In the news

SYSTEMS BIOLOGY WITH A VIEW

Imagine a cutting-edge systems biology unit in a state-of-the-art research park with a community of top scientists, all within a stone's throw of the sand and waves of the sunny Mediterranean coast. Well, there is no longer a need to daydream — in September 2006, the European Molecular Biology Laboratory (EMBL) and the Centre for Genomic Regulation (CRG) launched the EMBL/CRG Research Unit for Systems Biology in Barcelona, Spain.

"Systems biology is the future of biomedicine," says Luis Serrano, the coordinator of the unit, "and in this new partnership we will combine theoretical and experimental approaches to better understand some of the key aspects of human health" (EMBL press release, 7 September 2006). In support, the Spanish ministry for Education and Science has pledged €12.7 million over the next nine years to the new unit.

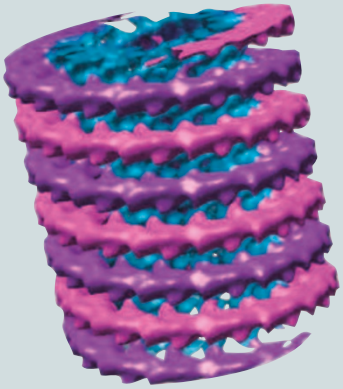
Miguel Beato, Director of the CRG, hopes that through "adopting EMBL's system of fostering young talents and regular staff turnover we will ensure a continuous flow of ideas" (EMBL press release, 7 September 2006). Serrano intends to develop "a spirit of rotation and the removal of the 'position for life' philosophy" (*Science*, 2 June 2006). To this end, researchers at the unit will receive 5-year contracts that can be extended for 4 years.

The unit will be in the beachfront Barcelona Biomedical Research Park, which can house up to 80 research groups and includes other units, such as Barcelona's Municipal Institute of Medical Research, a Centre for Regenerative Medicine, an Institute of Advanced Technology and a 400-bed hospital. Primary researchers are currently being recruited, so if this sounds like the ideal place for you then prepare your *curriculum vitae*, and don't forget to pack your towel.

Asher Mullard

MOLECULAR MOTORS

Run rings around



Three-dimensional reconstruction of kinesin-13 spirals. Image courtesy of H. Sosa, Albert Einstein College of Medicine, Bronx, New York, USA.

> "They found that kinesin-13s form rings and spirals around microtubules…"

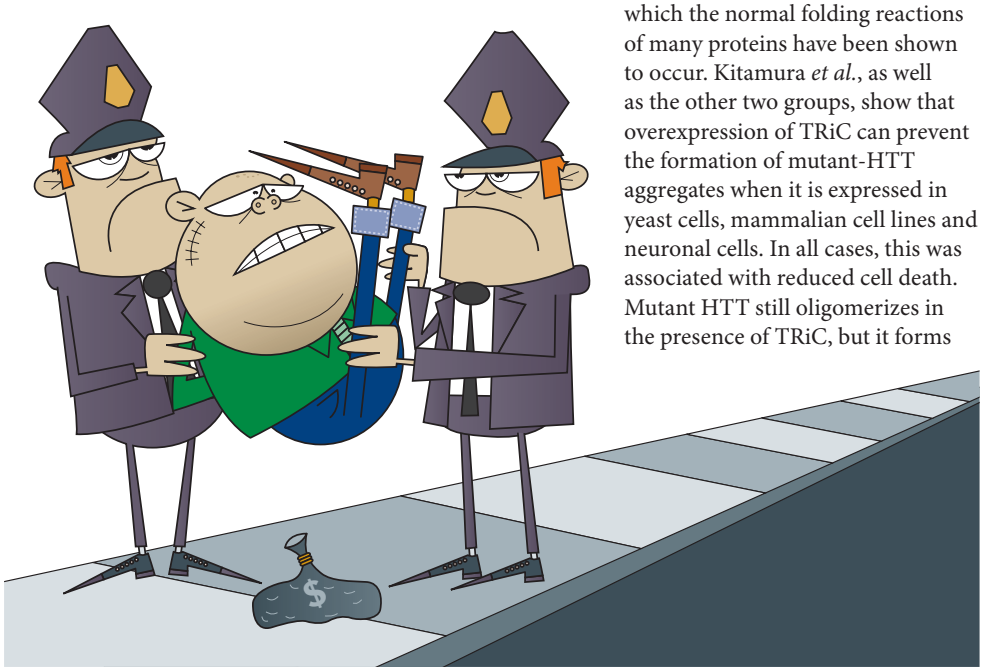
Most kinesins use energy from ATP hydrolysis to move and generate force along microtubules; however, exceptions exist. Rather than moving along microtubules, kinesin-13 proteins (kinesin-13s) actively depolymerize microtubules, which is important for chromosome segregation during mitosis. What is the structural basis of this unusual behaviour by kinesin-13s? And what is the mechanism that is used to depolymerize microtubules? Tan *et al.* now provide some answers.

The authors used electron microscopy to investigate the structure of the complex that is formed between microtubules and *Drosophila melanogaster* or hamster kinesin-13s. They found that kinesin-13s form rings and spirals around microtubules — rings only formed in the presence of both microtubules and kinesin-13s, and

MECHANISMS OF DISEASE

Folding away the bad guys

The correct folding of newly synthesized proteins is regulated by a pathway that involves heat-shock proteins and chaperonins, such as TRiC (also known as CCT). Three groups have identified a new substrate for TRiC — Huntingtin (HTT) — and show that TRiC can direct HTT away from forming the toxic aggregates that characterize the devastating pathology of Huntington's disease.



TRiC is a cytoplasmic protein that is made up of two rings of eight homologous subunits, stacked back-to-back, that form a cage in which the normal folding reactions of many proteins have been shown to occur. Kitamura *et al.*, as well as the other two groups, show that overexpression of TRiC can prevent the formation of mutant-HTT aggregates when it is expressed in yeast cells, mammalian cell lines and neuronal cells. In all cases, this was associated with reduced cell death. Mutant HTT still oligomerizes in the presence of TRiC, but it forms