Chemical Use -- ; 10.6. Power Use -- ; 10.7. Economy of Scale -- ; 10.8. Filtration Media Replacement Costs -- ; 10.9. Commoditization -- ; 10.10. Water Production Costs -- ; 10.11. Concluding Remarks -- References -- ; 11. Guidelines for Pretreatment System Selection -- ; 11.1. Introduction -- ; 11.2. Pretreatment Selection Guidelines -- ; 11.3. Additional Considerations for Selection of Pretreatment -- References -- ; 12. Reverse Osmosis System Design and Pretreatment -- ; 12.1. Overview of Typical SWRO Desalination System -- ; 12.2. SWRO Membrane Elements -- Key Types and Pretreatment Considerations -- ; 12.3. Internally Staged Membrane Configuration -- Fouling Implications -- ; 12.4. Alternative SWRO-Membrane Systems and Pretreatment -- ; 12.5. Alternatives for Control of Microbial Fouling -- References.

2. Record Nr. UNINA9910838279503321

Autore	Kim Cheorl-Ho
Titolo	Glycoimmunology in Xenotransplantation / / by Cheorl-Ho Kim
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	9789819976911 981997691X
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (378 pages)
Disciplina	617.954
Soggetti	Biology Biological Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- Table of Contents -- Keywords -- Chapter 1 Origin of Life and Diversity of Glycan -- Chapter 2 Current State of Xenotransplantation -- Chapter 3 Pig as Best Source for Clinical Xenotransplantation -- Chapter 4 Glycan Antigens of Pig Interfering with Xenotransplantation: Three Immune Responses from the Glycans -- Chapter 5 Glycosylation in Eukaryotes -- Chapter 6 Human Red Blood Cell (RBC) Blood Groups System -- Chapter 7 Non-ABO Blood Group Systems -- Chapter 8 Conceptual Aspect of Xenotransplantation from ABO Blood Type-incompatible Organ Allotransplantation -- Chapter 9 Classification of Rejection in Host Recipients in Xenotransplantation -- Chapter 10 Hyper Acute Rejection (HAR) -- Chapter 11 Non-1,3Gal Carbohydrate Antigenic Epitopes -- Chapter 12. Other non-a1,3Gal Antigens -- Chapter 13 Blood Mediated Inflammatory Reaction (IBMIR) and Prevention of IBMIR -- Chapter 14 Protection of Cellular Antigens from Xenoreactive Responses as Overcoming Strategies -- Chapter 15 Delayed Rejection of Xenograft (DRX) -- Chapter 16 Blood Coagulation as Coagulation Dysregulation -- Chapter 17 Xenogeneic and Allogenic Cellular Rejection (CR) -- Chapter 18 Induction of Xenograft Tolerance and Chimerism as an Alternative Prevention of Xenograft Rejection -- Chapter 19 Genome Editing and Transgenes in Pigs -- Chapter 20 Solid Xenoorgan Xenotransplantation -- Chapter 21 Infectious Risk and Protection --

Chapter 22 Concept of Chimeric Organisms such as Human-non-human chimera (HNH-chimera) -- Chapter 23 Intra-bone Bone Marrow Transplantation -- Chapter 24 The Future of Pig Organ and Cell Xenotransplantation -- Chapter 25 Conclusions.

Sommario/riassunto

This book describes general glycobiology in emphasizing the structures, biosynthesis, glycosylation and distribution of the glycans and xenogenic glycoantigens in eukaryotic cells of mammals including mouse, swine, chimpanzee and human. In the middle, I have focused on topics in xenotransplantation glycobiology and expand descriptions of allogenic and xenoantigenic transplantation to open the dawn in insights into the origin of life. One of the biological diversity, named species diversity, is a phenomenon environmentally adapted from the evolutionary process for long period. The distinct structures of glycans discriminate each organism and are the essential molecular basis of the discrimination and difference between the organisms, giving an incompatibility between the different species. Diversity and variations in carbohydrate chain structures between family, species, kingdoms and domains mark the global pattern and signs of immune self- and non-self recognition. In human, diversityin ABH blood group antigens is observed in human family and this type pattern distinguishes individuals from a pan-family to non-dividable unit of the family. Blood transfusion and organ transplantation are impossible even in the allogenic cross between humans if carbohydrates are ignored. This explains how and how human beings are a lonely existence. ABH-related antibodies induce hemolysis or hyperacute or allograft rejection due to incompatible graft property even between the same species. The incompatibility is an immunologic rejection when the recipient host receives the tissues or organs from the different species of donors, as well-known in pig-to-human xenotransplantation. The immunologic incompatibility between the donor pigs and the recipient human are based on the evolutionary distance between pigs and humans. This distance allows a xenograft rejection between the 2 mammals. Modification or deletion of the specific gene locus for immune rejection on genome of donor animals disrupts the immunological recognition ligands of the donor organs, consequently preventing the immune rejection of the human recipient and xenograft rejection. This book helps undergraduate and graduate students, researcher and professors who are involved in the glycobiology and xenoantigenic biology with recent advances in the xenotransplantation basic and clinic.