The normal physiological role of CRT remains elusive, but the authors suggest that it could be a transporter of peptides or amino acids. This seems possible, given that a vast quantity of peptides produced as a consequence of prodigious haemoglobin digestion is exported from the food vacuole.

4 Martin, R.E. and Kirk, K. (2004) The malaria parasite's chloroquine resistance transporter is a member of the drug/metabolite transporter superfamily. *Mol. Biol. Evol.* (2004) DOI: 10.1093/molbev/msh205 (E-publication ahead of print; http://mbe.oupjournals.org)

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### Linezolid resistance in *Staphylococcus aureus*

Linezolid, a member of the recently introduced oxazolidinone class of antibacterial agents, is active against multi-resistant Gram-positive pathogens. These antibiotics inhibit protein synthesis by binding to the 50S subunit of the prokaryotic ribosome and preventing assembly of the initiation complex. Although a G2576T mutation in the 23S rRNA gene encoded by the *rrn* operon can confer resistance, linezolid resistance in *Staphylococcus aureus* is rare, presumably because there are 5-6 copies of *rrn* in the genome and at least two copies must carry the mutation in order for the strain to be phenotypically resistant.

Meka *et al.* now report a new mutation and additional genomic changes in linezolid-resistant isolates of *S. aureus* obtained from a patient receiving long-term linezolid therapy [5]. One isolate contained a T2500A mutation in three out of six copies of *rrn* while two isolates carried two copies of the same mutation but had also deleted the sixth copy of *rrn*, thereby increasing the proportion of mutant alleles. Seven months after linezolid therapy had been discontinued, a linezolid-sensitive *S. aureus* was isolated that did not contain any T2500A mutations.

This paper illustrates the adaptability of the *S. aureus* genome and the potential complexity of detecting resistance when there are multiple copies of the target gene. The fact that this resistance mutation appeared to exact a toll on bacterial fitness is an encouraging sign that might be exploited in the future.

5 Meka V.G. *et al.* (2004) Linezolid resistance in sequential *Staphylococcus aureus* isolates associated with a T2500A mutation in the 23S rRNA gene and loss of a single copy of rRNA. *J. Infect. Dis.*190, 311–317

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# Business

## Collaborations

### Large-scale genetic study of diabetes

ParAllele BioScience (http://www.parallelebio.com/), Affymetrix (http://www.affymetrix.com) and Cambridge University (http://www.cam.ac.uk) have announced a collaboration to undertake a large-scale gene-association study to locate new type-1 diabetes genes for use in the development of improved therapies and diagnostics.

Led by John Todd of the University's Juvenile Diabetes Research Foundation/ Wellcome Trust Diabetes and Inflammation Laboratory (DIL; http://www-gene.cimr.cam.ac.uk/todd), the research will use a ParAllele-developed standard panel of 10,000 SNPs to compare genotypes between more than 2000 people. In what is believed to be among the largest studies of its kind to be undertaken, the researchers plan to analyze more than 20,000 DNA samples already collected from diabetes patients and their relatives.

'This research project is the most exciting and important genetics experiment I've ever been involved in,' said Todd. 'We've been collecting samples for quite some time and have been waiting for a technology that would give us the genetic power we needed to commence informative studies. Using this new solution from Affymetrix and ParAllele for a genome-wide gene association study provides us with the best opportunity we've ever had to discover new disease-associated genes and polymorphisms.'

### Vernalis and Novartis collaborate

Vernalis (http://www.vernalis.com/) and Novartis (http://www.novartis.com/) have announced a joint R&D programme on Hsp90, a target implicated in several different cancers. Novartis will provide research funding to Vernalis over an initial three-year period.

Simon Sturge, Chief Executive Officer of Vernalis, said: 'I am delighted to be announcing a third major deal for Vernalis in only six weeks. Novartis is a world leader in oncology and an optimal partner to help maximize the opportunity for developing Hsp90 inhibitors as potential cancer treatments. This collaboration further validates Vernalis' research capability and provides additional funding.'

### PerkinElmer and Vivascience/Sartorius

PerkinElmer (http://www.perkinelmer.com/) and Vivascience (http://www.vivascience.com), a leading supplier of products and technology solutions for protein purification and analysis and a member of the Sartorius Group, have entered into a collaborative agreement in biomarker screening and discovery.

Vivascience's patented membrane adsorber (MA) chromatography technology will be combined with PerkinElmer's proprietary elution chemistries to create fractionation kits for proteomics-based biomarker analysis. 'By working with a market leader like Vivascience, we are able to accelerate bringing breakthrough innovations to the emerging markets of proteomics-based biomarker screening and discovery', said Peter Coggins, President of PerkinElmer Life and Analytical Sciences.

Kevin Rosenblatt, a leading researcher in biomarker research and clinical proteomics at the University of Texas Southwestern (http://www.utsouthwestern.edu), recently commented: 'The combination of ultra-high mass accuracy and superb resolution over a broad mass range in the prOTOF, coupled with an automated biomarker enrichment platform, make the PerkinElmer approach an ideal biomarker discovery and screening platform.'

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