Perspectives

Isolating the Effects of Social Interactions on Cancer Biology. Brian C. Trainor, Colleen Sweeney, and Robert Cardiff ................................................................. 843
Perspective on Williams et al., p. 850

Favoritism in DNA Methylation. Megan P. Hitchins and Robyn L. Ward .................................................. 847
Perspective on Candiloro and Dobrovic, p. 862

Research Articles

A Model of Gene-Environment Interaction Reveals Altered Mammary Gland Gene Expression and Increased Tumor Growth following Social Isolation. J. Bradley Williams, Diana Pang, Bertha Delgado, Masha Kocherginsky, Maria Tretiakova, Thomas Krausz, Deng Pan, Jane He, Martha K. McClintock, and Suzanne D. Conzen ................................................................. 850

Detection of MGMT Promoter Methylation in Normal Individuals Is Strongly Associated with the T Allele of the rs16906252 MGMT Promoter Single Nucleotide Polymorphism. Ida L.M. Candiloro and Alexander Dobrovic ................................................................. 862


Eleostearic Acid Inhibits Breast Cancer Proliferation by Means of an Oxidation-Dependent Mechanism. Michael E. Grossmann, Nancy K. Mizuno, Michelle L. Dammen, Todd Schuster, Amitabha Ray, and Margot P. Cleary ................................................................. 879


Obituary

About the Cover

Long-term psychosocial stress is suspected of having adverse effects on breast cancer, but the epidemiologic reports are inconsistent. Williams et al. examined the relationship between the chronic stress of social isolation and mammary-gland carcinogenesis in the FVB-Tg(C311)/SV40 T-antigen mouse model of human breast cancer. After weaning, young female mice were housed for 9.5 weeks in either stressful social isolation or less-stressful grouped housing. The cover image is a stylized depiction of actual testing for the effect of social isolation on mouse behavior in an “open field” testing apparatus consisting of a relatively large area with an object of interest (represented by the red ball) placed several inches from a “home base” container in the lower right corner. Individual mice were placed with some of their own bedding material in the home base and then videotaped for exploratory behavior for five minutes. The movement of a representative isolated mouse (pink track lines) reflects limited exploration, whereas the movement of a representative group-housed mouse (blue track lines) illustrates highly exploratory behavior. Compared with group-housed mice, isolated mice had stress-induced gene expression changes in premalignant mammary-gland tissue (the first such stress-related finding) and developed a significantly larger mammary tumor burden. The actual testing was videotaped in red light because the natural awake cycle of mice is nocturnal, and the tape was analyzed via Ethovision software that allows automated tracking and analysis of an animal’s movement. See articles by Williams et al. (beginning on page 850) and Trainor, Sweeney, and Cardiff (beginning on page 843) for more information.