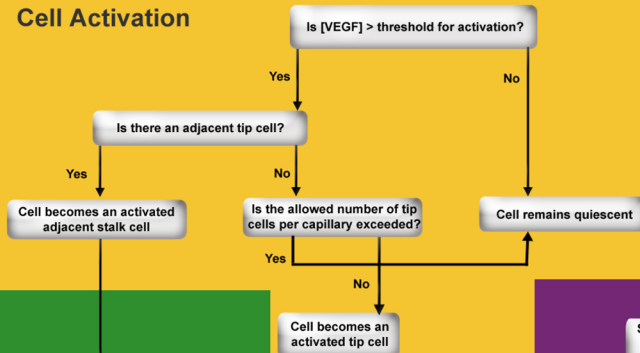
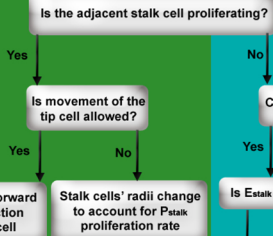


Cell Activation



Stalk Cell Proliferation



Stalk Cell Elongation

Tip and stalk cell migrate $(\ln - \ln-1) * M_{tip}$

Tip and stalk cell migrate E_{stalk}

Is there a local VEGF gradient?

Tip and stalk cell migrate in the direction of highest local VEGF gradient facing the tip cell

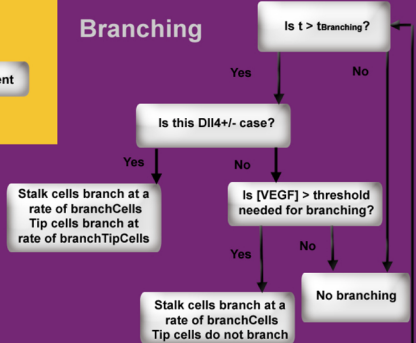
Is there a directional bias for cellular persistence?

Cells migrate with weighted random walk, tip cell leading

Cells migrate with random walk, tip cell leading

Directed Migration

Branching



Tip Cell Proliferation

Can the tip cell proliferate?

Yes

No

Is this Dll4+/- case?

Yes

No

Tip cell proliferates at rate $P_{tip} = P_{stalk}$ at 8% probability

Tip cell proliferates at rate $P_{tip} = P_{stalk}$ at 3% probability

No movement