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By: Stefan Anitei, Science Editor

The First Human-Cow Hybrid Embryos

The work of a British team

We do not know when genetics will insert cow genes in the breasts of the women, the dream of many men, but the first hybrid cow-human embryos and stem cells have already been obtained by British researchers led by Dr. Lyle Armstrong of Newcastle University. The research was presented to Israel's parliament last week. The researchers removed the nucleus of the cattle ovules, replaced it with a human cell nucleus, and achieved a growing embryo, being able to get embryonic stem cells. This is considered an important step in the study of embryonic stem cells, that transform in all other types of cells and tissues."If the team can produce cells which will survive in culture it will open the door to a better understanding of disease processes without having to use precious human eggs. Cells grown using animal eggs cannot be used to treat patients on safety grounds but they will help bring nearer the day when new stem cell therapies are available," said John Burn, Head of the Institute of Human Genetics at Newcastle University.Stem cells are investigated in the field of regenerative medicine, aimed at curing everything from spinal cord injuries to diseases like diabetes and cancer. The research on human embryonic stem cells faces tough ethical issues as it involves the killing of human embryos.But do not think that the new study will produce talking cows or minotaurs. "In my view there is no risk of making monsters this way. The biology will not work. Nor is that the intent of any of these experiments anyway, so I don't think that fear is justified. I come down on the side that says if you can make great gains by making embryo hybrids in preventing premature death and understanding disease then a limited amount of such research is morally justifiable," Arthur Caplan, director of the Center for Bioethics at the University of Pennsylvania, told Reuters. The British team was granted a license by Britain's Human Fertilization and Embryology Authority to use animal eggs."The U.S. government does not regulate such work. President George W. Bush has vetoed several bills that would regulate the field because they would also all permit work on human embryos," said Caplan. The mix of two different species is called chimera (not mutants, like in movies). Some make the legends, like the Egyptian or Hindu gods (half human and half lion, falcon, elephant, ram, bull and so on), minotaur (half bull, half man), centaurs (half men, half horses), but others do exist, as result of genetic engineering, like sheep or goats with human genes delivering human proteins (including insulin) in their milk.In 2004, a Chinese team claimed to have created embryos by inserting human DNA into a rabbit cell. Other researches aim to obtain stem cells by re-programming ordinary cells, like skin cells or bone marrow cells.