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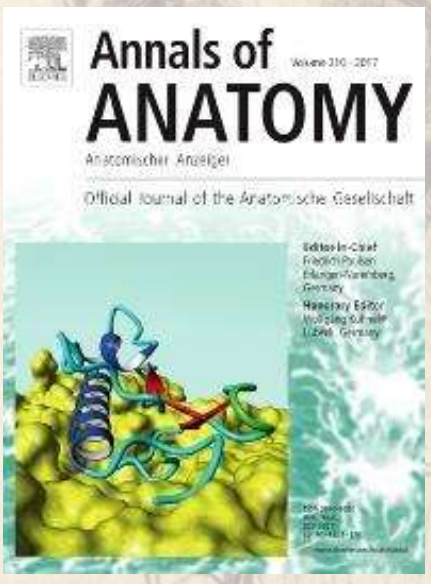
ABSTRACT

In collaborazione con:



TECNIPLAST
innovation through passion

La Segreteria Scientifica e la Segreteria Organizzativa si riservano il diritto di apportare qualsiasi variazione al programma che si dovesse rendere necessaria per ragioni tecniche e/o scientifiche

1.7 Meniscus maturation in the swine model: role of endostatin in cellular differentiation

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The development of an engineered meniscus derives from the need to regenerate a tissue which is largely unable to self-repair with consequent loss of functionality. Hence a deeper knowledge of the native meniscus morphology and biomechanics in its different regions, including molecules involved in regulation of the maturation process, is essential. The meniscus is a complex tissue, displaying great regional variation in extracellular matrix components and in vascularization, as a result of several biomechanical stimuli. Its biochemical composition is modulated to adapt the tissue to the different functions that are required throughout growth, until a "mature" phase is reached in adulthood. The aim of this work is to evaluate the biological role of Endostatin in the regulation of angiogenesis as in the fibro-chondrogenic differentiation of neonatal meniscal cells in the pig. The swine is an attractive model for meniscal repair studies, as its knee joint is closely comparable to the human one in terms of anatomical structure, vascularization, and healing potential. Our preliminary data show that Endostatin contributes to the acquisition of chondrocyte phenotype in an undifferentiated but committed cellular population. Thus, a better understanding of the role of Endostatin in cell metabolism might lead to a deeper knowledge of the events regulating meniscus maturation. These findings may be crucial for the development of an engineered scaffold able to induce meniscal cell differentiation by releasing Endostatin-rich microspheres.

1.8 Biometrical study to evaluate the relationship between body parameters and winter feeding resources in central Italy Apennine roe deer population

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The study analyses the biometrical data obtained from animals pertaining to class 0 (0-11 months) and 2 (over 2 years), in roe deer population of central Italy Apennine. The biometrical analysis was performed on body and cranial parameters of 234 roe deer obtained by selective shooting. For the mandible morphometric analysis, 58 samples were treated with the GeoGebra's program. To evaluate the relationship between size/shape of body structure/parameters and the feeding resources available during the autumn-winter period, an environmental category (derived from the carrying capacity of forest ecosystems relative to the hunting zone/district) was attributed to each specimen. Statistical analysis was performed by ANOVA. Shape variables were generated using Generalized Procustes TPS Analysis program. In class 0 the analysis showed no significant differences neither between sex nor among environmental categories. In class 2 the analysis showed significant differences for four body parameters (but not for the cranial ones) between sex; among environmental categories the mandible length showed significant differences, in addition there is an increasing trend for tooth line and body weight from lower to higher environmental category. Males pertaining to class 2 showed an increasing trend in the tooth line related to environmental category; in females, this parameter had similar values in the different environmental categories, while the mandible length showed significant differences inversely linked to environmental category. Shape analysis showed a more open mandibular angle in class 0 subjects living in the hunting zone characterized by highest feeding resources; however, additional data occur to confirm this statement.