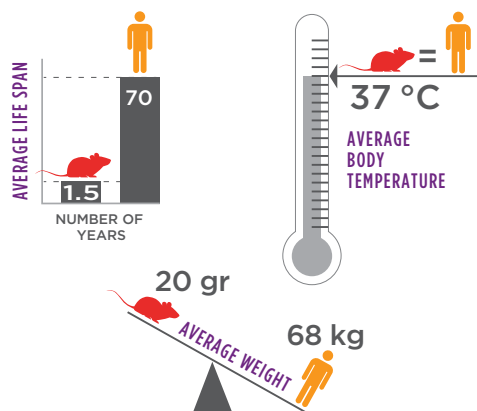


THE POWER OF LABORATORY MICE

Since the first published study using mice in 1844, over 1.4 million scholarly articles have been published. Over half of those articles have been published in the past 2 decades and twice as many were published in the decade 2007–2016 than 1997–2006. These data demonstrate the increasing value of laboratory mice in biomedical research. Genetically engineered mice bolstered this growth by improving the ability to translate results to humans. Looking forward, the laboratory mouse will continue to play a critical role in biomedical research, as the ability to generate increasingly precise models will give the researcher of tomorrow an animal that has power to further our understanding of complex human biology.

MOUSE VS. HUMAN

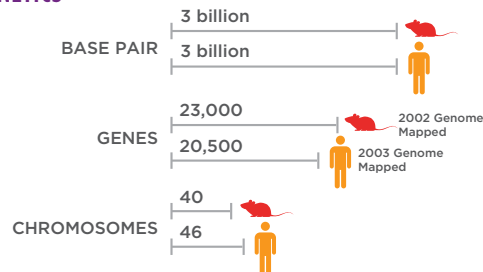


REPRODUCTIVE TRAITS*

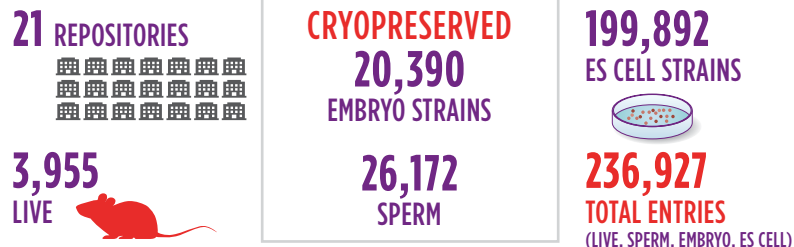
ESTROUS CYCLE	4-5 DAYS	28 DAYS
GESTATION	20 DAYS	280 DAYS
LACTATION DURATION	28 DAYS	365 DAYS
AVERAGE NUMBER OF OFFSPRING	1-10	1

* Figures represent averages and can vary widely with individual strains or people.

GENETICS



HOW MANY STRAINS HAVE BEEN GENERATED?



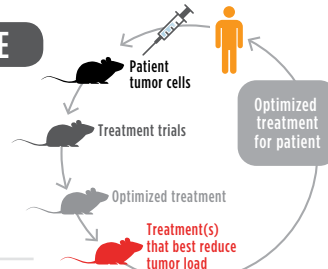
Source: International Mouse Strain Repository

CYCLICAL PRECISION MEDICINE

HUMAN TO MOUSE TO HUMAN

Mice are used in precision medicine to select optimal drug regimens for cancer treatment

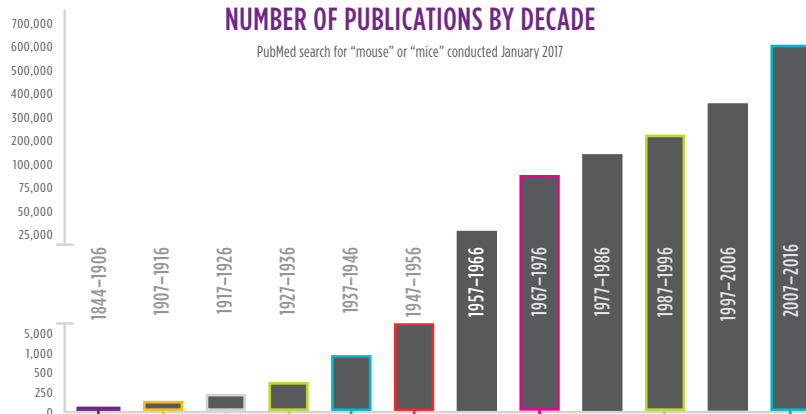
Learn more about Precision Research Models Repository



RISING USE

NUMBER OF PUBLICATIONS BY DECADE

PubMed search for "mouse" or "mice" conducted January 2017



Source: Labome

TYPES OF LAB MICE

PERCENTAGE OF USE

OUTBRED

Production of offspring from mating of unrelated individuals. Outbred breeding maintains genetic diversity.

Learn more about outbred mice

INBRED

Production of offspring from mating of male and female mice that are closely related genetically, typically brother x sister mating. A line is considered inbred after 20 generations of brother x sister matings. Inbreeding results in homozygosity.

- View the genealogies of mouse inbred strains
- View poster of inbred strains of mice
- Learn more about inbred mice

RANDOM TRANSGENIC

Mice in which a transgene has been randomly inserted into the genome typically by microinjection of a DNA fragment into a pronuclear embryo.

Learn more about transgenic mice

TARGETED

Mice containing a targeted gene insertion or deletion through the use of embryonic stem cells or more recently CRISPR.

- Learn more about targeted mutations
- Learn more about CRISPR

CONGENIC

Mice that differ in only one locus and a linked segment of chromosome. Backcrossing of 5–10 generations is usually required to develop a congenic strain.

Learn more about congenic mice