

**P021** Members of the proton-assisted amino acid transporter family regulate growth in human cancer cell lines  
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We have recently highlighted members of the proton-assisted (PAT/SLC36) amino acid transporter family as potent regulators of PI3K/Akt/TOR-mediated growth using an *in vivo* genetic screen in flies. Furthermore, we have shown that the growth-promoting properties of the PATs are strongly enhanced when PI3K/Akt signalling is increased. Since human PATs can substitute for *Drosophila* PATs in fly mutants, this role is likely to be evolutionarily conserved. If this is the case, the PATs may play an increasingly important role in promoting growth in tumour cells that upregulate PI3K/Akt.

We have now analysed the growth-promoting effects of the PAT transporters in human cancer cell lines using siRNA approaches. We find that two of the four human PATs, PAT1 and PAT4, are widely expressed at moderate to high levels. Knockdown of either PAT1 or PAT4 strongly inhibits growth of multiple cancer cell lines derived from tissues including cervix, lung and breast, but does not appear to affect cell survival. These data suggest that blocking PAT function could provide a novel route to suppress the excess growth induced by the PI3K/Akt pathway that is commonly observed in human tumours.