



COURSE DESCRIPTION

ACADEMIC CENTER ROBERTO ALCANTARA GOMES BIOLOGY INSTITUTE		DEPARTMENT OF ANATOMY														
COURSE NAME BIOCHEMISTRY AND CELLULAR BIOLOGY OF PROTEOGLYCANS		<input type="checkbox"/> CORE COURSE <input checked="" type="checkbox"/> OPTIONAL COURSE	HOURS 30	CREDITS 2												
PROGRAM / PROJECT NAME PHYSIOPATHOLOGY AND SURGICAL SCIENCES <u>Key Focus Area:</u> Urogenital System		DISTRIBUTION OF HOURS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">TYPE OF CLASS</th> <th style="width: 20%;">HOURS</th> <th style="width: 40%;">N. OF CREDITS</th> </tr> </thead> <tbody> <tr> <td>THEORETICAL</td> <td style="text-align: center;">30</td> <td style="text-align: center;">2</td> </tr> <tr> <td>PRACTICAL</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">TOTAL</td> <td style="text-align: center;">30</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>			TYPE OF CLASS	HOURS	N. OF CREDITS	THEORETICAL	30	2	PRACTICAL			TOTAL	30	2
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PREREQUISITES		<input checked="" type="checkbox"/> Master's program course <input checked="" type="checkbox"/> 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 PGs and GACs. 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

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