



454 Life Sciences Publishes Breakthrough Genome Sequencing Technique

Microfabrication Allows Sequencing in Record Time

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BRANFORD, Conn., Aug. 1 /PRNewswire-FirstCall/ -- 454 Life Sciences Corporation, a majority-owned subsidiary of CuraGen Corporation (Nasdaq: CRGN), today announced the publication of a new genome sequencing technique 100 times faster than previous technologies. This is the first new technology for genome sequencing to be developed and commercialized since Sanger-based DNA sequencing. 454's proprietary technology is described in the paper "Genome sequencing in microfabricated high-density picoliter reactors," in the July 31, 2005, online issue of Nature, with the print edition of the paper to follow later in the year. The technique was demonstrated by repeatedly sequencing the bacterial genome *Mycoplasma genitalium* in four hours, with up to and exceeding 99.99% accuracy. With a 100-fold increase in throughput over current sequencing technology, 454 Life Sciences' instrument system opens up new uses for sequencing, including personalized medicine and diagnostics, oncology research, understanding third world diseases, and providing fast responses to bioterrorism threats and diagnostics.

"It is clear that sequencing technology needs to continue to become smaller, faster and less expensive in order to fulfill the promise of personalized medicine," said Francis S. Collins, M.D., Ph.D., Director of the National Human Genome Research Institute. "We are excited that our support of sequencing technology development is yielding results and we look forward to the applications of such innovative technologies in biomedical research and, ultimately, the clinic."

In May 2004, the NHGRI awarded a grant to 454 Life Sciences to help fund the scale-up of 454 Life Sciences' technique toward the sequencing of larger genomes, starting with bacterial genomes, and to develop the Company's ultraminiaturized technology as a method to sequence routinely individual human genomes. The scalable, highly parallel system described in this article sequenced 25 million base pairs, at 99% or better accuracy, in a single four hour run. The researchers illustrated the technique by sequencing the genome of the *Mycoplasma genitalium* bacterium.

"Much like the personal computer opened up computing to a larger audience, this work will enable the widespread use of sequencing in a number of fields, and ultimately place machines in your doctor's office," stated Jonathan Rothberg, Ph.D., senior author and 454 Life Sciences' Founder and Chairman of the Board of Directors. "This sequencing technique, leveraging the power of microfabrication, is 100 times faster than standard sequencing methods at the start of its development cycle. We expect, as with computers, for it to get more powerful and cheaper each year, as we continue to advance and miniaturize the technology."

"This technology is at the core of 454 Life Sciences' products," explained Christopher McLeod, President and Chief Executive Officer of 454 Life Sciences. "Publication in Nature validates the innovation which has gone into developing our whole genome sequencing technologies and instrument systems. Because this technology is so affordable and easy to use, we are able to 'democratize' whole genome research, making it available to researchers outside of the major genome sequencing centers, which we believe will further speed the course to personalized medicine."

About 454 Life Sciences

454 Life Sciences is marketing its sequencing services, instrument systems and proprietary reagents to pharmaceutical, biotechnology, biodefense, and bioindustrial companies as well as to universities and government agencies. In May 2005, 454 Life Sciences entered into an exclusive worldwide distribution agreement with Roche for the promotion, sale, and distribution of 454 Life Sciences' nanotechnology-based Genome Sequencing Systems, including proprietary kits and reagents, to all markets with the exception of regulated diagnostics. 454 Life Sciences is a majority owned subsidiary of CuraGen Corporation (Nasdaq: CRGN). Additional information is available at <http://www.454.com>.

454 Life Sciences' system enables one individual to prepare and sequence an entire genome after performing a single sample preparation, irrespective of the size of the genome being studied. The hallmark of 454 Life Sciences' technology is the nanotechnology-based approach to sequencing which allows a single instrument to produce over 20 million nucleotide bases per four hour run, totaling more than 100 times the capacity of instruments using the current macro-scale technology. 454 Life

Sciences' technology is based on integrating proprietary picoliter-technologies (a picoliter is one trillionth of a liter), patented light emitting sequencing chemistries, and state-of-the-art informatics. The patented Genome Sequencing System utilizes this technology and is scalable.

Safe Harbor

This press release contains forward-looking statements, including statements that 454 Life Sciences' instrument system opens up new uses for sequencing, 454 Life Sciences' expectation that its sequencing technology will get more powerful and cheaper each year and will 'democratize' whole genome research, making it available to researchers outside of the major genome sequencing centers, which 454 Life Sciences believes will further speed the course to personalized medicine. Such statements are based on our current expectations and are subject to a number of risks and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. 454 Life Sciences and CuraGen caution investors that there can be no assurance that actual results or business conditions will not differ materially from those projected or suggested in such forward-looking statements as a result of various factors, including, but not limited to, the following: the early stage of development of 454 Life Sciences' products and technologies, CuraGen's stage of development as a genomics-based pharmaceutical company, uncertainties of clinical trials, government regulation and healthcare reform, technological uncertainty and product development risks, product liability exposure, uncertainty of additional funding, 454 Life Sciences' and CuraGen's history of incurring losses and the uncertainty of achieving profitability, CuraGen's reliance on research collaborations and strategic alliances, competition, patent infringement claims against 454 Life Sciences and CuraGen's products, processes and technologies, the ability to protect 454 Life Sciences' and CuraGen's patents and proprietary rights and uncertainties relating to commercialization rights. Please refer to CuraGen's Quarterly Report on Form 10-Q for the period ended March 31, 2005 for a complete description of these risks. 454 Life Sciences and CuraGen disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, unless required by law.

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