

## The Full Story Behind ACT's Human Embryo Study

BY Dave Andrusko

"After all, what really stands out about the ACT [Advanced Cell Technology] study is its fundamental aim. Stem-cell researchers are recognizing the need to find ways of doing their work that do not involve the destruction of human embryos. This is truly a welcome development."

From "The Real Good News on Stem Cells Beyond the hype, some real hope," by Robert P. George, which appeared August 28 at [www.nationalreview.com](http://www.nationalreview.com).

"In an effort to correct a misunderstanding about a study that described a way of creating embryonic stem cells while sparing human embryos, officials at the journal Nature said Thursday they plan on changing the paper to make it clearer that all of the embryos used were destroyed."

From "Journal will clarify human embryo study," Chicago Tribune, September 1.

On the one hand the study produced by Advanced Cell Technology and published August 23 in the online edition of the prestigious publication Nature represented a classic illustration of a press release outpacing what a study actually accomplished. On the other hand, for all its considerable faults, the study implicitly recognizes that it would be good for all parties to the debate if embryonic stem cells could be created without destroying human embryos in the process.

Put another way, it's important that the particular false assertion that made its way into the media stream not override (to quote Prof. Robert George) "the story of emerging techniques to derive embryonic-like stem cells without harming embryos."

For those who haven't had a chance to keep up with the ever-changing picture, Nature produced a news release August 23 to accompany the ACT study that inaccurately stated that human embryonic stem cells had been obtained from human embryos without destroying the embryos in the process. The Washington Post headline was typical: "Stem cells created with no harm to human embryos." In fact, this was blatantly untrue, and Nature corrected the error two days later.

As Prof. George explained, "First, the study did not involve the removal of one cell from an embryo that then continued to develop. Instead, researchers disaggregated 16 living embryos, killing them all, and took an average of six cells from each. The 91 resulting embryonic cells were then placed near one another in dishes and allowed to divide.

"Some divided, while others died, and from the cells that divided researchers were able to produce two lines of embryonic stem cells. In other words, the study did virtually nothing to prove the point that Advanced Cell Technology (the company that carried out the experiments) had argued in the press: that single cells removed from an early embryo and cultured by themselves can produce lines of embryonic stem cells."

Robert Lanza, ACT's vice president, denied that the research had been "hyped," even though he had told the New York Times, "There is no rational reason left to oppose this research." The

Chicago Tribune pointed out that in follow up interviews last week Lanza “did not make it clear that none of the embryos in the study survived stem cell extraction.”

In an explanation you have to read twice or three times to grasp, Ronald Green, a Dartmouth University ethics professor who advises ACT, told the Tribune that he does not object to the approach’s benign description. “The approach does not harm embryos; the experiment did,” Green said.

According to the Tribune, “Company representatives said the Nature clarification plays into the hands of people who oppose stem cell research.” This is wrong on multiple levels.

Truth is truth—that’s number one. In addition to the misleading press release, while the paper itself does explain that the source of the stem cells that were grown were human embryos taken apart to extract single cells, “an accompanying figure titled ‘Derivation of [stem cells] from single blastomeres’ shows a photo of a ‘blastomere-biopsied’ embryo at a later stage of development. None of the embryos yielding stem cells survived to that stage.”

Second, Prof. George’s excellent [nationalreview.com](http://nationalreview.com) piece made it clear that those who refuse to sanction the killing of human embryos for their stem cells “have vigorously supported non-embryo-destructive methods of obtaining pluripotent cell.” Prof. George’s essay describes several of them, including work at Harvard where scientists have shown “they could ‘reprogram’ an ordinary human skin cell back to the pluripotent state.” (“Pluripotent” cells are highly versatile and give rise to almost all cell types.)

Prof. George’s conclusion is right on the money. The “real news” coming out of all this is “the promise that pluripotent-stem-cell science can proceed without human embryo-killing.”