

P021 Teleost bone and cartilage ECM proteins
Vieira, Florbela A and Power, Deborah M

*Comparative and Molecular Endocrinology Group
Centro de Ciências do Mar – Universidade do Algarve
Campus de Gambelas 8005 – 139 Faro, Portugal*

Bone and cartilage are specialized connective tissues with an extracellular matrix composed of several collagenous and non-collagenous proteins, transcription factors, cytokines and different cell types. Tetrapod bones are composed of three different cell types (osteoblasts, osteoclasts and osteocytes) and, in mammals, the mechanisms involved in bone formation and turnover have been vastly reported. In contrast, in teleosts, this mechanism is poorly studied and two different bone structures have been described, one identical in structure with tetrapods and another that does not contain osteocytes and are designated as acellular bones.

In the present study, the molecular characterisation of bone and cartilage matrix of two teleosts, sea bass and sea bream, was carried out using available cDNA sequence data by the identification of the human bone and cartilage proteins and transcription factors. In teleosts, several putative homologue genes present in bone and cartilage extracellular matrix (collagens and metalloproteinases, osteonectin, osteocalcin, fibronectin1 and vitronectin) were identified suggesting that a common mechanism exists and functional studies will be carried out to investigate their role in the skeleton.

Acknowledgments: Funded by POCI 2010, European Social Funds, Fundação para a Ciência e Tecnologia (BD/17630/2004) and by a CCMAR pluriannual grant.