The benefits of long-tailed macaque monkeys for biomedical research

**Long-tailed macaque monkeys support:**
- Disease-specific research and treatments
- The safe and effective development of drugs and biologics

**LTMs are one of the most widely used NHP research model for drug development, as well as drug safety and efficacy testing, because they metabolize drugs much like humans do.**

**Without LTMs, 53% of drugs and biologics currently being developed – an estimated 19,742 drugs and biologics – may never make it to market.**

**Without LTMs 57% of oncology drugs and biologics currently being developed – an estimated 7,439 drugs and biologics – may never make it to market.**

**They are the preferred NHP research model for the development and safety/efficacy evaluation of monoclonal antibody drugs because many of the disease target molecules in their cells are remarkably similar to the ones in human cells.**

**They are one of the preferred NHP research models for the development and safety/efficacy evaluation of other biologics including vaccines, cell-based and gene-based therapies and recombinant protein therapeutics.**

**Six of the top 25 prescription drugs were developed and their safety/efficacy was also validated thanks to LTMs:**
- Calpol®, Excedrin®, Panadol®, Tylenol® and other commonly prescribed acetaminophen-based medications for pain and aches
- Atorvastatin to treat high LDL (“bad”) cholesterol
- Pravastatin for high LDL cholesterol
- Simvastatin for high LDL cholesterol
- Losartan Potassium to treat high blood pressure
- Sertraline Hydrochloride to treat depression, anxiety as well as other common psychiatric disorders like ADHD.
Cancer Immunotherapy
- Genetically-modified LTMs to develop CRISPR-based immune checkpoint inhibitor therapies for:
  ~Breast cancer
  ~Cervical cancer
  ~Colorectal cancer
  ~Leukemia
  ~Liver cancer
  ~Lymphoma
  ~Ovarian cancer
- Without LTMs 57% of oncology drugs and biologics - an estimated 7,439 oncology drugs and biologics - may never make it to market
This state-of-the-art technology could reduce cancer deaths in line with the goals of the Cancer Moonshot Initiative

Drug development
- Without LTMs, 53% of drugs and biologics that are currently being developed – an estimated 19,742 drugs and biologics - may never make it to market
- LTM is the NHP model for the development of:
  ~Six of the top 25 prescription drugs
  ~Most monoclonal antibody

Immunology (Vaccines, Antiviral Treatments & Monoclonal Antibody Treatments)
- Dengvaxia® dengue vaccine
- Ervebo® Ebola vaccine
- Vaccine and antiviral treatment research for:
  ~Hep E
  ~Herpes virus
  ~HIV/AIDS
  ~Marbug virus
  ~Sudan virus
  ~Zika virus
- Monoclonal antibody treatments for SARS-CoV-2 and other viral infections

Regenerative Cardiovascular Disease Research
- Transgenic & genetically modified LTMs for the pre-clinical validation of iPSC-based cell replacement therapies for late-stage cardiovascular disease

Regenerative Neurological Disease Research
- Transgenic & genetically modified LTMs for the pre-clinical validation of iPSC-based cell replacement therapies for degenerative diseases:
  ~Alzheimer's
  ~Macular degeneration
  ~Other degenerative disorders of the nervous system

Genetic Disease Research
- Humans & LTMs share more than 90% of the same genes
- Transgenic & genetically modified LTMs for:
  ~Cystic fibrosis research
  ~Rhett syndrome research
  ~Werner syndrome research