

P016 Characterising and mapping gene mutations causing cell cycle defects in *Drosophila melanogaster*
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Although abnormal cell cycles have been linked to a number of pathological conditions including cancers, many components of cell cycle mechanisms still remain to be discovered. In this study, *Drosophila melanogaster* carrying P-element insertions were screened for insertion mutations causing cell division defects. Mitotic index and phenotype were examined in the neuroblasts of homozygous 3rd instar larvae. Two fly lines, P58 and P61, were found to have multi-polar centrosomes, multi-astral spindles, and very high levels of polyploid mitotic neuroblast chromosomes. Complementation genetics suggested that different genetic factors were causing the similar phenotypes in P58 and P61, despite the fact that both lines contained a single P-element insertion in the same region (E75B). P-element mobilisation proved that the P-element insertion did not cause the cell division defects, suggesting that a separate unknown mutation is responsible for the mitotic defect in each line. We suggest that the separate mutations in P58 and P61 affect genes which play a role in cell cycle checkpoints or cytokinesis. Currently we are mapping the mutations by deficiency and recombination mapping.