# Vatican Supports Stem Cell Initiative Led by School of Medicine

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Researchers at the School of Medicine are leading a new international research initiative, funded in part by the Vatican, to explore the therapeutic potential of intestinal stem cells. The International Intestinal Stem Cell Consortium will include scientists from several institutes in Italy as well as from the School of Medicine's Center for Stem Cell Biology and Regenerative Medicine.

The Vatican and the Istituto Superiore di Sanita, the Italian equivalent to the National Institutes of Health, announced the new partnership in April at a news conference in Rome attended by School of Medicine officials, including Curt Civin, MD, director of the School's stem cell center. A follow-up news conference was held in Baltimore in late April.

"This new coalition brings together scientists from both sides of the Atlantic to ensure we are exploring every avenue of stem cell research in order to bring real treatments as quickly as possible to patients suffering from deadly conditions such as Alzheimer's disease and multiple sclerosis," says Alessio Fasano, MD, director of the Mucosal Biology Research Center and the Center for Celiac Research at the School.

In addition to scientists at the School of Medicine, the group will include researchers from the Istituto Superiore di Sanita, the University of Salerno in Fasano's hometown of Salerno, Italy, and the Bambin Gesù in Rome, the largest children's hospital in Europe.

The Vatican funding goes directly to the foundation of the Scuola Medica Salernitana, the University of Salerno's medical school, which will distribute it to the School of Medicine and the rest of the consortium's partners.

Fasano says researching stem cells found in the intestines is a promising area that has been largely neglected until now.

The ideal type of stem cells for medical use, says Fasano, has unlimited pluripotency—that is, the stem cells are virtual blank slates that can become any kind of cell, from heart cells to blood cells to skin cells to intestinal cells and so on. Embryonic stem cells and the newer induced pluripotent stem (iPS) cells are prized for their pluripotency, which makes them promising for use in treating a variety of health conditions from heart disease and cancers.

Adult stem cells are not as pluripotent, but harvesting them from a patient's skin, muscle, bone marrow or intestine may be an important alternative, according to Fasano. "We just want to take advantage of what nature is already doing in the intestines," he says.

Intestinal stem cells can be easily harvested using endoscopy, a simple procedure used regularly for intestinal biopsies. As a result, patients could have their own intestinal cells harvested and used to treat bowel disease. If patients were to receive treatments using their own stem cells, there could be less risk of rejection or a reaction to the transplant, Fasano explains.

"These cells are very promising, at least on paper," he says. "To study this, though, takes multidisciplinary teams of experts in stem cell research, experts in gastrointestinal medicine, experts in molecular biology and bioengineering. We need all the pieces of the puzzle and we need to communicate freely, sharing our ideas and findings. That is what we will do with this consortium."

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Alessio Fasano (left) and Curt Civin attended the news conference in Rome to announce the new International Intestinal Stem Cell Consortium.