

Expression and distribution of nucleoside transporter proteins in the human syncytiotrophoblast

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The plasma membrane distribution and related biological activity of nucleoside transporter proteins (NTs) were investigated in human syncytiotrophoblast from term placenta using a variety of approaches, including nucleoside uptake measurements into vesicles from selected plasma membrane domains, NT immunohistochemistry, and subcellular localization (basal, heavy, and light apical membranes as well as raft-enriched membranes from the apical domain). In contrast with other epithelia, in this epithelium, we have identified the high-affinity pyrimidine-preferring human concentrative nucleoside transporter (hCNT) 1 as the only hCNT-type protein expressed at both the basal and apical membranes. hCNT1 localization in lipid rafts is also dependent on its subcellular localization in the apical plasma membrane, suggesting a complex cellular and regional expression. Overall, this result favors the view that the placenta is a pyrimidine-preferring nucleoside sink from both maternal and fetal sides