Type XV/XVIII collagens, components of basement membranes (BMs), form a distinct subgroup called Multiplexin among the collagen family, characterized by multiple glycosaminoglycan attachment sites and by the central triple helical region with multiple interruptions flanked by N-terminal thrombospondin type I repeat and C-terminal endostatin domain [1]. They have been conserved widely among the metazoans and are suggested to be important in skeletal muscle stability [2], cell migration, axon guidance [3], but the underlying mechanism is unknown yet. To further explore its biological function, we examined Drosophila type XV/XVIII collagen homologue, which we named “Drole” (DROSophila colIagen with Endostatin). We identified two major forms of transcripts, generated from distantly located promoters. In situ hybridization using specific probes on whole embryos exhibited an accumulation in the central nervous system. Immunostaining with anti-Drole exhibited a unique segmental expression pattern in a subset of cells in the central nervous system, as well as in the peripheral nervous system in the developing embryos. Loss of function mutants displayed multiple defects such as low surviving ratio, neural defect and an altered BM ultrastructure, which may mimic the deposits observed in the retina of Col18a1-/- mice [4]. Overall, our results indicate an important role for Drole during early embryogenesis.