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Stories of modern science ... from UPI

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United Press International
From the [Science & Technology Desk](#)
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PUTTING RNA TO WORK

Purdue University researchers have discovered how viral RNA molecules bind an energy-bearing organical called ATP. Professor Peixuan Guo says while two substances together might seem to create just a long letters it really shows life's "storehouses of information" can be moved by one of its most important fuels. be even more of a key player than we realize," Guo says. "The fact that it can be made to bind ATP in th could imply that these two molecules were among the first to partner in Earth's dance of life." DNA, RNA are substances long known to be central to life's processes. Guo believes RNA can be put to work and A could power a motor made of six strands of RNA. "We are now exploring the myriad possible application tiny mechanism," he says.

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RNA INTERFERENCE TUNES GENE ACTIVITY

RNA interference can be used to regulate gene activity in stem cells, turning them to low, medium or high researchers at Cold Spring Harbor Lab. They say suppression of genes by RNAi -- in which adult stem c isolated, modified outside the body and then re-introduced into the patient -- might be an effective strateg treating disease. The study focused on a tumor suppressor gene called p53 in a mouse model of lympho Completely deleting the p53 gene causes lymphomas to develop much sooner, and in a more aggressiv scientists first destroyed the animals' bone marrow supply of hematopoietic stem cells and then injected with a fresh supply engineered through RNAi to produce low, medium or high levels of p53. The study sh establishing different levels of p53 produces distinct forms of lymphoma -- the lower the level of p53, the more aggressive the lymphoma.

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DOG IMAGING SHEDS LIGHT ON AGGRESSIVE BEHAVIOR

Ghent University researchers in the United Kingdom used single photon emission tomography on dogs to brain function. This imaging technique uses radiolabeled tracer substances to investigate function and m Brain perfusion, an indirect indicator for metabolism and related brain function, was measured in normal young dogs and compared with a group of normal behaving aging dogs, and in a group of aggressive do senior canines had a decreased perfusion in certain parts of the brain. In the aggressive dogs no perfusi alterations were found. Dysfunction of the serotonin-2A receptor in the brain is related to mood and beha disorders both in man and animals. The researchers found a decreased number of serotonin-2A recepto dogs group and an increased number in the aggressive group.

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PREVENTING BONE MARROW TRANSPLANT PROBLEMS

UT Southwestern Medical Center researchers in Dallas are working to identify problem cells in bone mar transplants and get rid of them before transplants takes place. Patients receiving a bone marrow transpl treated with high doses of chemotherapy to destroy cancer cells. It also destroys the bone marrow, which

with donated healthy marrow cells that repopulate the patient's blood cells. Allogenic stem cell transplant preferred but carry the risk of graft-versus-host disease, where the donated immune system attacks the r body. If the graft T cells are depleted prior to transplant, GVHD is eliminated but there is no anti-leukemic the patients are at-risk for infection. The researchers are developing an in-vitro procedure to activate the cells responsible for causing GVHD. These activated T cells are then eliminated with an immunotoxin, re cells responsible for GVHD but sparing cells responsible for the anti-leukemic activity and for fighting infe

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