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COVER
Enhanced-color confocal microscopy image of a cross section of an Arabidopsis stem (diameter of full section: 2 millimeters; excluding the protruding epidermal hair cell). The cell walls in blue contain lignin, which provides strength to the walls. The magenta color in the cortex cells reflects the presence of chlorophyll. Caffeoyl shikimate esterase is an enzyme central to the biosynthesis of lignin, a major factor limiting biomass processing for biofuels. See page 1103.

Image: Lisa Sundin, Matyas Fendrych, and Daniel Van Damme/VIB, Belgium

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1079 Gut Microbiota from Twins Discordant for Obesity Modulate Metabolism in Mice
V. K. Ridaura et al.
Mice carrying gut bacteria from lean humans protect their cage mates from the effects of gut bacteria from fat humans.
Research Article Summary; for full text: http://dx.doi.org/10.1126/science.1241214
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P. C. Frisch et al.
Analysis of data collected by 10 different spacecraft indicates that our solar system’s local environment may be changing.

1082 Radio Jets Clearing the Way through a Galaxy: Watching Feedback in Action
R. Morganti et al.
High-resolution radio images of a galaxy reveal how a jet of relativistic particles is driving cold gas away from the center.
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1085 Enhanced Seasonal Exchange of CO₂ by Northern Ecosystems Since 1960
H. D. Graven et al.
The amplitude of the seasonal cycle of carbon dioxide in high northern latitudes has increased by 50% since 1960.
>> Perspective p. 1075

1089 Expanding the Fluorine Chemistry of Living Systems Using Engineered Polyketide Synthase Pathways
M. C. Walker et al.
Biochemical pathways can be engineered to incorporate fluoroacetate into tri- and tetraketides in place of acetate.
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1094 Observation of Partial Wave Resonances in Low-Energy O₂⁻–H⁻ Inelastic Collisions
S. Chefdeville et al.
Purely quantum mechanical effects are manifested in an experiment probing crossed molecular beams.
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1096 Direct Determination of Absolute Molecular Stereochemistry in Gas Phase by Coulomb Explosion Imaging
M. Pitzer et al.
A simple molecule’s three-dimensional structure can be ascertained from the fragment trajectories when it is blown apart.

1100 Achieving the Convention on Biological Diversity’s Goals for Plant Conservation
L. N. Joppa et al.
Protecting 17% of the land surface and 60% of plant species is possible, but not at present.

1103 Caffeoyl Shikimate Esterase (CSE) is an Enzyme in the Lignin Biosynthetic Pathway in Arabidopsis
R. Vanholme et al.
A key enzyme involved in lignin biosynthesis is identified and characterized in the model plant Arabidopsis.

1106 Epigenetic Regulation of Mouse Sex Determination by the Histone Demethylase Jmjd1a
S. Kuroki et al.
Histone modification controls mammalian sex determination.

1110 Single-Cell DNA-Methylation Analysis Reveals Epigenetic Chimerism in Preimplantation Embryos
C. Lorthongpanich et al.
Lethal epigenetic chimerism can be rescued by transfer of nucleus.

1113 Neuroendocrine Control of Drosophila Larval Light Preference
N. Yamakawa et al.
The hormone that triggers the transition from larva to adult also induces the larvae to find a dark spot to do this safely.

1116 Conserved Regulation of Cardiac Calcium Uptake by Peptides Encoded in Small Open Reading Frames
E. G. Magny et al.
Small peptides regulate calcium transport and regular heart contraction in both flies and humans.

1120 A Causative Link Between Inner Ear Defects and Long-Term Striatal Dysfunction
M. W. Antoine et al.
In mutant mice, severe ear dysfunction is associated with motor hyperactivity.

1123 Topographic Representation of Numerosity in the Human Parietal Cortex
B. M. Harvey et al.
There is a map of numerical magnitude in the human brain.
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