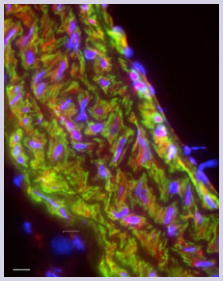

Hope after myocardial infarction: Wnt signalling in cardiac repair

Myocardial infarction (MI), involving an interruption of blood flow to a part of the heart, causes death of cardiac cells owing to ischemia. The development of therapies that promote cardiac regeneration will speed recovery and reduce the high incidence of heart failure observed after MI. Whether the Wnt signalling pathway is a valid therapeutic target has been controversial. Aisagbonhi et al. now demonstrate that canonical Wnt signalling regulates an endothelial-to-mesenchymal transition during the granulation tissue formation phase of cardiac repair after MI. Their findings suggest that the Wnt pathway could be manipulated in a temporal or cell-specific manner to improve cardiac repair after MI. *S.A.* **Page 469**

Drosophila screen to identify candidates for combination cancer therapy

Given the promise of combination cancer therapy, many drug discovery programmes are aiming to identify compounds with additive or synergistic effects. Using *Drosophila*, Edwards et al. report a system to screen for agents that enhance the anti-cancer effects of radiation. Following initial screens revealing microtubule poisons as candidates, they analyse one candidate, maytansinol, in *Drosophila* cells and larvae, and in human cancer cells. Their results show that this agent's actions are p53-dependent and that they differ in vitro versus in vivo, highlighting the importance of studying drug effects in a whole organism. *S.A.* **Page 496**

Activated FGFR3 contributes to cancer in a context-dependent manner

Urothelial cell carcinoma (UCC) of the bladder is the fifth most common cancer worldwide and is associated with activating mutations in *FGFR3*. Ahmad et al. now report a mouse model that conditionally expresses an activating mutation in *Fgfr3* in the urothelium. This mutation alone is not sufficient to initiate UCC, but it can cooperate with other oncogenes to cause tumours in other tissues. The data also indicate that appropriate expression of feedback inhibitors of FGF signalling, such as Sprouty2, might act like a tumour suppressor to prevent UCC in healthy individuals. *S.A.* **Page 548**

Fishing for mycobacterial virulence factors

A hallmark of tuberculosis (TB) is the presence of tubercles, which are granulomas composed of activated alveolar macrophages, neutrophils and lymphocytes. Tubercles are repositories for the causative agent of TB, *Mycobacterium tuberculosis*, and are partly generated by virulence factors encoded by the bacterium. Using a close relative of *M. tuberculosis*, *Mycobacterium marinum*, Stoop et al. develop a medium-throughput screen for virulence factors using *M. marinum*'s natural host, the zebrafish, and identify three novel virulence factors that are involved in granuloma formation. This system provides new information about mycobacterial virulence and might help in the development of new TB vaccines. *K.W.* **Page 526**

Genetic model of posterior subcapsular cataract formation

Posterior subcapsular cataracts (PSCs) occur frequently in diabetics and during treatment with ionising radiation or steroids, and are thought to result from disruption of the normal differentiation of lens epithelial cells into fibre cells. Wiley et al. show that loss of p53 in mouse lenses results in the formation of PSCs due to a failure to delete abnormally proliferating lens fibre cells. Enhancing p53 activity in the lens during therapies that are known to increase the risk of PSCs might therefore be a useful preventative strategy. *K.W.* **Page 484**

Host-pathogen interactions in a fly model of *C. albicans* infection

Candida albicans is present as a benign commensal infection in more than 50% of the population but, in conditions of immune suppression, it can become a dangerous systemic infection with an estimated mortality rate of ~30%. Despite its ubiquity, little is known about how host and pathogen interact during *Candida* infection. In two linked papers, the Ligoxygakis lab shows that the fruit fly *Drosophila melanogaster* is an appropriate model system both to rapidly assess virulence of *Candida* strains and to study systemic host responses. The tractability of *Drosophila* compared with mice makes it an attractive model to screen for host and pathogen factors involved in *Candida* infection, and for the development and testing of antifungal drugs. *K.W.* **Pages 504 and 515**

Bright ideas: factors influencing expression of fluorescent proteins

Fluorescent proteins (FPs) are commonly used to label specific cell populations and molecules in model organisms, but quantifying the intrinsic and extrinsic variables that influence experimental outcomes has been difficult. Chen et al. generate eight different FP-expressing alleles and express them in mouse embryonic stem cells or in mice to assess the contribution of different variables on FP expression levels and brightness. Their findings reveal that outcomes are markedly influenced by genetic factors present in the allele as well as the type of FP. Furthermore, in vivo analysis of Cherry-expressing mice shows up to 30-fold variation in expression between different tissue types. *S.A.* **Page 537**