CEREBELLAR HYPOPLASIA

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- Neuroblasts are immature precursors of nerve cells.
- In the developing brain, neuroblasts migrate to their proper positions for maturation to nerve cells.
- Reelin is a protein that is involved in the signaling pathway that guides and positions neuroblasts.
- Defects in this signaling pathway lead to incomplete development (hypoplasia) of the cerebellum.
Figure 1. Neuroblasts are cells that are destined to become nerve cells and are referred to as precursor cells. The neuroblasts must migrate from their site of origin to their final destination for proper positioning. The neuroblasts are guided by a signaling pathway in which reelin ($\text{\textcopyright}$), a protein, plays an important role. For reelin to work it must interact with two other proteins: VLDLR (very low density lipoprotein receptor) and ApoER2 (apoprotein E receptor-2) ([left](right)). In this disease, the VLDLR is mutated ([X](X)) so that the reelin cannot interact to function properly ([right](right)). Consequently insufficient numbers of neuroblasts migrate for positioning in the cerebellum. Consequently the cerebellum is smaller in size and incompletely developed ([cerebellar hypoplasia](hypoplasia)).