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Volume 10 (2); June 25, 2020 [[Booklet](#)]



Review

Surgical Treatment of Canine Femoral Fractures – a Review.

Lovrić L, Kreszinger M and Pećin M.

World Vet. J. 10(2): 137-145, 2020; pii:S232245682000018-10

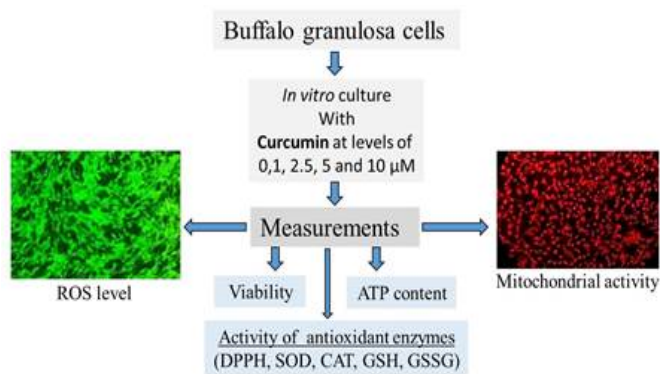
DOI: <https://dx.doi.org/10.36380/scil.2020.wvj18>

ABSTRACT

Femoral fractures in dogs and cats account for 20-25% of all fractures for which surgical treatment is a method of choice. Surgical treatment is based upon biological principle of open anatomic reduction and osteosynthesis. Arbeitsgemeinschaft für Osteosynthesefragen (AO) classification of fractures has a widespread use in general. Present study discusses different methods of osteosynthesis and healing process based on special cases managed in a certain small animal clinic in Hollabrunn, Austria, in 2016. The level of femoral fracture and the chosen method of osteosynthesis are shown respectively. According to available literature and author's personal observations during externship period, the best results have been achieved using minimally invasive surgery. The surgical method choice depends on type, level and complexity of fracture, surgical skills and equipment of the team providing care respectively.

Key words: Dog, Femur, Fracture, Osteosynthesis.

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Ghanem N, Amin A, Saeed AM, Abdelhamid ShM, El-Sayed A, Farid OA, Dessouki ShM and Faheem MS (2020). Effects of Curcumin Supplementation on Viability and Antioxidant Capacity of Buffalo Granulosa Cells under *In Vitro* Culture Conditions. *World Vet. J.*, 10 (2): 146-159.

Research Paper

Effects of Curcumin Supplementation on Viability and Antioxidant Capacity of Buffalo Granulosa Cells under *In Vitro* Culture Conditions.

Ghanem N, Amin A, Saeed AM, Abdelhamid ShM, El-Sayed A, Farid OA, Dessouki ShM and Faheem MS.

World Vet. J. 10(2): 146-159, 2020; pii:S232245682000019-10

DOI: <https://dx.doi.org/10.36380/scil.2020.wvj19>

ABSTRACT

The current study was conducted to investigate the possible protective effect of curcumin supplementation on buffalo granulosa cells (GCs) under *in vitro* culture condition. Buffalo ovaries were collected from local abattoir in physiological saline solution and transported directly to laboratory. Follicular fluid containing GCs and cumulus-oocyte-complexes were aspirated from antral follicles with diameter 2-8 mm. The collected GCs were seeded (Approximately 375,000 viable cells) in an 8-well culture plate containing tissue culture medium-199

(TCM-199)

and kept at 37 °C in a humidified atmosphere of 5% CO

²

. The curcumin was supplemented to TCM media at levels of 1, 2.5, 5 and 10 µM for 24 and 48 h

at 37 °C or kept without treatment as control group. The viability of cells was determined using the trypan blue test. Intracellular reactive oxygen species (ROS) level was assessed by measuring the fluorescent intensity of 6-carboxy-2',7'-dichlorodihydro fluorescein diacetate (H

²

DCFDA). In addition, mitochondrial activity of GCs was determined. The results of the present study indicated that the viability of GCs under culture conditions was significantly decreased in groups treated with 1, 2.5, 5 and 10 µM curcumin (86.0%, 86.26%, 83.0% and 74.0%, respectively) compared to control group (93.60 %). The two groups of granulosa cells cultured with 2.5 and 5 µM curcumin recorded greater level of mitochondrial activity than the groups cultured with 1

µM and 10

µM curcumin.

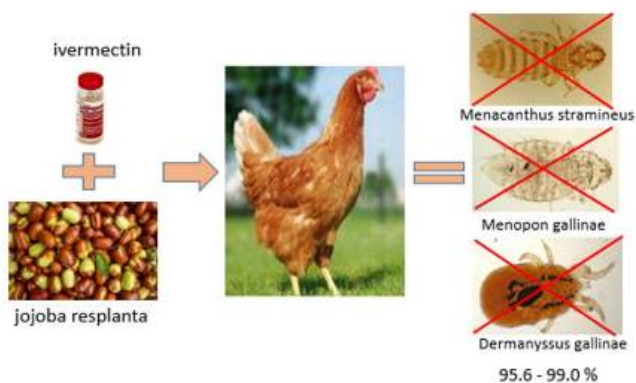
Moreover, there was a significant

increase in ROS level in group cultured with 10 µM curcumin, compared to control and other

experimental groups. The enzyme activity of catalase (CAT), superoxide dismutase (SOD), glutathione (GSH) and 1, 1-diphenyl-2-picrylhydrazyl (DPPH) was increased after treating *in vitro* cultured granulosa cells with 5 µM of curcumin. However, the enzymatic activity of CAT, SOD, GSH and DPPH was declined significantly 48 h post-curcumin treatment. In conclusion, supplementation of curcumin at low concentration (2.5 µM) for 24 h to *in vitro* cultured GCs improved intracellular metabolic activity and antioxidant protective system, whereas it could not sustain this action for 48 h. Moreover, supplementation of curcumin at high concentration and for long duration may negatively affect viability of GCs under *in vitro* culture condition via induction of oxidative stress

Key words: Antioxidant, Buffalo, Granulosa cells, Oxidative stress, Viability.

[Full text- [PDF](#)] [[XML](#)] [[Google Scholar](#)] [[Crossref Metadata](#)]



Arisova GB (2020). Efficacy of Ivermectin-Based Drugs against Ectoparasites in Broiler Chickens. *World Vet. J.*, 10 (2): 160-164.

Research Paper

Efficacy of Ivermectin-Based Drugs against Ectoparasites in Broiler Chickens.

Arisova GB.

World Vet. J. 10(2): 160-164, 2020; pii:S232245682000020-10

DOI: <https://dx.doi.org/10.36380/scil.2020.wvj20>

ABSTRACT

This research aimed to study the efficacy of two different ivermectin-based drugs against ectoparasites of chickens. In total 1200 Highsex brown chickens aged 1-1.5 years were examined to determine the prevalence of ectoparasites among chickens. The diagnosis of ectoparasites in chickens was established using clinical and entomological methods. For studying drug efficacy, 20 chickens were selected and divided into two groups (experimental and control) of 10 birds each according to the principle of analogs. A prepared ivermectin-based drug consisting of active substance ivermectin and the auxiliary substances including jojoba Resplanta, diethylene glycol monoethyl ether, Tween-80, benzyl alcohol, and purified water, was administered to the experimental group at a dose of 0.4 ml/L of drinking water (400 µg ivermectin per 1 kg of body weight) twice with a 24-hour interval. The treatment was repeated after 14 days. The control group was administered another drug based on ivermectin in the same dose and manner as the drug given in the experimental group. The efficacy of the drugs was determined by counting the number of ectoparasites per chicken before and after treatment. The clinical condition of the birds was monitored from day 1 to day 28 of the experiment. To evaluate the physiological state of chickens, blood and biochemical tests were performed on day 28 of the experiment. The results revealed that the prevalence of infection with *Menacanthus stramineus*, *Menopon gallinae*, and *Dermanyssus gallinae* in chickens was 34.5%, 21.5%, and 12%, respectively. The number of parasites/chicken after treatment between the experimental and the control group was significantly different. The efficacy of the drugs against ectoparasites in the experimental and control group was 95.6-99.0% and 85.1-91.1%, respectively. The blood tests showed that hematological and biochemical parameters were within physiological norms for both groups. Also, a pharmacokinetic study was performed on 18 ISA cross, 40-day-old chickens administered orally with the test drug at the same dose. The results revealed that ivermectin reached maximum concentration at 30-60 minutes after administration to the bird. After 1 hour, the concentration of the active substance of the drug in the blood serum of chickens decreased sharply and reached the limit of quantification by 12-24 hours. In conclusion, this drug can be recommended for use in poultry as an effective and safe drug for the treatment of arachnoentomosis in birds.

Key words: Chickens, Ectoparasites, Ivermectin.

[Full text- [PDF](#)] [[XML](#)] [Google Scholar] [[Crossref Metadata](#)]



Abouseenna MS, Sayed RH, Darwish DM and Saad MA (2020). Sensitivity of Lateral Flow technique for Evaluation of Inactivated Rift Valley Fever Virus Vaccine in Comparison with Serum Neutralization Test. *World Vet. J.*, 10 (2): 165-169.

Research Paper

Sensitivity of Lateral Flow technique for Evaluation of Inactivated Rift Valley Fever Virus Vaccine in Comparison with Serum Neutralization Test.

Abouseenna MS, Sayed RH, Darwish DM and Saad MA.

World Vet. J. 10(2): 165-169, 2020; pii:S232245682000021-10

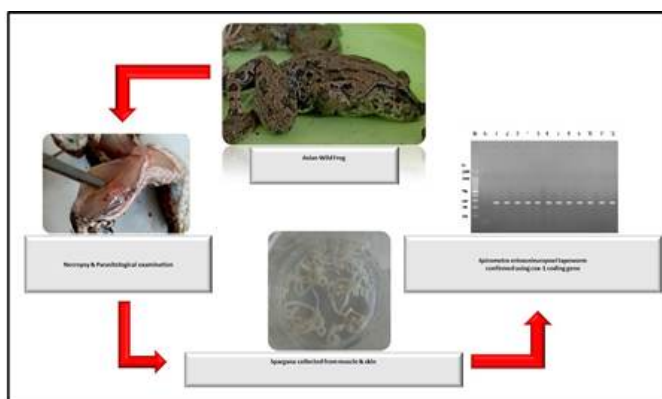
DOI: <https://dx.doi.org/10.36380/scil.20209.wvj21>

ABSTRACT

Rift Valley Fever (RVF) is a zoonotic mosquito-borne bunyaviral disease associated with high abortion rate, neonatal death, fetal malformations in ruminants, and mild to severe disease in human. The vaccination has significantly reduced the abortion of ewes and mortality of newborn lambs during an outbreak, and induced immunity in cattle. The evaluation of inactivated RVF vaccine required in vivo and in vitro techniques. The present research aimed to evaluate the sensitivity of the Lateral Flow Device (LFD) in comparison with Serum Neutralization Test (SNT) by reference sera to determine the humoral immune response of the sheep vaccinated with an inactivated RVF vaccine. Three batches of inactivated RVF vaccine were inoculated in three sheep groups. Then samples of their sera were collected weekly, and tested by SNT and LFD. It was found that the sensitivity of LFD at a serum dilution of 1:128 was 95%, while SNT carried out at the fourth week after the vaccination showed that antibody titers was 32,64 and 32. On the other hand, LFD had positive results at dilutions of 1:32, 1:128 and 1:64 for the vaccine batches 1, 2 and 3 respectively. These findings suggest the possibility of using LFD for detection of the immune response of vaccinated sheep to the inactivated Rift Valley Fever Virus vaccine, and it could be improved to be more quantitative in future.

Key words: Lateral flow device, Rift valley fever virus, RVFV inactivated vaccine, Vaccine evaluation

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Yudhana A, Praja RN, Yunita MN and Wardhana DK (2020). Molecular Evidence of *Spirometra erinaceieuropaei* in Asian Wild Frogs (*Rana rugulosa*) from Banyuwangi City, Indonesia. *World Vet. J.*, 10 (2): 170-174.

Research Paper

Molecular Evidence of *Spirometra erinaceieuropaei* in Asian Wild Frogs (*Rana rugulosa*) from Banyuwangi City, Indonesia.

Yudhana A, Praja RN, Yunita MN and Wardhana DK.

World Vet. J. 10(2): 170-174, 2020; pii:S232245682000022-10

DOI: <https://dx.doi.org/10.36380/scil.2020.wvj22>

ABSTRACT

The tapeworm *Spirometra erinaceieuropaei* is the most frequently species which found in wild frog and causing a serious parasitic zoonosis known as sparganosis. This study aimed to provide molecular evidences of spargana collected from wild frogs which used as food and contribute to provide important implication for preven-tion and control of sparganosis. A total of 185 Asian wild frog (*Rana rugulosa*) samples were selected from food markets in Banyuwangi City, Indonesia. Molecular identification based on spargana that were collected and coding gene of mitochondrial cytochrome c oxidase 1 (*cox1*

) using Polymerase Chain Reaction (PCR) method. Spargana were found in 9.1% (17/185) of the frogs and PCR analysis results identified all specimens belonging to the species

S. erinaceieuropaei

, therefore indicated that

S. erinaceieuropaei

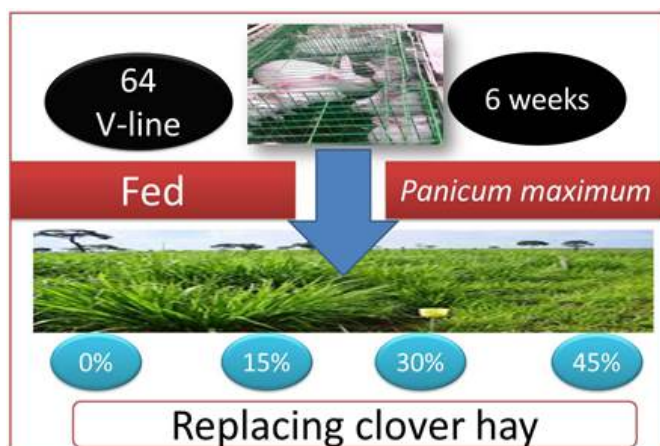
is the major causative agent of sparganosis from frogs which sold as food in markets. These findings can be useful to the molecular diagnosis and control of

Spirometra

infections in humans and animals.

Key words: Asian wild frog, *Rana rugulosa*, Sparganosis, *Spirometra erinaceieuropaei*.

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Refaie AM, Salama WA, Shams El-deen AE, Beshara MM, Khalil FS, and Alazab AM (2020). Influence of *Panicum maximum* Replacement of Clover Hay on the Performance of Growing Rabbits. *World Vet. J.*, 10 (2): 175-182.

Research Paper

Influence of *Panicum maximum* Replacement of Clover Hay on the Performance of Growing Rabbits.□

Refaie AM, Salama WA, Shams El-deen AE, Beshara MM, Khalil FS, and Alazab AM.

World Vet. J. 10(2): 175-182, 2020; pii:S232245682000023-10

DOI: <https://dx.doi.org/10.36380/scil.2020.wvj23>

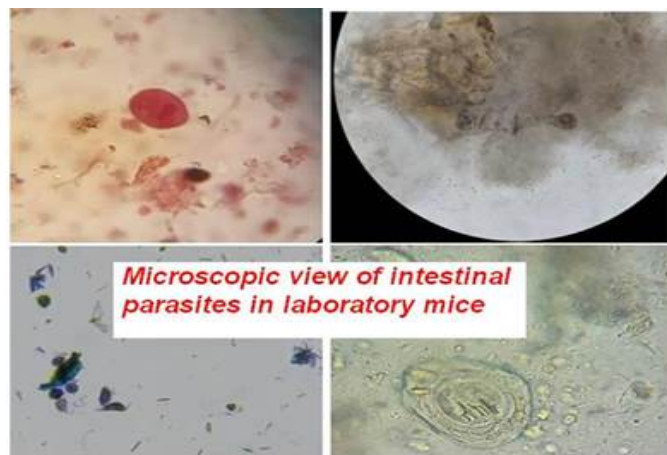
ABSTRACT

Two experiments were performed to evaluate *Panicum maximum* (Pm) and its effect on rabbits'

growth performance. In the first experiment, six adult V-line male rabbits were used to determine the digestible energy in Pm by continuously feeding these 120 gram (g) Pm and 120 g clover hay for 3 days, and then the digestible energy was recorded 1959 kcal /kg. In second experiment, a total of 64 rabbits of V-line, 6 weeks old with average weight of 702 g, were divided into 4 groups, each in 4 replicates (4 rabbits/replicate), the first fed basic diet; control (T1), the 3 groups fed on the diet contained Pm to replace clover hay as a percentage of 15%, 30% and 45%, which corresponds to 4.5%, 9% and 13.5% of the total diet; which represent T2, T3, and T4, respectively. Rabbits were fed ad libitum with pellet feed until the end of growth attempt (14 weeks). The results indicated that the proximate analysis of Pm was 11.65% crude protein, 2.67% crude fat, and 30.66% crude fiber. Rabbits in T4 group significantly had the best final weight, daily weight gain, and Feed Conversion Ratio FCR. All groups had high crude protein digestibility except the group fed T3 diet. The total number of cecum bacterial count was improved in all tested groups. In conclusion, feeding growing rabbits with Pm up to 45% instead of clover hay achieved higher growth performance and lower cecum coliform bacteria.

Key words: Cecum bacteria, Growth performance, Panicum maximum, Rabbits.

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Alkhashab FMB, Alnuri AIJ, and Al Juwari RSA (2020). Detecting intestinal parasitic infections in laboratory mice. *World Vet. J.*, 10 (2): 183-189.

Research Paper

Detecting intestinal parasitic infections in laboratory mice.

Alkhashab FMB, Alnuri AIJ, and Al_Juwari RSA.

World Vet. J. 10(2): 183-189, 2020; pii:S232245682000024-10

DOI: <https://dx.doi.org/10.36380/scil.2020.wvj24>

ABSTRACT

A total of 150 Laboratory mice divided into four age groups consisted of 4, 6, 8 and 10 weeks old were used in this study by placing each animal individually in a special cage within the period between October 2019 to the end of February 2020 at the Research and Graduate Studies Laboratory University of Mosul, Iraq. This study aimed to investigate intestinal parasitic infections in laboratory mice, stool samples were collected for 150 laboratory mice and periodically to perform laboratory tests that included direct slide examination and using the concentration method to detect eggs of worms and cysts of protozoa parasites, the culture of parasites also was used by prepared manufactured culture media to develop parasites. The infection was diagnosed in 136 (90.66%) mice while the rest 14 (9.33%) mice did not record any parasitic infection (clean). The higher rate of infection 58% was reported for *Trichomonas muris* followed by

Entamoeba muris

and

Giardia muris

which found in 22%, 15.3% respectively. In the other hand the infection with

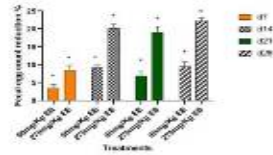
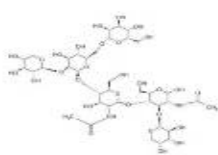
Hymenolepis diminuta

was recorded in 16% from infected cases by identifying the eggs of this worm in stool samples.

This study shows the high rate of parasites infection in laboratory mice which might have negative effects on the result of previous scientific researches, in addition to wasting effort, time, and materials.

Key words: *Entamoeba muris*, *Giardia muris*, Laboratory mice, *Trichomonas muris*

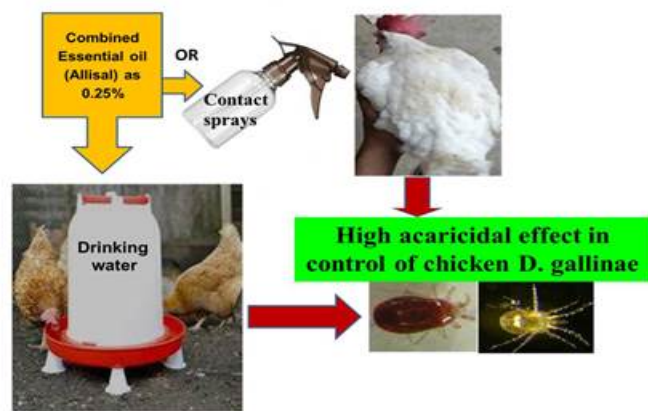
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Mean enzyme activity of encapsulated bromelain in digestive organs of goat at different time points

Organ	Enzyme activity after drug administration (Units/ml)				p-value
	4 hr	8 hr	12 hr	16 hr	
Reticulum	0.124±0.062	0.117±0.073	0.106±0.058	0.034±0.016	0.408
Rumen	0.665±0.361	3.11±0.217	1.146±0.288	0.251±0.117	<0.0001
Omasum	0.603±0.141	2.128±0.257	1.808±0.451	0.397±0.186	0.001
Abomasum	0.191±0.018	0.398±0.151	1.446±0.294	0.345±0.161	<0.0001
Small intestine	0.002±0.0001	0.398±0.124	0.339±0.087	0.074±0.034	0.099
Large intestine	0.001±0	0.018±0.004	3.142±0.218	0.402±0.18	<0.0001
Overall activity	1.586±0.582	6.169±0.826	7.987±1.306	1.503±0.69	0.001
p-value	0.007	<0.0001	<0.0001	0.064	

Wasso S, Kagira J and Maina N (2020). Toxicity, Anthelmintic Efficacy and Gastrointestinal Tract of Small East African Goats. *World Vet. J.*, 10 (2): 190-198.



Amer AMM, Amer MM, Mekky HM and Fedawy HS (2020). Effect of Combined Plant Essential Oils on *Dermanyssus gallinae*: *In vitro* and *in vivo* study. *World Vet. J.*, 10 (2): 199-206.

EMBRYOTOXICITY, ACUTE AND SUBCHRONIC ORAL TOXICITY OF ANTIPARASITIC DRUG



Fetuses of rats, coloured according to the Dawson's method. Oedematous areas of the skeleton are painted red-violet, soft tissues are discoloured



Sagittal cuts of fetuses of rats (Wilson's method, modified by A.P. Dzhan)

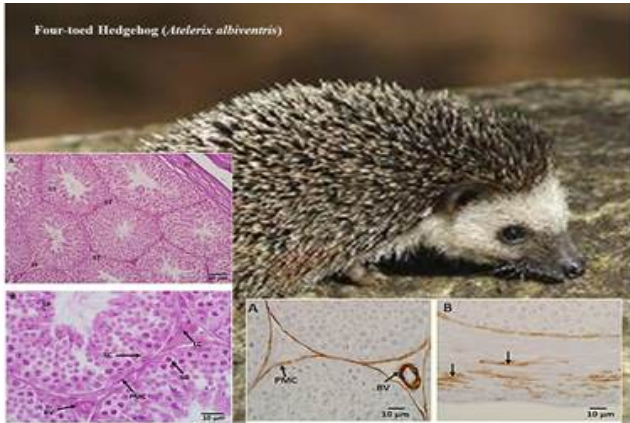
Group	Number of mice	Dose, mg/kg	Dose, mg/100g	Dead	Survived
1 experimental	10	2000	0.25	10	0
2 experimental	10	1000	0.25	8	2
3 experimental	10	500	0.25	3	7
4 experimental	10	100	0.25	2	8
1 experimental control	10	H ₂ O (Steril)	0.25	8	10

The results of the experiment to determine acute oral toxicity in mice

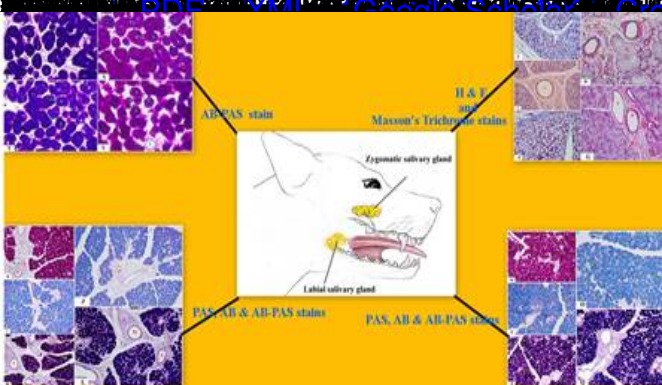
No.	Organ	Control	Dose, mg/kg		
			100 mg/kg	500 mg/kg	1000 mg/kg
1	Liver	4.42 ± 0.86	4.32 ± 0.32	4.04 ± 0.20	4.28 ± 0.35
2	Kidney	0.89 ± 0.19	0.87 ± 0.03	0.84 ± 0.04	0.89 ± 0.02
3	Spleen	0.25 ± 0.04	0.24 ± 0.11	0.25 ± 0.04	0.24 ± 0.04
4	Lungs	0.41 ± 0.3	0.34 ± 0.12	0.37 ± 0.08	0.38 ± 0.11
5	Heart	0.37 ± 0.1	0.32 ± 0.03	0.32 ± 0.02	0.27 ± 0.07

Mass coefficient of rat organs 10 days after the last drug administration

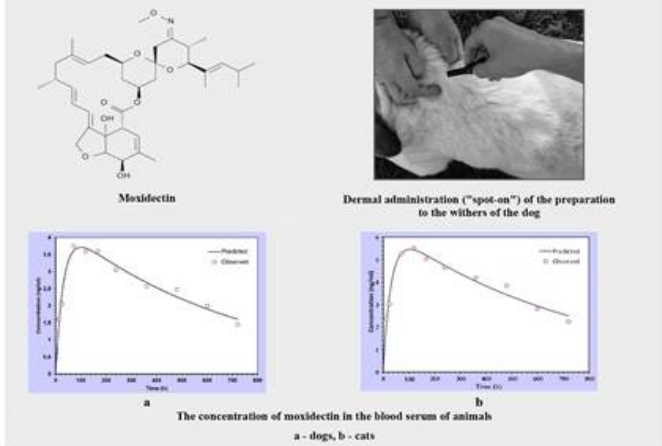
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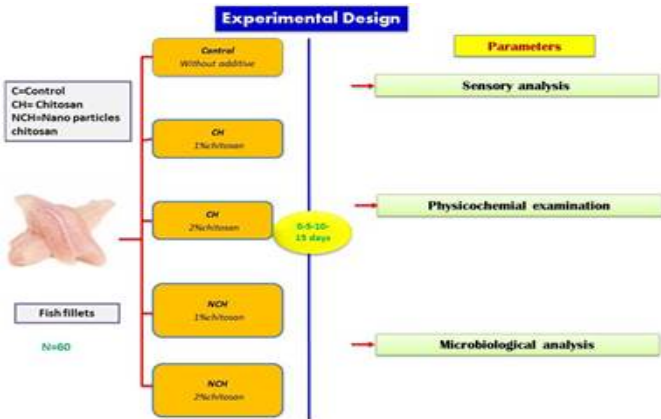
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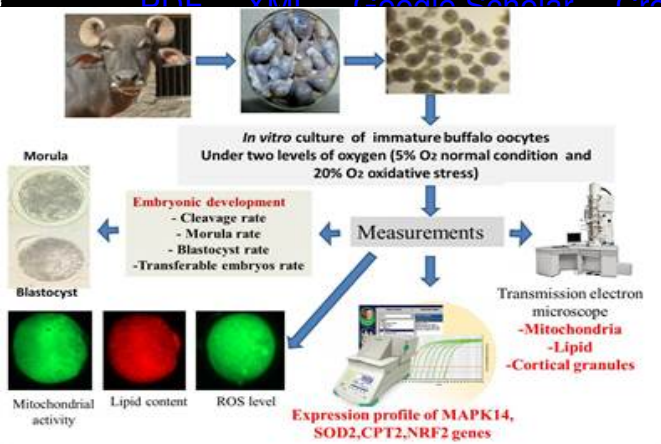
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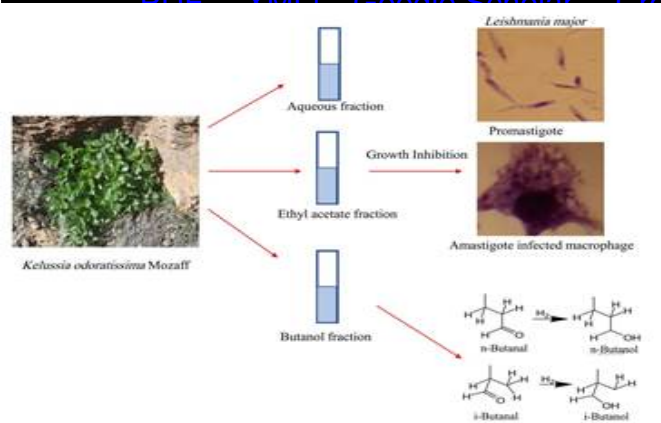
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Abd-El Rahman Ahmed D, Ghanem N, Dessouki ShM, Faheem MS, Gad AY and Barkawi AH (2020). Developmental Competence of Buffalo Oocytes Cultured Under Different Oxygen Tensions after Selection with Brilliant Cresyl Blue. *World Vet. J.* 10 (2): 246-253.



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