



COURSE DESCRIPTION

ACADEMIC CENTER ROBERTO ALCANTARA GOMES BIOLOGY INSTITUTE	DEPARTMENT DEPARTMENT OF ANATOMY		
COURSE NAME BIOCHEMISTRY AND CELLULAR BIOLOGY OF PROTEOGLYCANS	() CORE COURSE	HOURS 30	CREDITS 2
	() OPTIONAL COURSE		
PROGRAM / PROJECT NAME PHYSIOPATHOLOGY AND SURGICAL SCIENCES <u>Key Focus Area:</u> Urogenital System	DISTRIBUTION OF HOURS		
	TYPE OF CLASS	HOURS	N. OF CREDITS
	THEORETICAL	30	2
	PRACTICAL		
	TOTAL	30	2
PREREQUISITES		(X) Master's program course	
		(X) Doctorate's program course	

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The purpose of this course is to offer the student general aspects about the structure and function of proteoglycans and their glycosaminoglycans chains. Such knowledge will allow a better understanding of the relevance of proteoglycans within the context of the physiology of the extra-cellular matrix, including the participation of these molecules in several pathological processes. The course covers the following topics: 1) Definition of proteoglycans (PG) and glycosaminoglycans (GAC). 2) Structural diversity of PG and GAC. 3) Organization of PG in optical and electronic microscopy. 4) Function of PG. 5) Synthesis and degradation. 6) Involvement in pathological processes. 7) Biochemical and morphological methods for the study of PG.

BASIC BIBLIOGRAPHY

1. Ayad S, Boot-Handford RP, Humphries MJ, Kadler KE, Shuttleworth CA: The Extracellular Matrix Facts Book. 2nd ed. Academic Press, pp. 301, 1998.
2. Chaplin MF, Kennedy JF: Carbohydrate Analysis. 2nd ed. IRL Press, pp. 324, 1994.
3. Haralson MA, Hassel JR: Extracellular Matrix. IRL Press, pp. 404, 1995.
4. Iozzo R: Matrix Proteoglycans: from Molecular Design to Cellular function. Ann Rev Biochem, 67:609-652, 1998.
5. Schamhart DH, Kurth KH: Proteoglycans and glycosaminoglycans in tumor growth and migration: first experience with tumors of bladder and prostate origin. World J Urol, 12: 55-61, 1994.
6. Vogel KG: Glycosaminoglycans and Proteoglycans. In Yurchenco P. D. et al. (eds): Extracellular matrix assembly and structure. Academic Press, pp.243-279, 1994.
7. Wight TN, Hascall V: Proteoglycans. Structure and function. In Hay ED (ed): Cell Biology of Extracellular Matrix. 2nd ed. Plenum Press, pp. 45-78, 1991.

PROGRAM / PROJECT COORDINATOR

DATE	SIGNATURE