Studying growth in the liver fluke *Fasciola hepatica*

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Fasciola hepatica (liver fluke) infections of cattle, goats and sheep heavily undermine livestock production systems globally. The increasing incidence of human infection has led to fasciolosis being characterized as a neglected tropical disease of growing significance. This work set out to better understand normal liver fluke growth and maintenance, in order to identify new ways to disrupt or dysregulate it as an approach to liver fluke control. We have developed methods that facilitate the long-term maintenance and growth of liver fluke in vitro. Key players in the ability of fluke to grow appear to be proliferative cells that are neoblast-like. These cells play a major role in regeneration in planaria, however their roles in the parasitic flatworms are less clear. Planarians have thus far been the primary model for neoblast research and work to date has characterized neoblasts as a heterogeneous subpopulation of cells with variable levels of cell potency. Here we localise and map proliferative cells in growing juvenile worms. Further, a functional genomics approach was used to study possible regulatory proteins and pathways important to neoblast function. If they do in fact act like stem cells then we could hypothesise that neoblasts play a major role in parasite longevity and the disruption of their activities would undermine normal parasite growth and development and would make these cells an attractive control target.