

# HIGHLIGHTS FROM OUR BLOG

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## The Human Microbiome: Slowly Getting There

By Alexander Reynaldi Posted On November 9, 2015

At this point in time, the study of the human microbiome is not a novelty. Quite a lot of time and money has gone into pursuing the promising field, hoping that collecting data from the trillions of microorganisms in and on our bodies will offer insights into how they affect health and diseases. While the microbiome has been shown to heavily affect us—the food we eat, our immune system and infections, organ developments, even behavioral traits—our knowledge regarding the microbiome is still extremely limited. The goal of predicting an individual's propensity for certain diseases (and ultimately preventing them) using the human microbiome seems more distant than not.

Part of the reason of why this research seems to be progressing slowly is the vast amount of data that needs to be processed and the time required to amass it. Specifically, months are required for bacteria collection (mainly from feces—relatively unappealing to the masses and probably another reason the field is not popular) and for gene sequencing. Biotech companies such as Biomiic have started working on how to process and present collected data at a much faster rate.

Once data can be processed more powerfully, perhaps the field will advance rapidly. After all, even the world's largest collaborative biological project—The Human Genome Project—was only possible because of remarkable progress in sequencing and computing technology.

In any case, the study of the human microbiome is extremely valuable as our microbiome is an integral part of our lives. Perhaps once it gains more popularity and funding, more will be discovered regarding these organisms that call us their

## Scientists Selling Genetically-Engineered Micro-Pigs

By Kara Turner Posted On October 19, 2015



Who doesn't love things that are fun-sized? While most pet owners would gladly keep their furry friends baby sized forever, a group of scientists in China has taken things a step further. Geneticists from leading genomics research institute BGI in Shenzhen, China have begun selling genetically engineered micro-pigs as pets starting at US\$1600.

By deactivating a growth hormone receptor or GHR gene, scientists have effectively stunted the growth of Bama pigs. Normally mature pigs weigh up to 100 pounds, but mature micro-pigs grow to only about 30 pounds, or the size of an average dog. By introducing an enzyme called transcription activator-like effector nucleases, or TALENs, to the cloning process, scientists were able to disable one of two growth hormone genes that cause Bama pigs to mature to their full size.

Of course, cloning Bama fetuses comes with adverse health effects and shortened lifespan, as evidenced by other cloned mammals, such as Dolly the sheep. However, by breeding the genetically engineered male micro-pigs with normal female pigs, half of the offspring are born as micro-pigs without the adverse health effects of being born as clones.

Having more similar genetic and physiological make-up to humans than the typical lab rat, but often rejected for lab work for their large size, micro-pigs were originally intended to serve as subjects for human disease in genetic research. However, a fringe pet market for unusually small animals has given their products new purpose. As of now, BGI states that profit is currently their main objective with their new micro-pigs.

### IMAGE SOURCES

<http://learn.genetics.utah.edu/content/microbiome/changing/images/change6.jpg>

<http://6.darkroom.stylist.co.uk/980/3ae5cae2e-2b91a857e4e5900fb0083b5:2d4802eda6893fb3a5563a36d-b66e9b5/micro-pigs-3-rex-18apr12.jpg>

