

TheScientist

\$4.99 | VOL. 23 NO. 10 | OCTOBER 2009 | WWW.THE-SCIENTIST.COM

MAGAZINE OF THE LIFE SCIENCES

Programa de
Biotecnología
002

SECRETS OF SEX
(DETERMINATION)

RESISTANCE-PROOF
MALARIA MEDS

BIOTECH IN THE
MIDDLE EAST

PLUS:
BECOME A
CONSULTANT



HOW DOES
CAGE ENRICHMENT
AFFECT RODENTS?

LAB TOYS

CONTENTS

October 2009



FEATURES

30

Lab Toys

COVER STORY » Running wheels, mouse huts, nesting material, gnawing objects—most facilities nowadays are embracing enrichment practices for rodents, but, as ALLA KATSNELSON reports, the consensus for what constitutes good practice—or even what constitutes enrichment at all—has remained elusive. Plus, could this added variability in enrichment practices between labs be affecting scientific data?

36

Choosing Sex

What accounts for the remarkable plasticity in sex determination seen in many animals? In some species of fish, all it takes is a glance to cause an adult female to change her sex. BLANCHE CAPEL at Duke University Medical Center proposes a new model for mammalian sex determination, based on an antagonistic signaling system.

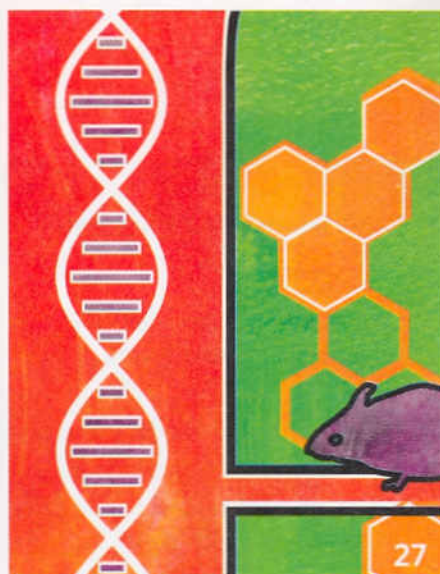
44

Evolution, Resisted

Malaria kills around a million people each year, and mosquitoes have developed resistance to nearly every chemical thrown at them. ELIE DOLGIN spoke with researchers who are trying to circumvent this problem—indefinitely. But can such a tricky technique work?

ON THE COVER

© Chris Collins / CORBIS



DEPARTMENTS

13 Editorial

Memo to Moneybags

For \$1 billion you can pick up a mid-ranked English soccer club... or build a world class biotech cluster.

BY RICHARD GALLAGHER

17 Notebooks

Tiny tubers; Leapin' Laureates; Baffling base; Startup on the cheap; Olympic cleanup

27 Opinion

Tell Me a Story of Science

Want to generate interest in your research? Here's how.

BY RANDY OLSON

29 Column

Collaborations: Challenging, but Key

Like any relationship, collaborations take energy, but nothing is better for your research.

BY STEVEN WILEY

52 Profile

Genome Guru

With some creative coding, Tim Hubbard has helped scientists see into the future of biomedicine.

BY KAREN HOPKIN

57 The Literature

Hot Papers: Eavesdropping on the brain's conversations; sequencing the second mosquito; updating evolutionary software; linking memory to chromatin remodeling. Scientist to Watch: Audrey Dussutour.

63 Lab Tools

Behavior in Action

Tools and techniques for tracking mammalian behavior

BY KELLY RAE CHI

69 Bio Business

Gulf State Gamble

Oil-rich countries like the UAE and Qatar are pouring money into biotech initiatives, but will they transform the desert nations into true research centers?

BY TIA GHOSE

73 Careers

Considering Consulting?

Find out what you need to do to start (and succeed at) your own consultancy.

BY TOBY FREEDMAN

84 Foundations

Nuclear Degradation in the Lens, 1897-1899

BY RALF DAHM

IN EVERY ISSUE

11 Contributors

14 Mail

The Future of Film; Why Timing Matters; Healthcare: Scientists Speak; Suicidal Tendencies; Bayesian Unease; Sabbatical Success

66 The Guide

78 Recruitment