**Collagen IV homology in *Nematostella vectensis* and *Homo sapiens* and its implications of regeneration**

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Basement membranes are networks within the extracellular matrix (ECM) made up of scaffolding proteins, predominately collagen IV, which provide stabilization and compartmentalization of tissues. Collagen IV emerged roughly 600 million years ago at the divergence of the sponge and Cnidaria most likely resulting from adaptation of the ECM to mechanical stressors, and this protein has been conserved throughout metazoan development strongly suggesting its functional relevance. Unlike many other collagen types, α112 form of collagen IV is widely expressed in many tissues and organs, therefore any disruption of its assembly might systemically perturb ECM structure, thus compromising its integrity risking biological pathologies. *Nematostella vectensis* is a primitive Cnidarian highly capable of regeneration. Interestingly, it has a basement membrane made of collagen IV which is homologous to the human protein. The aim of this research was to explore *Nematostella* collagen IV sequence homology with that of the *Homo sapiens*, and subsequently clone and express it as a recombinant protein in Expi293, a novel suspension cell line characterized by high level of protein expression. This would allow studying of the mechanisms of extracellular assembly of collagen IV and formation of stabilizing crosslinks between NC1 domains. Moreover, this will enable the address of a fundamental question of how the disruption of network assembly affects *Nematostella* regeneration and normal development.