

LIST OF VETERINARY PROCEDURES WHICH ARE USUALLY PERFORMED AT VARIOUS UKZN ANIMAL FACILITIES

PROCEDURE DESCRIPTION	Mammal, frogs, crabs	Reptile (except frogs)	Internal animal housing facilities at UKZN				External animal housing facilities that request approval from UKZN AREC	
	Procedure code (UKZN)		BRU (Westville)	Animal House (PMB)	Ukulinga farm	Marine and Fresh Water Research	K-RITH	NBI
1. Animal*								
Animal handling	*H	*H	X	X	X	X	X	X
2. Anaesthesia								
Inhalation (Scheduled drugs)	*AIH	SAIH	X	X			X	
Injection anaesthesia (Scheduled drugs)	*AIN	SAIN	X		X		X	
Immersion anaesthesia (tricaine methane sulfonate, clove oil or shedule drugs) (frogs, fish, crabs)	*AIM					X		
Hypothermia anaesthesia	*AHY							
Local anaesthesia (Schedule drugs)	*ALO	SALO	X					
Injecting or local analgesia/ pain killers (can include schedule drugs)			X		X			
3. Sampling of body fluids: Bleeding								
Cardiac puncture under anaesthesia	*BCP		X	X	X		X	X
From peripheral vessels (orbital sinus, tail clipping, toe clipping, tail bleeding) (mice, rats, hamsters, guinea-pigs, crabs) or dorsal aorta (fish)	*BPV, *HPV	SBTNC	X	X		X	X	X
Surgical approaches e.g. catheter or jugular vein or femoral artery (Rats, guinea-pigs, farm animals, pigs)	FBJV		X		X		X	X
Terminal procedures: using anaesthetise animal- posterior vena cave, dorsal aorta or axillary vessels	*BTP		X	X				
4. Sampling of body fluids: Other								
Ascites fluid collection (IP injection of pristane followed by cells, abdominal swelling, tap ascites fluid from abdominal)	*AP		X					X
Macrophage collection (mice, rats, hamsters)	*BMC, *MC		X					X
Polymorphonuclear leukocyte collection	*PLC							
Bladder catheterisation (rats, guinea-pigs, rabbits)	*BC, *SCR, *BBC		X					
5. Injections								
Subcutaneous	*ISQ, *ISO	SISQ	X	X	X	X	X	X
Intravenous: Caudal (tail), lateral marginal (inner thigh), dorsal metatarsal (leg), sublingual (tongue), penile (penis)	*IIV		X		X	X	X	
Intraperitoneal	*IIP	SIIP	X	X			X	X
Intramuscular	*IIM		X	X	X		X	X
Intradermal	*IID		X					
Intragastric (oral)	*IIG		X				X	
Footpad (elephant shrews, mice)	*IFP							
Dorsal lymph sac (frogs)	*IDL							
Superovulation (frogs)	*ISO							
Routine vaccinations of farm animals	FIIM, FIIV, FIMP, FISO				X			
6. Surgical procedures								
Abdominal surgery to harvest oocytes (frogs)	*SHO							
Anterior neck- intratracheal injections, thyroidectomy (elephant shrews, mice, rats, hamsters)	*SAN							
Anterior neck- intubation procedures and vein catheterisations (rodents and pigs)	*SAN		X				X	
Thymectomy (removal of thymus) (elephant shrews, mice)	*STH							
Intrathymic injection (elephant shrew, mice)	*SIT							
Abdominal surgery and organ biopsies (elephant shrews, mice, rabbits)	*SA, *SAS		X					
Popliteal lymph node injection (incision in poplitea fossa behind knee joint to inject lymph node)	*SPL							
Skin grafting (mice)	*SSG		X					
Vasectomy (transgenic mice procedures, feral cats and dogs)	*STP							
Transgenic mice: Reimplantation by injecting oviduct	*STP							
Transgenic mice: Tail removal for DNA analyses	*STP							
Cannulation of femoral vessels	*SFV							
Catheterisation of vein (jugular) (guinea-pigs, farm animals, pigs)	FBCV		X					
Castration (elephant shrews, mice, rats, hamsters)	*SCR							
Rumen fistulation and digestive tract cannulation (farm animals)	FRC				X			
7. Surgical procedures exclusive to farm animals and reptiles								
Tail docking of farm animals (lambs) using rubber rings	FHTD				X			
Disbudding (horns of cattle) after anaesthesia	FHD							
Dehorning and trimming horns	FHD				X			
Bloodless castration: Burdizzo (large pliers to crushing blood vessel inside scrotum), rubber rings (cattle, sheep)	FHCCR, FHSCR				X			
Surgical castration of cattle, sheep	FHSCR				X			
Implants	FIMP	SIRT		X				
Electroejaculation (bulls and rams)	FLJC, FLJS							
Training ram for semen collection, by hormone injections of females	FLJT							

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8. Physiological measurements								
Respirometry (rodents and birds, reptiles, crabs)	*PRT, *PR	SPRT		X		X		
Temperature: probe in rectum of animal (rodents and birds)	*PT	SPST	X	X	X			
Thermoregulation (egg shell)	*PT			X				
Food consumption- metabolic cages (mice, rats)	*PF, *MF	SPF	X	X	X	X		
Weight measurements			X		X	X	X	X
Total body water by tritium dilution (frogs, elephant shrews, mice, rats, reptiles)	*PW, *MW	SPW		X				
Urine (indirectly) using collection containers (mice, rats)	*PU, *MU		X	X	X			
Non-shivering thermogenesis (SQ injection of norepinephrine) (mice, rats, rabbits, birds)	*PS, *MS, *PA			X				
Activity measurements (response to temp, photoperiod ect.) (mice, rats, crabs)	*PA, *MA	SPA	X	X	X	X		
Rate of water loss (reptiles)		SPWL		X				
X-Ray techniques (mice, rats)	*PX, *MX							
9. Euthanasia								
Overdose of inhalant (Schedule drugs)	*EOD		X	X		X	X	
Injectable anaesthetic (including farm animals) Schedule drugs	*EIN, FECIN, FESIN	SEIN	X	X	X		X	
CO2 (mice, rats)	*ECO		X	X	X	X		X
Decapitation	*EDE		X	X		X		
Physical means by breaking the neck- anaesthetised and conscious	*EPM		X	X	X	X	X	X
Brain fixation by intracardiac perfusion	*EBP		X					
Brain destruction (cattle and crabs)	FECB					X		
Electrical stunning (farm animals)	FEST				X			
Head-to-back electrical stunning (farm animals)	FESTB							
<i>In situ</i> freezing (reptiles, crabs)		SEF				X		
10. Collecting and Capture wild animals								
Captured, removed and processed (wild birds, feral cats)	*C		X	X		X		
11. Identification of animals								
Ringling (birds)	*R			X				
Freeze branding of cattle (cryobranding)	FCIDF			X				
Ear-tagging (cattle, sheep)	FSIDG				X			
Ear notching of cattle	FCIDN							
Ear tattoos of cattle	FCINT							
12. General farm animal practices								
Crutching, dagging and face-wool removal (sheep)	FHC							
Shearing (sheep)	FHW				X			
Dipping (sheep, cattle, goats)	FHDI				X	X		
Drenching (farm animals)	FHDR				X			
13. Procedures not currently in the Approved Standard Protocols								
Creating clinical models: diabetes, infectious, stress, alzheimer, seizure prone, hypertension and obesity animal models	Non-coded		X					
Inplants (transponders) (mice, tenrecs) with or without anaesthesia drugs	Non-coded		X	X		X		
Vaginal smears (mice and rats)	Non-coded		X					
Use of pregnant animals (mice and rats)	Non-coded		X					
Use of pups (mice and rats)	Non-coded		X					
Ear clipping (mice, rats and feral cats)	Non-coded		X	X				X
Stereotaxic surgery: anaesthetised animal is injected a chemical in the medial forebrain bundle in the dominant hemisphere followed by suture to close the wound (rats)	Non-coded		X					
Behavioural test: Single prolonged stress by restraining animal for a period of time (rats)	Non-coded		X					
Behavioural test: Forced swim stress (rats)	Non-coded		X					
Behavioural test: Contextual freezing measurement (Animal placed in conditioning chamber, given a foot shock (0.8mA, 4S) and removed, follow-up fear response is measured when returned to chamber relating to associated fear memory) (rats)	Non-coded		X					
Behavioural test: EPM test: Maze test to score animals memory if he has visited a particular arm or re-visit the same arms (rats)	Non-coded		X					
Behavioural test: Open field test, testing activity in novel environment (rats)	Non-coded		X					
Behavioural test: Forelimb akinesia (step) test: Step length test by handing animal by its torso measuring the step taken by each forelimb	Non-coded		X					
Behavioral test: Limb use asymmetry test: Cyclinder test- rats use of limbs under free behavioural conditions	Non-coded		X					
Behavioral test: Following stereotaxic surgery the study assess the effectiveness of the submaximal dose of 6-OHDA used to lesion the hemisphere, contralateral to the preferred direction of rotation. Access impact and dose used for lesioning and determine the success of the surgical procedure (rats)	Non-coded		X					
Blood pressure measurement using tail cuff- animal place din warming chamber and blood presurre measure using tail cuff (rats).	Non-coded		X					
Exposure to varying sound frequencies and intensities	Non-coded			X				
Exposure to lab prepared airbourne chemical scent or pathogenic compounds	Non-coded		X	X			X	

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Holding of captured animals	Non-coded			X				
Holding of crabs and aquacultured animals (fish, abalone and mussels)	Ho^					X		
Handling of crabs	Ha^					X		
Transportation of captured or laboratory animals (crabs, mice, guinea-pigs, rats)	T^		X	X		X		X
Acclimitization of crabs and other aquacultured animals e.g. fish, abalone, mussels	Acc^					X		
Record keeping and documentation (crabs, but recommended for all species)	RKD^					X		
Euthanasia: Bubbling CO2 in water (crabs)	Non-coded					X		
Euthanasia: anaesthesia by chemically injecting shedule drugs followed by immersion in boiling water (crabs)	Non-coded					X		
Euthanasia: Submersion overdose of anaesthetics (crabs)	AES^					X		
Euthanasia: Brain destruction by crushing, pithing or carapace crushing (crabs)	AECO^					X		
Release of captured animals (only permissable under appropriate DAFF licencing) (crabs)	RC^					X		
Disposal of dead animals (crabs, but recommended for all species)	DC^					X		
Semen training by massaging abdomen (roosters)	Non-coded				X			
Force feeding (roosters)	Non-coded				X			
Applying a wing band ID tag to chickens	Non-coded				X			
Collecting blood from chicken wing blood vessel	Non-coded				X			
Euthanasia: Hypothermia euthanasia (fish) (ice slurry)	Non-coded					X		
Handling of aquacultured animals (fish, abalone, mussels)	Non-coded					X		
Respirometry of aquacultured animals (fish, abalone, mussels)	Non-coded					X		

^ Unofficial coding from draft protocols

Animal codes		
Frogs	A*	
Elephant shrews	E*	
Mice	M*	
Rats	R*	
Hamsters	H*	
Guinea-pigs	G*	
Rabbits	L*	
Wils Birds	BW*	
Domestic Birds	BD*	
Cattle, sheep, goats and other farm animals	F*	
Bats	C*	
Reptiles: chameleons, tortoises, snakes		S*