

APPLICATION OF PROTEOMIC TECHNIQUES TO ANALYZE NERVE GROWTH PROMOTERS FROM ANTLER CONDITIONED MEDIUM

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Deer antlers are unique organs among mammals due to their annual regeneration cycle. We have combined different proteomic techniques to identify and analyze the proteins involved in the extremely fast nerve growth that accompanies this regeneration process. We produced a medium conditioned by antler velvet tissue with significant neurite growth promoting capabilities and used several proteomic techniques to analyze different aspects of it. In a first approach, we combined 1D electrophoresis with LC-MS/MS identification in a 4000QTrap system to determine the proteins present in the antler conditioned media and to hypothesize possible candidate promoters. We also performed MRM analysis in these conditioned media, monitoring different nerve growth promoters previously described in the antlers. One such factor is NGF, expressed in the antler velvet and probably present in the conditioned medium. To confirm its presence and the ability of specific antibodies to deplete it from the medium we employed MRM analysis together with WesternBlot. Specific 60 kDa proteins immunoreactive to anti-NGF were analyzed in detail comparing the sequences obtained by LC-MS/MS.