IBioIC-funded postdoc position starting August 1st 2018

This is a unique opportunity to conduct an exciting biomedical research project jointly between the University of Edinburgh and Ingenza, a biotech company based just outside the city of Edinburgh.

Many therapeutic proteins must be glycosylated to be clinically efficacious. An important example is complement factor H, a 155-kDa glycoprotein with 40 disulfide bonds that could be used to treat age-related macular degeneration (AMD). The dry form of advanced AMD is a leading cause of incurable sight loss amongst elderly populations.

It is hard to produce complement factor H and other large disulphide-rich glycoproteins in the quantities required for the pharmaceutical market place. For this purpose, yeast cells offer an attractive alternative to the traditional choice of mammalian cell culture. For example, *Pichia pastoris* grows on simple media to high densities and secretes large amounts of glycosylated recombinant proteins. However, there is a major challenge to be overcome. The pathways in *P. pastoris* responsible for glycosylation must be re-engineered so that recombinant proteins intended for human use are decorated with human-type (rather than yeast-type) glycans.

Advances in understanding of protein glycosylation and in glycan characterisation, as well as in DNA synthesis and assembly technologies, make possible a synthetic biology-based approach to re-purposing *P. pastoris* as a platform for producing humanised glycoproteins. That is the goal of this project, which is funded by the iBioIC “Accelerating Impact” programme (for 12 months in the first instance).

Full details available from Paul Barlow (Paul.Barlow@ed.ac.uk)