

STUDY ON FERTILIZED EGGS IN THE EGG-CAPSULES OF *JANTHINA PALLIDA* (THOPSON, 1840) MOLL. GAST. PROS.

C. Calabrò,¹ S. Giacobbe,¹ C. Bertuccio,² A. Alesci,³
D. Palombieri,³ P. LoCasco³

¹Dept. of Animal Biology and Marine Ecology, ²Dept. Life Science, ³Dept. of Food and Environmental Science, University of Messina, Italy.
E-mail: deborahpalombieri@alice.it

The genus *Janthina*, includes no more than ten species of Mesogastropoda Prosobranchia Mollusca widespread in the tropical and subtropical waters of all oceans;¹ floating on the water-surface by means of peculiar rafts made of air bubbles. The specific adaptations of *Janthinidae* to pelagic life have been of interest to several authors.^{2,3} Still reproductive biology is not clear, therefore in this regard investigations carried out the different stages of development of fertilized eggs of *Janthina pallida* individuals, collected on the east shore of Strait of Messina on weather conditions that allowed the stranding. In large specimens a hermaphrodite gonad, with an indistinct separation between male and female zones with germinative cells in different stages of spermatogenesis and oogenesis, was observed. Histochemical and immunohistochemical analysis revealed respectively in yolk globules, proteins, glycoproteins, proteoglycans and glycoconjugates by conferring to α -D-glucose, α -D-mannose, α -L-fucose and β -D-galactose sugar radicals and vitellogenin. The simultaneous presence in the adults of germinal cells, in all stages of maturity and of embryonate eggs in the egg-capsules, suggests, in this species, a possible self-fertilization ability in positive environment.

References

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SARCOGLYCANS IN RAT'S CEREBRAL AND CEREBELLAR CORTEX: AN IMMUNOHISTOCHEMICAL STUDY

G. Anastasi, F. Trimarchi, D. Di Mauro, G. Rizzo, G. Vermiglio, L. Magaudo

Dept. of Biomorphology and Biotechnology, University of Messina, Italy. E-mail: ddimauro@unime.it

The sarcoglycan sub-complex (SGC) is a transmembrane protein system which plays a key role in sarcolemma stabilization during muscle activity and in cellular signalling. In cerebral and cerebellar cortex, only ϵ -sarcoglycan presence it was demonstrated because its involvement in Myoclonus Dystonia syndrome (MDS). On this basis we carried out an indirect immunofluorescence study on normal rat's cerebral and cerebellar cortex where we have tested α -, β -, γ -, δ - and ϵ -sarcoglycans expression. Our results showed that both in cerebral and cerebellar cortex all of tested sarcoglycans are present, by a "spot-like" fluorescence pattern, with spots of 0.5-2 μ in middle-size laid out mainly around cellular soma of neurons and glial cells. In cerebral cortex, though all of sarcoglycans are present, a staining pattern variability for each sarcoglycan exists. In fact, our data show that the distribution pattern level of some sarcoglycan in anterior sections, corresponding to fronto-parietal region, is different to their distribution pattern level in posterior sections, corresponding to parieto-occipital region. In cerebellar cortex we found that in neurons sarcoglycans positivity is localized only in single layer present in a middle region of the section. These results, showing a distribution of SGs around cellular soma of neurons and glial cells in cere-

bral and cerebellar cortex, suggest that in brain sarcoglycans may play a key role in cellular signalling, regulating membrane receptors assembly; we can also speculate that the staining pattern variability detected in cerebral cortex could marks a specific receptor network present in each cerebral cortex areas.

INTEGRINS IN MASSETER MUSCLE IN UNILATERAL CROSSBITE PATIENTS: AN IMMUNOHISTOCHEMICAL STUDY

G. Cutroneo, G. Isola, A. Centofanti, M. Runci, E. Magaudo, A. Favalaro

Dept. of Biotechnology and Biomorphology, University of Messina, Italy. E-mail: afavaloro@unime.it

Integrins are heterodimeric cell surface integral membrane proteins that play a key role in cell adhesion, differentiation, remodelling and tissue repair. B1D isoform is synthesized only in skeletal and cardiac muscle, while very low amounts of β 1A were detected by immunoblot in striated muscles. B1D isoform was associated with α 7A and α 7B in adult skeletal muscle. Although many studies have been performed on the integrins in adult skeletal muscle, insufficient data exist on behaviour of these proteins in masseter muscle. About this muscles it was demonstrated that they have several differences in respect to limb and trunk muscles. Generally, fibers in the masseter muscle are smaller than fibers in limb and trunk muscles. Consequently, the smaller muscle fibers may be advantageous for the jaw muscles. On this basis, we performed an immunohistochemical study in order to analyze the behaviour of integrins in normal masseter muscle of both side; moreover, to better comprehend the role of these proteins, we also analyzed masseter muscles of patients affected by unilateral crossbite. Interestingly, our result showed that, on patients affected by right crossbite, the integrins are substantially less, in both masseters, than those observed in control subjects; in right masseter, the amount of integrin appeared less than the amount of integrins detected in left counterpart. Since kinematics and electromyography study have been demonstrated that masseters of the crossbite side were less active than non-affected side, our results, showing a decrease of integrins in the masseter of crossbite side, allow to hypothesize that the integrins, and in particular α 7A and β 1A integrins, could play a crucial role in the control of contraction activity.

DETECTION OF MMP-2 IN HUMAN DENTIN MATRIX

A. Mazzoni,¹ P. Gobbi,² V. Papa,³ F. Nato,¹ A. Ruggeri Jr,¹ L. Breschi,⁴ G. Mazzotti²

¹Dept. SAU&FAL, Univ. of Bologna, Bologna; ²Dept. STeVA, Univ. of Urbino "Carlo Bo", Urbino; ³Dept. of Sport, Sciences & Health, Univ. of Cassino, Cassino; ⁴Dept. of Biomedicine, Univ. of Trieste, Trieste, Italy
E-mail: pietro.gobbi@uniurb.it

Matrix metalloproteinases (MMPs) are important components in many biological and pathological processes because of their ability to degrade all extracellular matrix (ECM) components. The aim of the study was to identify MMP-2 in human dentin by immunohistochemical and biochemical methods. Dentin cryo-fractured fragments were obtained from human sound teeth, partially decalcified in 0.5 M EDTA pH 7.4 for 30min and submitted to a pre-embedding immunolabeling technique, using primary monoclonal antibodies anti-MMP-8 and exposed to a secondary antibody conjugated with gold nano-particles. Observation was performed by means of a FEI-SEM. The presence of MMP-2 was additionally assayed and quantified using a colorimetric assay system that allows direct