treatment — because they have the potential to develop into every cell type found in the body. Ultimately, physicians would like to transplant these cells into patients, where they could repair tissues such as nerve, skin, or heart muscle cells.

One drawback to the advancement of stem cell technologies has been that the cells are not very stable in the laboratory, making them challenging to study. They are also difficult to manipulate into becoming the specific cell types needed for stem cell therapy. (Stem cells can be induced into differentiating, or changing, into more specialized cell types by exposing them to various chemical compounds, but for most cell types the compounds needed to bring about these changes are not known.)

Now a team led by Memorial Sloan Kettering stem cell biologist Lorenz Studer has found a way to overcome some of those hurdles. His team worked out a method to keep the cells alive and in an undifferentiated state, and found a way to use these cells to test thousands of chemicals in a short period of time for their ability to induce changes in stem cells. This testing method, known as high-throughput screening, makes use of automated, robotic instruments and is frequently used to screen for possible new drugs and other biologically active compounds in other types of cells.

In the current study, published in the June 5 issue of *Cell Stem Cell* [PubMed Abstract], the researchers tested 2,880 compounds for their effects on undifferentiated stem cells; 748 of these compounds were existing drugs that are already on the market. The team ultimately identified 22 compounds that influenced activity of stem cells in some way. Dr. Studer said he plans to continue refining the testing method, and will use it to examine the 300,000 compounds that the Center has stored in its chemical library. “The availability of this tool should accelerate progress in developing stem-cell-based treatments,” he explained.