

# Quantitation and immunolocalization of glucose transporters in the human placenta

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The subcellular distributions of the mammalian passive glucose transporter isoforms GLUT1, GLUT3 and GLUT4, in the human placenta, were investigated using isoform-specific anti-peptide antibodies. On western blots of both basal and brushborder plasma membranes isolated from the syncytiotrophoblast, antibodies specific for GLUT1 labelled a broad band (apparent Mr 55000) that co-migrated with the human erythrocyte GLUT1 glucose transporter. In contrast, no labelling was detectable when blots were probed with antibodies specific for the GLUT3 or GLUT4 isoforms. Densitometric analysis of blots showed that GLUT1 accounts for approximately 90 and 65 per cent of the d-glucose-sensitive cytochalasin B binding sites present in brush-border and basal membranes, respectively. Confocal immunofluorescence microscopy of fixed placental tissue showed that GLUT1 is abundant at both maternal- and fetal facing surfaces of the syncytiotrophoblast whereas it was undetectable at the fetal capillary endo