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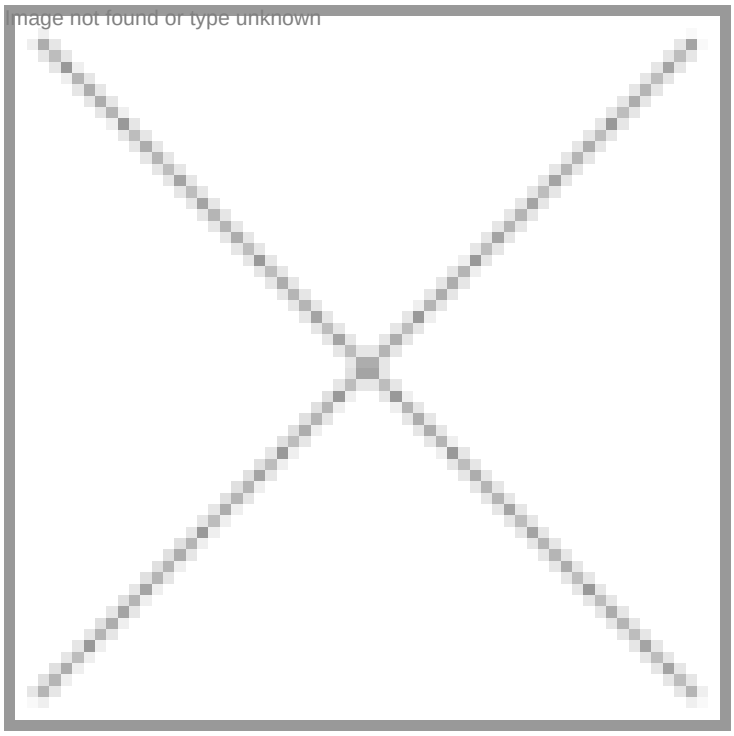
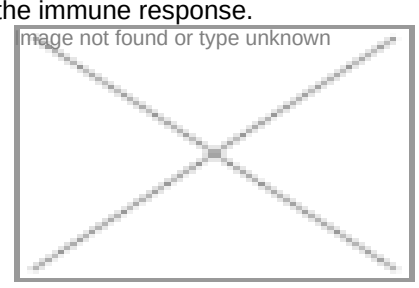


Hepatitis A infection fights asthma

A dose of hepatitis A infection may be good for many people as it may trigger the body's immune response to fight other allergies, like asthma, according to a recent genetic study.

Published in the science journal Nature, the study on Caucasians who were exposed to hepatitis A virus indicated that the infection reduces the risk of contracting asthma and similar allergies by four-fold. Apparently it is helped by the presence of a long version of the gene TIM-1 which is found in two-thirds of Caucasians, which triggers the immune response.



"The long version of the gene may help the virus enter the cell more efficiently," Nature quoted the lead investigator of the study, Dale Umetsu of Stanford University, California. The gene may alter the immune system's response to allergens like pollen and dust.

Allergy experts said this indicated that allergies may not have a single cause and depend a lot on the interaction between genetics and the environment.

Hepatitis A virus thrives in unhygienic or dirty environment and affects about 1.5 million people worldwide every year. The disease usually subsides on its own, mainly due to the strength of the immune system. Antibodies are usually built up against the disease and most patients get cured without any specific treatment.

Researchers hope to use this information to develop drugs that may induce better immune response in people to fight common allergies like asthma. It may be possible to develop vaccines, which may provide immunity against allergies.

Statins, exercise ineffective against cholesterol

It is bad news for the millions of people who have placed all their trust in regular doses of exercise and drugs like statins to lower their cholesterol levels and maintain a healthy heart, a comprehensive study in England has revealed. Statin is considered to be a biotech drug. The study covered 80,096 patients. Only a fifth of them (14,424) were using statins. Of them, nearly half the patients failed to achieve the desired levels of reduction in bad body fats. The study, "The Performance for Life", by cardiologist Adrian Brady at the Glasgow Royal Infirmary also revealed that regular exercise and a healthy diet were not very effective in reducing cholesterol." Healthy diet and exercise are, of course, good but they do not lower cholesterol an awful lot," Brady told a meeting of the Primary Care Cardiovascular Society in London in early October. Pfizer's Lipitor, a statin, is currently the world's top-selling single drug with annual sales of over $8 billion. However, Brady revealed that ineffectiveness of statins may be mainly due to irregular use and inadequate dosage. Another fourth of the patients reached their cholesterol targets after being treated appropriately with statins. The study also found that not enough patients with high cholesterol levels were being treated with the drug. The study was sponsored by AstraZeneca. The company, which markets its own drug Crestor, also called rosuvastatin, has claimed that its compound was more effective that the older statins evaluated by Brady's study. The other significant finding was that exercise and healthy diet could reduce cholesterol levels only by 8 to 10 percent. " Cholesterol is made by the liver and its very much something you are born with," Brady said.

Mother's diet can alter baby's gene function

For ages, a surefire grandma's recipe to pregnant mothers was the insistence on their having a healthy diet. Scientists and grandmothers have for long known that such a healthy diet was good for the offspring. Now there is a conclusive proof that this indeed was the correct prescription.

And some recent experiments have dispelled another scientific assumption that the sequence of DNA was a major factor in an individual's predisposition to a particular disease. These experiments indicate that environmental factors like stress, diet and maternal nutrition can alter gene function without in any way making changes in the DNA sequence. In fact, a new field of study, epigenetics, has emerged to study this phenomenon.

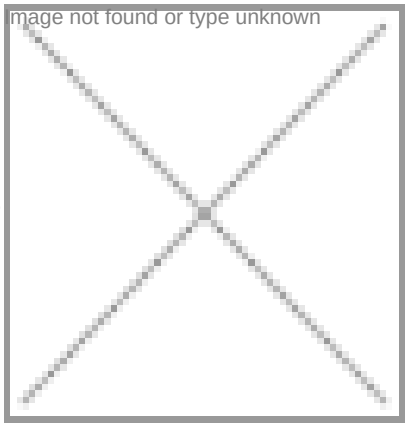
Researchers at the Duke University tried some experiments with yellow lab mice provided with triggers near the genes that control the traits related to color, obesity, diabetes and cancer, etc. to produce offsprings with the same traits. However, when fed with special vitamins and other supplements, the yellow mice delivered perfectly normal brown babies. "These special diets interact with the fetal mice genome and turn off the triggers that would have carried the abnormal traits into the next generation," said Dr Randy Jritle. Dr. Jirtle is a professor of radiation oncology at Duke and senior investigator of the study, which was reported in the August 1 issue of Molecular and Cellular Biology.

Biotech to improve coffee varieties

Biotechnology will come to the aid of the coffee industry. The Department of Biotechnology (DBT) has launched a "National Programme on Coffee Biotechnology" to develop drought and stress resistant varieties of coffee.

The national program will involve four major institutionsâ€”Center for Cellular and Molecular Biology (CCMB), Hyderabad, Central Coffee Research Institute (CCRI), Chikmangalur, Karnataka, University of Agricultural Sciences, Bangalore and Madurai Kamaraj University (MKU), Madurai.

This program is an extension of the government's Coffee Network project. CCMB has been doing the molecular characterization of coffee germplasm, supplied by CCRI. The germplasm includes a large number of elite genotypes of locally bred arabica varieties, commercially grown types, some Ethiopian collections, arabica and robusta types.



Scientists have found that in at least four exotic Coffea species, the genetic variability was very low. They also found generic affinities between these species. A web-based database has been prepared.

Researchers have also developed 80 markers for parental survey of 11 elite genotypes. Studies are also continuing at MKU, Madurai and CCRI, Mysore on transformation of Coffea arabicaâ€"Kent and Cauvery cultivars for leaf rust resistance. An Agro-bacterium binary vector with rice chitinase and tobacco glucanase was constructed. The Robusta coffee is also being transformed to regulate caffeine biosynthesis.