Tight junction

Tight junctions (TJs) are an important component of cellular connectivity. Claudin family proteins, as a constituent of TJs, determine their barrier properties, cell polarity and paracellular permeability. Claudin-12 is an atypical member of the claudin family, as it belongs to the group of non-classical claudins that lack a PDZ-binding domain. It has been shown that claudin-12 is involved in paracellular Ca2+ transients and it is present in normal and hyperplastic tissues in addition to neoplastic tissues. Dysregulation of claudin-12 expression has been reported in various cancers, suggesting that this protein may play an important role in cancer cell migration, invasion, and metastasis. Some studies have shown that claudin-12 gene functions as a tumor suppressor, but others have reported that overexpression of claudin-12 significantly increases the metastatic properties of various tumor cells. Investigating this dual role of claudin-12 is of utmost importance and should therefore be studied in detail [1)].

1)
Apostolova D, Apostolov G, Moten D, Batsalova T, Dzhambazov B. Claudin-12: guardian of the tissue barrier or friend of tumor cells. Tissue Barriers. 2024 Aug 1:2387408. doi: 10.1080/21688370.2024.2387408. Epub ahead of print. PMID: 39087432.