

Cover: Kinetic stabilisation of tetrameric transthyretin by binding of the drug Tafamidis (Vyndaqel™) in the T4-binding sites, inhibiting amyloidogenesis. PDB accession code: 3TCT. Image courtesy of Drs Stephen Connelly, Evan Powers, Ian Wilson and Jeff Kelly, The Scripps Research Institute, CA, USA.

IN THIS ISSUE

- 1 Summaries of selected research papers

EDITORIAL

- 3 The threads that tie protein-folding diseases
Brodsky, J. L.

A MODEL FOR LIFE

- 5 Creating a path from the heat shock response to therapeutics of protein-folding diseases: an interview with Rick Morimoto
Dhillon, P.

AT A GLANCE

- 9 Mechanisms of protein-folding diseases at a glance
Valastyan, J. S. and Lindquist, S.

REVIEWS

- 15 Aneuploidy: implications for protein homeostasis and disease
Oromendia, A. B. and Amon, A.

- 21 Selective vulnerability to neurodegenerative disease: the curious case of Prion Protein
Jackson, W. S.

- 31 *Caenorhabditis elegans* as a model system for studying non-cell-autonomous mechanisms in protein-misfolding diseases
Nussbaum-Krammer, C. I. and Morimoto, R. I.

RESEARCH ARTICLES

- 41 Molecular mechanism of sphingosine-1-phosphate action in Duchenne muscular dystrophy
Nguyen-Tran, D.-H., Hait, N. C., Sperber, H., Qi, J., Fischer, K., Ieronimakis, N., Pantoja, M., Hays, A., Allegood, J., Reyes, M., Spiegel, S. and Ruohola-Baker, H.

- 55 The unfolded protein response has a protective role in yeast models of classic galactosemia
De-Souza, E. A., Pimentel, F. S. A., Machado, C. M., Martins, L. S., da-Silva, W. S., Montero-Lomelí, M. and Masuda, C. A.

- 63 Oncogenic mutations in adenomatous polyposis coli (*Apc*) activate mechanistic target of rapamycin complex 1 (mTORC1) in mice and zebrafish
Valvezan, A. J., Huang, J., Lengner, C. J., Pack, M. and Klein, P. S.

- 73 A new zebrafish model produced by TILLING of SOD1-related amyotrophic lateral sclerosis replicates key features of the disease and represents a tool for *in vivo* therapeutic screening
Da Costa, M. M. J., Allen, C. E., Higginbottom, A., Ramesh, T., Shaw, P. J. and McDermott, C. J.

- 83 TGF- β 3 modulates the inflammatory environment and reduces scar formation following vocal fold mucosal injury in rats

Chang, Z., Kishimoto, Y., Hasan, A. and Welham, N. V.

- 93 Dysregulated phosphatidylinositol signaling promotes endoplasmic-reticulum-stress-mediated intestinal mucosal injury and inflammation in zebrafish

Thakur, P. C., Davison, J. M., Stuckenholz, C., Lu, L. and Bahary, N.

- 107 Valproic acid silencing of *asc1/b/Ascl1* results in the failure of serotonergic differentiation in a zebrafish model of fetal valproate syndrome

Jacob, J., Ribes, V., Moore, S., Constable, S. C., Sasai, N., Gerety, S. S., Martin, D. J., Sergeant, C. P., Wilkinson, D. G. and Briscoe, J.

- 119 A missense mutation accelerating the gating of the lysosomal Cl⁻/H⁺-exchanger CIC-7/Ostm1 causes osteopetrosis with gingival hamartomas in cattle
Sartelet, A., Stauber, T., Coppiepers, W., Ludwig, C. F., Fasquelle, C., Druet, T., Zhang, Z., Ahariz, N., Cambisano, N., Jentsch, T. J. and Charlier, C.

- 129 Oleoylethanolamide enhances β -adrenergic-mediated thermogenesis and white-to-brown adipocyte phenotype in epididymal white adipose tissue in rat
Suárez, J., Rivera, P., Arrabal, S., Crespillo, A., Serrano, A., Baixeras, E., Pavón, F. J., Cifuentes, M., Nogueiras, R., Ballesteros, J., Dieguez, C. and Rodríguez de Fonseca, F.

- 143 Transcriptional changes and developmental abnormalities in a zebrafish model of myotonic dystrophy type 1
Todd, P. K., Ackall, F. Y., Hur, J., Sharma, K., Paulson, H. L. and Dowling, J. J.

RESEARCH REPORTS

- 157 The myopathy-causing mutation DNM2-S619L leads to defective tubulation *in vitro* and in developing zebrafish
Gibbs, E. M., Davidson, A. E., Telfer, W. R., Feldman, E. L. and Dowling, J. J.

- 163 Inhibitors of neutrophil recruitment identified using transgenic zebrafish to screen a natural product library

Wang, X., Robertson, A. L., Li, J., Chai, R. J., Haishan, W., Sadiku, P., Ogryzko, N. V., Everett, M., Yoganathan, K., Luo, H. R., Renshaw, S. A. and Ingham, P. W.