الحيوانات المختبرية

Laboratory Animals

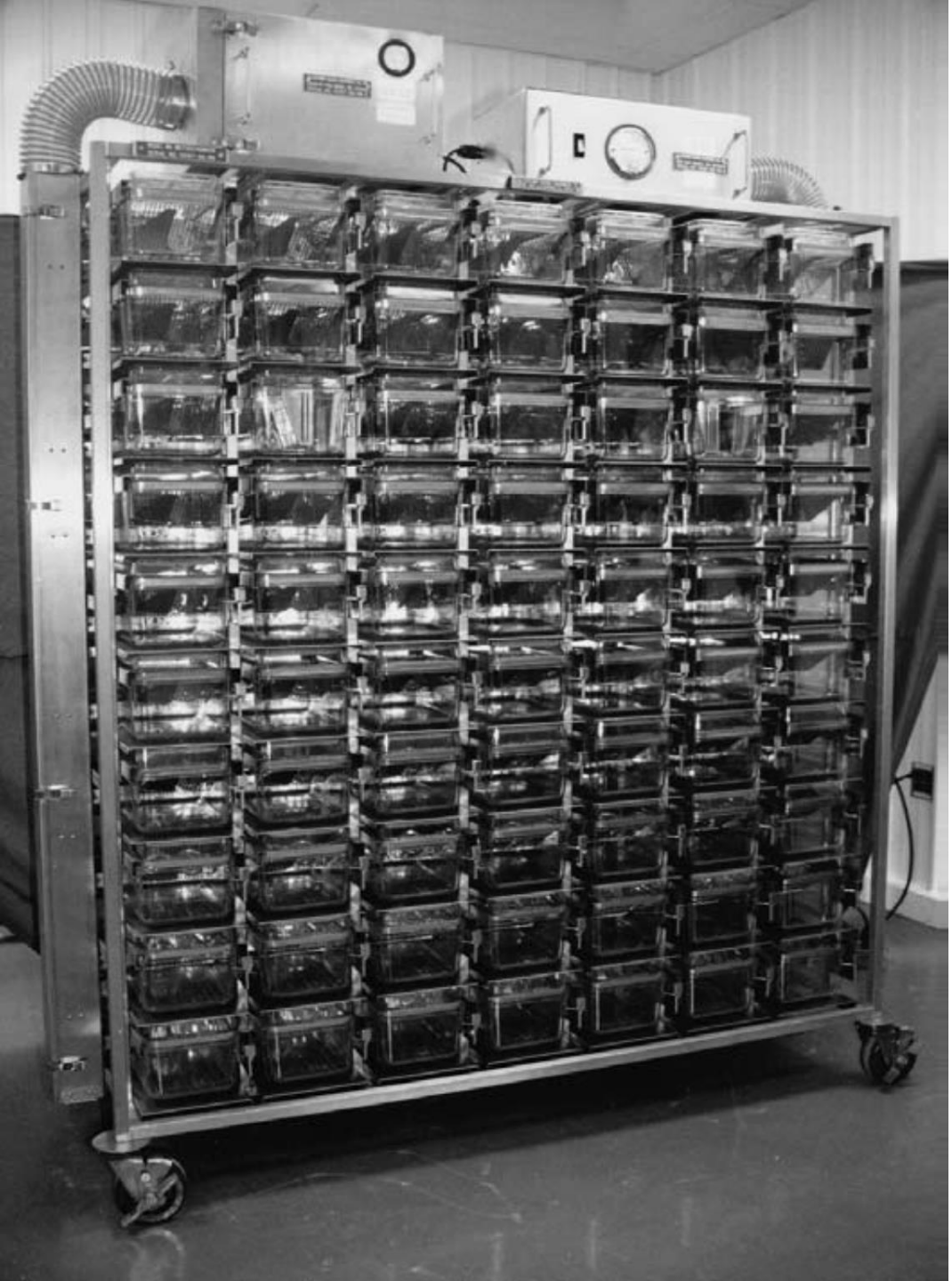
laboratory animals

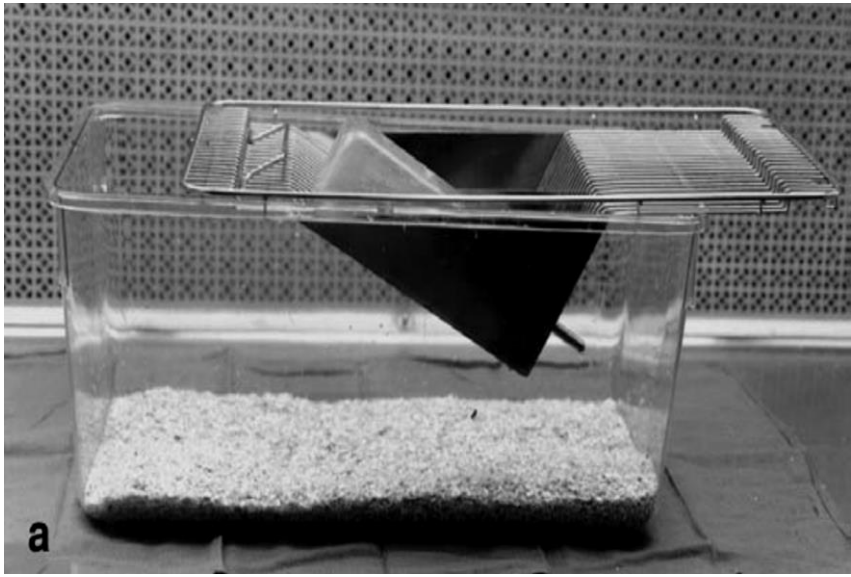
Laboratory Animal Specifications

- 1- Origin and bloodline are known
- 2- Free from the causes of infectious diseases (the changes that occur in the animal are the result of research work and not a pathological condition. The natural readings of the animal can be used.
- 3- It should be appropriate to the nature of the research
- 4- The presence of a reliable permanent source to provide the researcher with the required animals and the specifications of the research

Laboratory Animal Care

- Providing a permanent source of clean drinking water and fodder
- Provide adequate temperature and humidity
- Change the mattress and take care of the cleanliness of the cages

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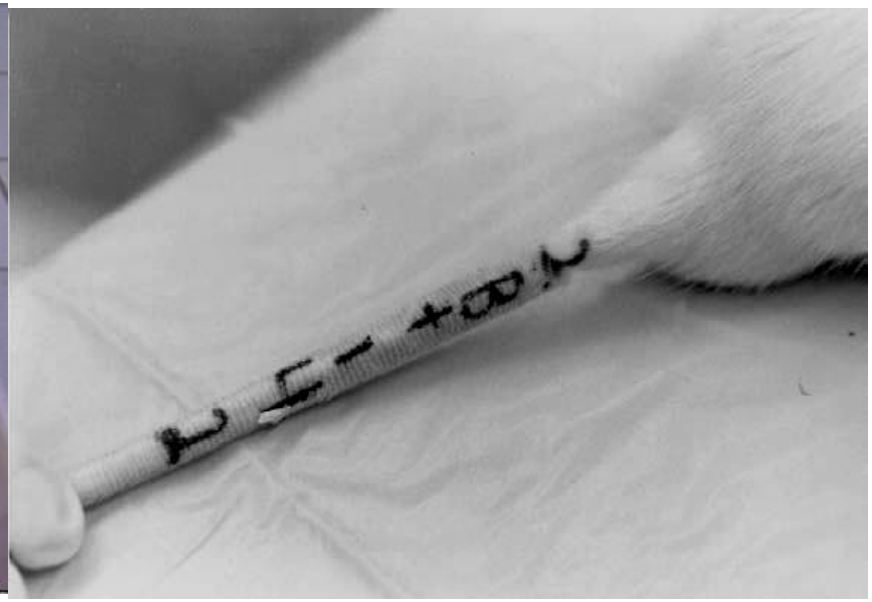
تعليم الحيوان المختبري Marking of Animals

قلم الترقيم permanent



الوشم Tatto

Tag or Ring

branding الوسم

Staining

التخدير

Chloroform or ether

28mg/kg of bwt Pentobarbitone

Xylazine (٥ ملغم / كغم) و Ketamine(٥٠ ملغم/ كغم)

اكثر حيوانات التجارب شيوعا

١-الفئران mice

٢-الجرذان rats

٣-الارانب rabbits

٤-خنازير غينيا Guinea pigs

٥- الهامستر،القردة .....

Common Laboratory Animals Used in Toxicology

The mouse (Mus musculus)	
Body temperature	37.4 ºC
Age at sexual maturity	35 days
Mating age	45-60 days
Estrus cycle	4-5 days
Gestation period	19-21 days
Litter size	6-11
Weaning age	21 days
Housing environment	
Temperature	21 ºC
Relative humidity	50%.
Light-dark cycle	12-12 h
Daily food intake	4-5 g
Daily water intake	7 ml
Surface area	20 g = 46 cm^2
Routes of drug administration	Oral Subcutaneous Intramuscular Intraperitoneal
Volume of drug administration	5-10 ml/kg body weight

The rat (Rattus norvegicus)	
Body temperature	37.5 ºC
Age at sexual maturity:	40-45 days
Mating age	70-150 days
Estrus cycle	4-5 days
Gestation period	21-23 days
Litter size	6-11
Weaning age	21 days
Housing environment	
Temperature	22 ºC
Relative humidity	55%.
Light-dark cycle	12-12 h
Daily food intake	10-20 g
Daily water intake	20 ml
Surface area	200 g = 325 cm^2
Routes of drug administration	Oral Subcutaneous Intramuscular Intraperitoneal
Volume of drug administration	1-2 ml/kg body weight

The rabbit (Oryctolagus cuniculus)	
Body temperature	38.3-39.5 ºC
Age at sexual maturity:	4-6 months
Mating age	6 months
Estrus cycle	Continuous
Gestation period	30-32 days
Litter size	6-8
Weaning age	45 days
Housing environment	
Temperature	10-18 ºC
Relative humidity	40-45%
Light-dark cycle	12-12 h
Daily food intake	15-300 g
Daily water intake	150-200 ml
Surface area	1.5 kg = 1270 cm^2
Routes of drug administration	Oral Subcutaneous Intramuscular Intraperitoneal
Volume of drug administration	0.25-2 ml/kg body weight

Guinea-pig (Cavia porcellus)	
Body temperature	38.3-40 ^{o}C
Age at sexual maturity	60-80 days
Mating age	12 weeks
Estrus cycle	14-16 days
Gestation period	59-72 days
Litter size	3-6
Weaning age	14-21 days
Housing environment	
Temperature	15-18C
Relative humidity	45-55
Light-dark cycle	12-12h
Daily food intake	20-30g
Daily water intake	80-150ml
Surface area	277 cm2
Routes of drug administration	Oral Subcutaneous Intramuscular Intraperitoneal
Volume of drug administration	0.25-2 ml/kg body weight

Hamster (Mesocricetus auratus)	
Body temperature	37.4C
Age at sexual maturity	6 weeks
Mating age	6 weeks
Estrus cycle	4 days
Gestation period	16 days
Litter size	7-9
Weaning age	21 days
Housing environment	
Temperature	21-24 C
Relative humidity	40-60
Light-dark cycle	12-12h
Daily food intake	10-15 g
Daily water intake	8-12 ml
Surface area	64 cm2 ■
Routes of drug administration	Oral Subcutaneous Intramuscular Intraperitoneal
Volume of drug administration	0.25-2 ml/kg body weight

Figure 5. Picking the Rat by the tail to remove it from the cage.

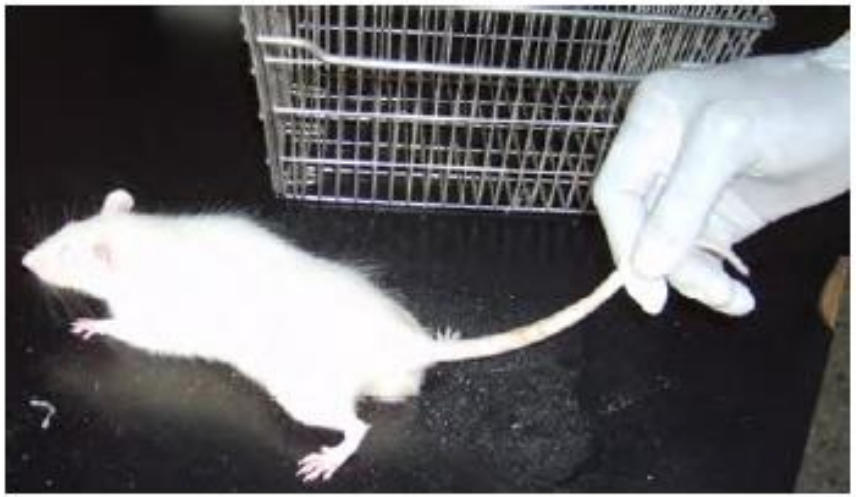


Figure 6. Rat placed on the flat surface of the laboratory

Figure 8. Gathering the scruff (loose skin over the neck) with the index finger and thumb by the mandible.

طرق الحقن في الحيوانات المختبرية

الحقن في الوريد intravenous

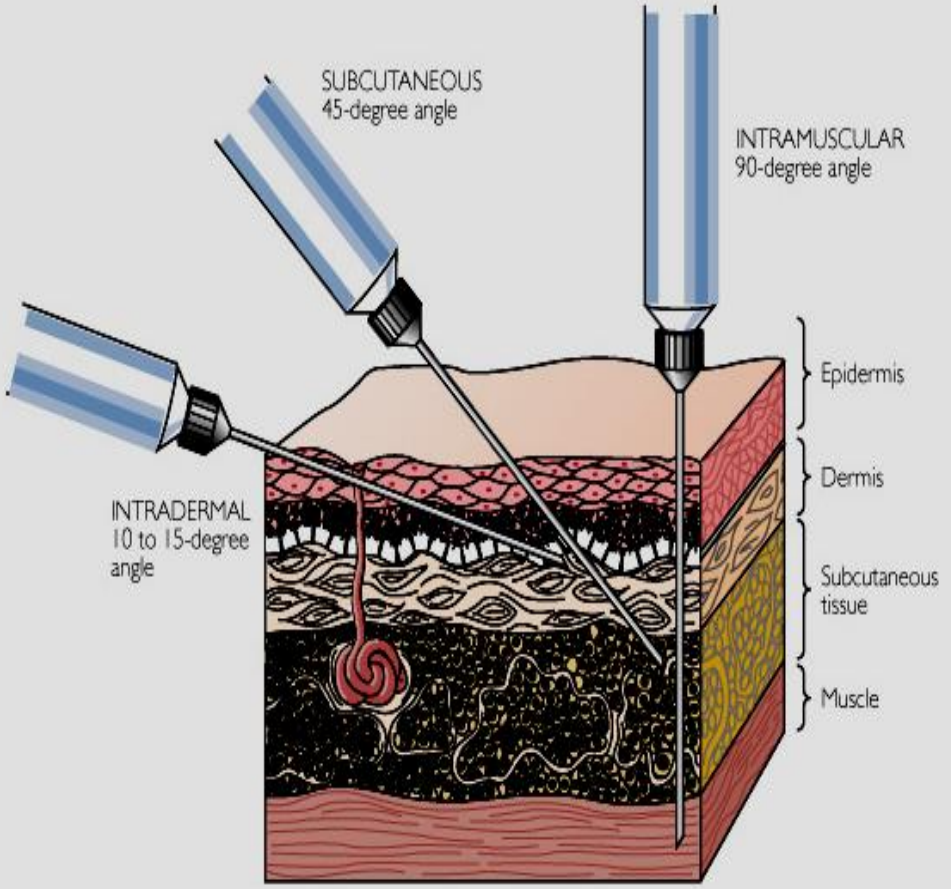
الحقن في البريتون intraperitoneal

الحقن تحت الجلد subcutaneous

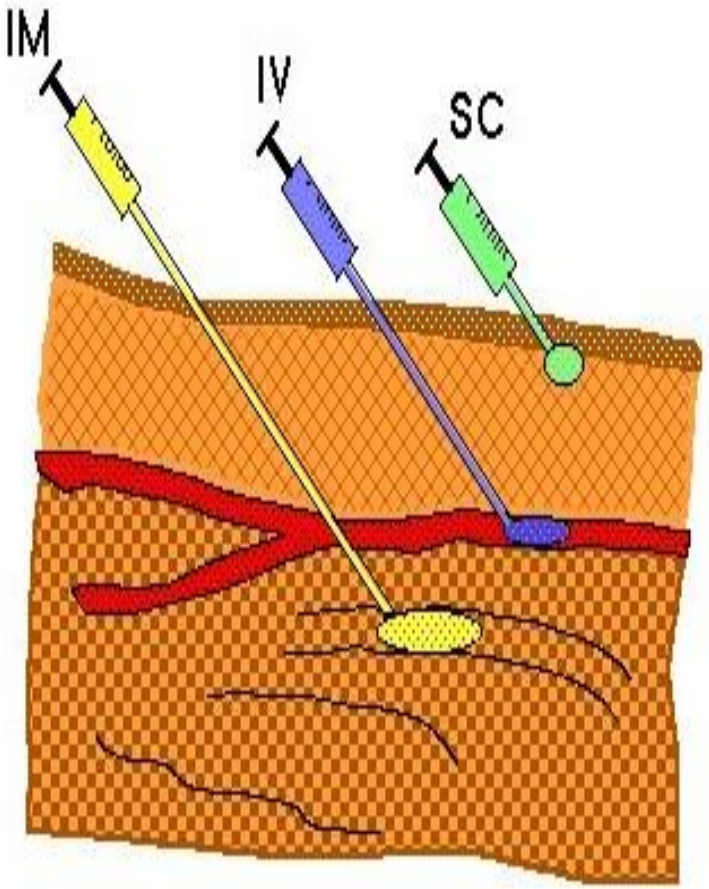
الحقن في العضلة intramuscular

Parenteral Route

The act of introducing a liquid into the body by means of a needle and syringe. Injections are designated according to the anatomic site involved. The most common injections are intraarterial, intradermal, intramuscular, intravenous, and subcutaneous.



Injection into skin. (Chester, 1998)



iagram Showing IV, IM, and SC Injection


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Figure 10. Restraining the rat by the scruff with a towel sandwiched between the hand and animal.

Figure 13. Injecting the test solution into the oesophagus of the rat by pushing down the plunger of the syringe.


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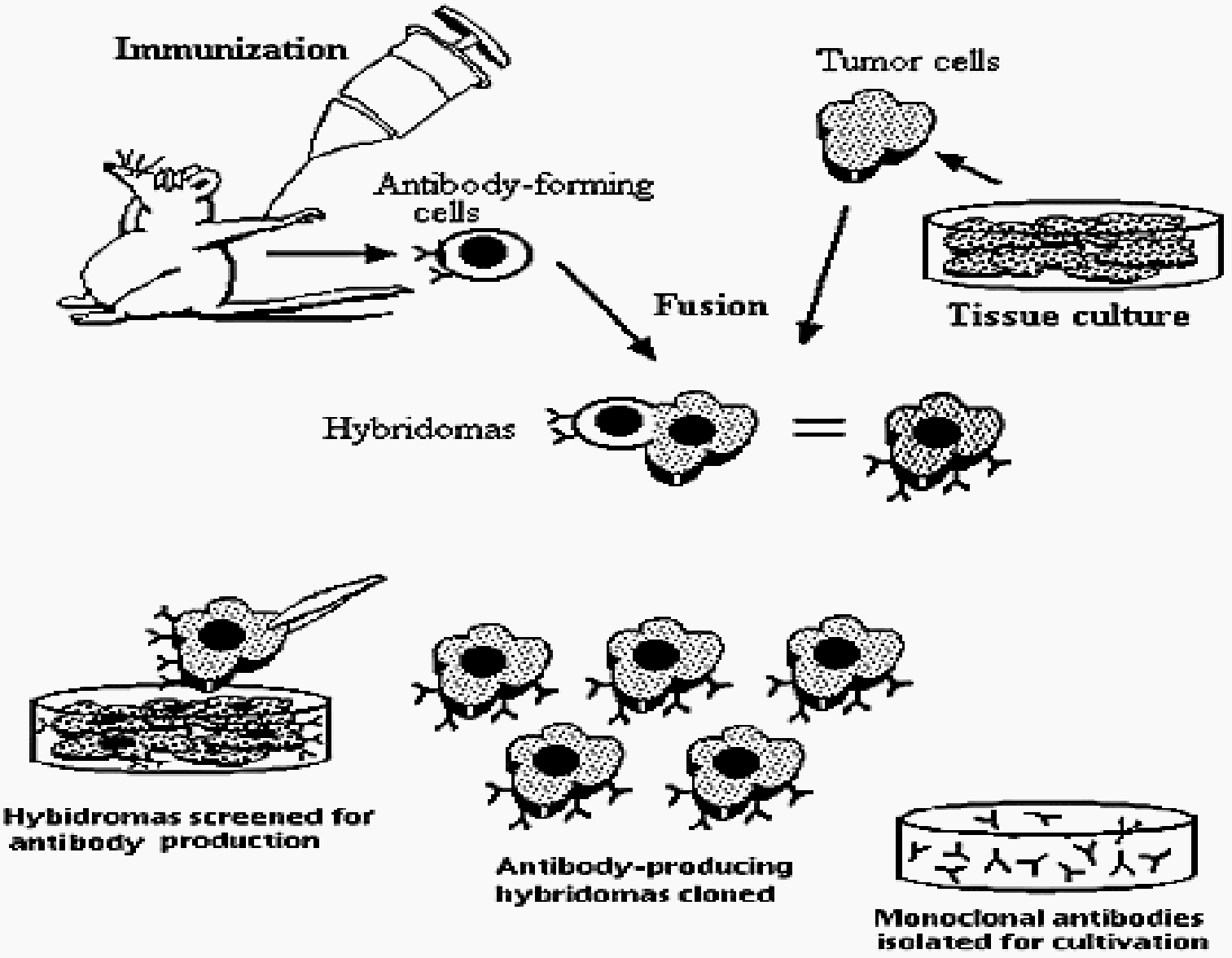

Monoclonal Antibody Production