



# EXPERIMENTAL ANIMALS USED IN PHARMACOLOGY

## RABBIT

<b>Scientific Name</b>	<i>Oryctolagus Cuniculus</i>	
<b>Body Temperature</b>	38.7-39.1°C	
<b>Respiration Rate</b>	55 Per Minute	
<b>Pulse Rate</b>	135 Per Minute	
<b>Blood Volume</b>	45-70 ml/kg	
<b>Prefer Humidity</b>	40-50 %	
<b>Room Temperature</b>	15.5-18.5 °C	
<b>Mating Age</b>	6-9 Months	
<b>Gestation Periods</b>	28-31 Days	
<b>Breeding Life</b>	3 Years	
<b>Life Span</b>	4-5 Years	
<b>Water Consumption</b>	200-300 ml/Day	
<b>Litters</b>	4 Per Day	
<b>Average Litter Size</b>	4	
<b>Wearing Age</b>	6-8 Weeks	
<b>Body Weight</b>	2000-3000 gm	
<b>Feed</b>	Lucerne Grass, Carrot, Bengal gram, Wheat Bran	
<b>Common Disease</b>	T.B, RTI, Intestinal infection, Ear Cancer	
<b>USE</b>	Pyrogen Testing, Anti Diabetic Study, Bioassay of Insulin, Capillary Permeability Study. Embryo Toxic Study	
<b>Advantages</b>	1. Docile Animal 2. New Zealand white strains are widely used 3. It has huge caceum and long appendix 4. Enzyme atropine esterase is present in rabbit liver and plasma so it can tolerate large doses of belladonna (atropine)	


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## Guinea Pig

Scientific Name	<i>Cavia porcellus</i>	
Body Temperature	37.6-38.9 °C	
Respiration Rate	60-110 Per Minute	
Pulse Rate	150 Per Minute	
Blood Volume	65-90 ml/kg	
Prefer Humidity	45%	
Room Temperature	18.5-27	
Life Span	2 Years	
Mating Age	12-20 Weeks	
Estrus Cycle	15-19 Days	
Gestation Periods	59- 72 Days	
Water Consumption	250-350 ml/day	
Litters	4 Per Year	
Average Litter Size	4	
Wearing Age	14 Days	
Body Weight	200-1000 gm	
Feed	Crushed Oats, Carrot, Cabbage, Protein Food	
Common Disease	Abscesses in Lymph Gland, Respiratory Tract Infection,	
USE	1. Evaluation of bronchodilator (Anti-Asthmatic) 2. Sensitization Study like Egg Albumin and Horse Serum. 3. Study of local anesthetics 4. Bioassay of Digitalis, Histamines, and acetyl choline 5. Screening of spasmodic and antispasmodic compounds. 6. Study of Vitamin C metabolism 7. Study of anti TB Drugs 8. isolation preparation of Ileum, tracheal chain	
Advantages	1. Docile Animal 2. Highly susceptible for TB and Anaphylaxis 3. Highly Sensitive to Penicillin and Histamine	


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## RAT

Scientific Name	<i>Rattus norvegicus</i>	
Body Temperature	37.5 <sup>0</sup> C	
Respiration Rate	80-150 Per Minute	
Pulse Rate	260-450 Per Minute	
Blood Pressure	130/90	
Blood Volume	50-65 ml/kg	
Estrous Cycle	4-5 Days	
Life Span	2-3 Years	
Humidity Prefer	44-60%	
Room Temperature	18.5-27	
Mating Age	70-84 Days	
Gestation Periods	21-23 Days	
Litters	10-12 Yearly	
Average Litter Size	7	
Wearing Age	23-28 Days	
Body Weight	120-300 gm	
Feed	Cracked wheat, Ground nut, Yeast powder, Not Specific	
Common Disease	Bronchopneumonia, Paracytic Infection	
USE	1. Evaluation of Psychopharmacological agents 2. Toxicity Studies- Teratogenic and Carcinogenic Activity 3. Anti Ulcer ( Gastric Secretion) 4. Liver Physiological Studies 5. Isolation Preparation- uterus, Fundus Strip, Colon, Stomach 6. Antihypertensive Effects 7. Assay of Hormones	
Other Strains	Wistar rat, Sprague Dawley rat, Biobreeding rat, Long-Evans rat, Zucker rat, Hairless rats, RCS rats, Shaking rat Kawasaki	
Advantage-	1. Small in size 2. Drug required in small quantity 3. Vomiting center is absent so oral administration is easy 4. Gall bladder and tonsils are absent 5. Continuous bile flow in intestine	


# EXPERIMENTAL ANIMALS USED IN PHARMACOLOGY

## Mice

Scientific Name	Mus musculus	
Body Temperature	37.4 <sup>0</sup> C	
Respiration Rate	90-160 Per Minute	
Pulse Rate	300-750 Per Minute *	
Blood Pressure	120/75	
Blood Volume	70-80 ml/kg	
RBC Count	4.9-12.5 M/mm <sup>3</sup>	
Life Span	1-2 Years	
Humidity Prefer	60-70%	
Room Temperature	20-27	
Mating Age	6-8 Weeks	
Gestation Periods	19-21 Days	
Estrous Cycle	4-5 Days	
Litters	8-12 Yearly	
Average Litter Size	7-8	
Wearing Age	19-21 Days	
Body Weight	25-30 gm	
Feed	Cracked food, Shark liver oil, Yeast powder, and Pallet, Sesame oil, Fish and other General food supplements.	
Common Disease	Salmonellosis like Mouse typhoid, Small pox, Steptobacillus Infection	
USE	1. Acute toxicity studies. 2. Assay of Insulin 3. Screening of chemotherapeutic and teratogenic agents 4. Cancer and genetic research 5. Isolated preparation- Vas deferens, ileum.	
Other Strain	Balb/C and C-57	
Advantages	1. Small 2. Easy in handling and required small dosage	

# EXPERIMENTAL ANIMALS USED IN PHARMACOLOGY


## Hamster

Scientific Name	Mesocricetus auratus	
Body Temperature	36.2-37.5 °C (rectal)	
Respiration Rate	74(33-127)	
Pulse Rate	280-412/min	
Prefer Humidity	NA	
Room Temperature	37	
Mating Age	6-8 week	
Gestation Periods	15-18 days	
Estrous Cycle	4 days	
Life Span	2-3 Years	
Litters	14	
Wearing Age	21 Days	
Body Weight	85-140 gm	
Feed	Soybean meal provides a better protein supplement More complex carbohydrates, such as, cornstarch are more highly tolerated energy sources. 30-40% corn starch in the ration is ideal	
Common Disease	Enteritis, Pneumonia, Neoplasia, Polycystic disease	
Species	Syrian/Golden and Chinese, Mesocricetus auratus	
USE	1. Immunology and Virology 2. In Diabetes Studies 3. Cytological Investigation 4. Genetics, Tissue culture, and Radiation experiments.	
Advantages	1. Availability and Ease in reproduction 2. Relative freedom from spontaneous diseases 3. Anatomical and physiological features with unique potential For study 4. Rapid development with short life cycles 5. Presence of cheek pouch	



## EXPERIMENTAL ANIMALS USED IN PHARMACOLOGY

### Monkey

Scientific Name	Macaca mullata	
Body Temperature	37-39 <sup>0</sup> C	
Respiration Rate	76-90	
Pulse Rate	Upto 150 Per Minute	
Room Temperature	37-40	
Mating Age	4-5 Years	
Gestation Periods	165 days	
Estrous Cycle	26-28 days	
Litters	1	
Average Litter Size	1	
Body Weight	About 5000-6000 gm	
Feed	They are basically vegetarian and they eat banana and other fruits	
Common Disease	Herpes B, Rabies, Cold, Polio, _Measles, Titenus And Tuberculosis	
USE	1. Infertility 2. Virology, Parasitology, Immunology, 3. Immunosuppressant, Nutrition etc	
Advantages	1. They are very much similar to humans 2. They have same menstrual cycle as woman 2. They have same emotional behavior as human.	


# EXPERIMENTAL ANIMALS USED IN PHARMACOLOGY

## Dog

Scientific Name	Canis familiaris	
Body Temperature	37.7 °C	
Respiration Rate	14-28 Per Minute	
Pulse Rate	77-138 Per Minute	
Blood Pressure	140/80	
Blood Volume	75-100 ml/kg	
Prefer Humidity	60-70	
Room Temperature	24-27	
Mating Age	90 Days	
Gestation Periods	62 Days	
Estrous Cycle	180 Days	
Life Span	Up to 10 Years	
Litters	2-6	
Average Litter Size	6	
Body Weight	5000-8000 gm	
Feed	They are non-vegetarian by habit; they can eat meat, eggs, and other food supplement.	
Common Disease	Rabies, Diarrhea, Arthritis, leprosy, hook worm infection etc	
USE	1. Anti hypertensive, 2. Vaccination 3. Diabetes and anti ulcer experiments.	
Advantages	1. They can be easily trained for behavioral activity 2. Supportive in nature for the experiments	

# EXPERIMENTAL ANIMALS USED IN PHARMACOLOGY

## Pig

Scientific Name	<i>Sus scrofa domestica</i>	
Body Temperature	37-40 °C	
Respiration Rate	15-20 Per Minute	
Pulse Rate	56-58 Per Minute	
Prefer Humidity	37-40	
Room Temperature	22-24	
Mating Age	5-6 Months	
Gestation Periods	115 Days	
Estrous Cycle	21 Days	
Litters	10	
Average Litter Size	10	
Body Weight	30-70 Kg	
Feed	They can eat vegetable and non vegetable food	
Common Disease	Swine Influenza, hepatitis, Cold, Dermatitis, Respiratory Disease and othe communicable disease	
Species	Sus ahoenobarbus, Sus barbatus, <i>sus celebensis</i>	
USE	1. Influenza 2. Respiratory Medicaments 3. GIT Disease	
Advantages	1. Similar in Human physiology 2. Immunological reaction can be determined.	