

1. Record Nr.	UNINA9910437894503321
Titolo	Sialo-Xenoantigenic Glycobiology : Molecular Glycobiology of Sialylglycan-Xenoantigenic Determinants in Pig to Human Xenotransplantation / / by Kwon-Ho Song, Cheorl-Ho Kim
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2013
ISBN	1-283-91007-1 3-642-34094-6
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (75 p.)
Collana	Sungkyunkwan University Outstanding Research, , 2195-3554 ; ; 1
Altri autori (Persone)	SongKwon-ho KimCheorl-ho
Disciplina	572.567
Soggetti	Biomedical engineering Medicine - Research Biology - Research Medical genetics Clinical biochemistry Biochemistry Biomedical Engineering and Bioengineering Biomedical Research Medical Genetics Medical Biochemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Screening of pig glycosyltransferase genes related to xenoantigens and their masking -- Cloning and tissue specific expression of pcma and its alternative transcripts -- Functional characterization of pCMAH in the synthesis of N-glycolylneuraminic acid as the xenoantigenic determinant in pig-to-human xenotransplantation -- Identification of two alternative promoters of the pig CMP-N-acetylneuraminic acid hydroxylase gene -- Screening for xenoantigenic determinants formed by sialyltransferases.
Sommario/riassunto	Carbohydrate antigens on glycoconjugates of mammalian cells play

crucial roles in various biological processes and are epitopes recognized by the immune system, as glycobiology has hugely been progressed during the past two decades. The book focuses on sialic acid-based xenoantigenes. In pig to human xenotransplantation, exposure of pig organs to human blood results in hyper acute rejection (HAR), caused by differences in carbohydrate epitopes between human and pig vascular endothelia. Although Gal-antigen as major antigen was eliminated, the remaining non-Gal antigens are considered to be xenoantigens. Sialosyl-Tn or Hanganutziu-Deicher (HD), are non-Gal antigens specific to natural antibodies in human. To overcome rejection responses such as HAR, studies of genes involved in carbohydrate antigens, causing xenoantigenicity, are necessary. Knowledge of pig glycosyltransferases are also useful to apply to xenoantigen masking or identification of the xenoantigenic sialylglycan(s). In the first chapter the screening for pig glycosyltransferase genes for xenoantigens is presented. In the chapter II to IV the cloning, characterization, and investigation of the regulatory mechanism of the pig CMAH gene in NeuGc biosynthesis is shown. Lastly, the effects of an alteration of pig glycosylation patterns on human serum-mediated cytotoxicity, caused by human sialyltransferases including hST6GalNAc IV is presented. .
