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**PROTEOMIC ANALYSIS OF A MEDIA CONDITIONED
BY GROWING DEER ANTLER TISSUES: IDENTIFICATION
OF ITS NEURITE GROWTH PROMOTING PROTEINS**

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The annual regeneration cycle of the deer (Cervidae, Artiodactyla) antlers represents an unique model of epimorphic regeneration and rapid growth in adult mammals. During this cycle, the different tissues that make up the antlers, including their innervation, grow in the common deer (*Cervus elaphus*) to reach over 1 metre of lengths. All the growing process takes place in approximately 3 months during the springtime, reaching elongation velocities up to 2 centimetres per day, one of the highest rates of growth in adult animals. In previous studies, we have shown that factors secreted in conditioned media by the velvet (the form of modified skin that covers the whole antler during its annual regeneration period) after its organotypic culture promote *in vitro* neuritogenesis and neurite growth of adult and embryonary sensory neurons from rats (*Rattus norvegicus*). Activity analyses after different treatments of these media (enzymatic digestion, heating at 95°C, filtering, ...) have allow us to establish the proteic nature of the neurite growth promoting factors. With the aim of identifying the proteins contained in these conditioned media and to identify candidates for neurite growth promoters we have analyzed the media using different proteomic approaches like two-dimensional electrophoresis and mass spectrometry. The results of these analyses showed the suitability of this methodology and allowed us to identify several proteins present in the cultured tissue secretome. We have also compared this secretome with the untreated culture media, in order to find secreted proteins that could be considered potentially responsible of promoting neural growth.