

ANIMAL MODELS IN RESEARCH



**Discovery
of Insulin**



**Polio
Vaccine**



**Asthma
Inhalers**



**Penicillin
Antibiotic**

ANIMAL SPECIES & RESEARCH ADVANTAGES



NON-HUMAN PRIMATE

- Pathogens that naturally infect large animals are genetically closely related to those that afflict humans
- Pathological and clinical changes that occur after infection in large animals mimic the human response much more closely than they would in an unnatural lab host
- Biofluids collected from Cynomolgus are commonly used in pre-clinical research to ensure the specimens are not generating unwanted functions, such as cytokine release and toxicity



CANINE

- Often used in drug development research
- Size allows continuous monitoring required for hemodynamic and other studies
- Similarities in anatomical morphology, physiology, and genetics with humans, experiencing similar afflictions such as cancer, diabetes and genetic disorders
- Canine PBMCs are used for immunophenotyping studies to determine the influence of therapeutics on cell populations



RODENT (MOUSE/RAT)

- Adapt well to new surroundings, easier to use in research
- Reproduce quickly and have short lifespans of two to three years
- Genetic, biological and behavior characteristics closely resemble those of humans (share 80% of genes)
- Cost-effective
- Products can represent different diseases or functions since these animals can be genetically mutated into different strains

Species listed above are a representative list. Additional species and strains available.

RESEARCH APPLICATIONS

In 1902 William Castle started breeding mice for genetic studies. Over time, animals have been a major part of scientific research.

While originally each species had their niche research areas, developments in technology and models have allowed the cross purposing of species, leading the way to better science.

TARGET & BIOMARKER VALIDATION

- IHC
- ISH
- Gene Expression
- Mutation Analysis
- "Omics"

COMPOUND EVALUATION

- ADCC Assays
- CDC Assays
- Cytokine Release Assay
- Biomarker Assay Development

DRUG METABOLISM

- Metabolic Stability
- Drug Interaction
- Drug Transport
- Bioanalytical Method Development

DRUG SAFETY

- Tissue Cross-Reactivity
- Cytotoxicity
- Biomarker Assay Development