Snakeheads commonly called murrels are one among the best known air breathing freshwater edible fishes of Southeast Asia. For the past few decades, emphasis on marine animals like sponges and other fishes are given due importance. But freshwater animal drugs are still neglected. In view of this, the present investigation was carried out to evaluate the therapeutic potential of selected Indian snakeheads, Channa striatus and C. marulius.

The fatty acid profiling of C. striatus and C. marulius crude extract revealed the presence of Palmic acid (16:0), Margaric acid (17:0), Stearic acid (18:0), Oleic acid (18:1), Linolenic acid, Alpha Linolenic acid (18:3), Morotic acid (18:4), DHA and EPA in varying composition.

In the carrageenan induced anti-inflammatory study, both the doses of C. striatus and C. marulius (LD and HD) tested caused a significant (p<0.001) and marked reduction in paw edema compared to induced group at each time point measured. Indomethacin also impaired the edema formation but this anti-inflammatory effect was much stronger with reduction in paw volume of about 71%.

In cotton pellet model, high dose of C. striatus rendered 41.93% protection whereas low dose gave a protection of 21.70% only. In C. marulius treated groups, even the low dose rendered highest protection of 42.87% than the high dose of C. striatus. The protection rendered by standard was 52.62% and hence both doses of C. marulius were found to be effective.

Wound healing studies revealed faster healing upon topical application of C. striatus and C. marulius crude extract but the activity was maximal at the high dose applied. The wound was healed completely (100%) by 21st day in 10%
concentration of *C. striatus* whereas 100% healing was observed in 18\textsuperscript{th} day for standard as well as *C. marulius* treatment (both 5% and 10% concentration). Both the doses of *C. marulius* revealed faster healing of wounds than *C. striatus*.

The various amino acids present in the dehydrated powder of *C. striatus* and *C. marulius* was found to be aspartic acid, glutamic acid, asparagine, serine, glycine, threonine, arginine, alanine, cystine, tyrosine, histidine, valine, iso-leucine, phenyl alanine, leucine, lysine, proline and tryptophan in varying quantities.

In pyloric ligation ulcer model, oral pretreatment with *C. striatus* and *C. marulius* at a dose level of 400 mg/kg for 3 days remarkably prevented the adverse changes when compared with the induced group (38.90 ± 0.65) and reduced ulceration index to 6.78 ± 0.98 (82.57\% protection) and 6.31± 1.38 (83.79\% protection) respectively which is comparable to that of the standard drug omeprazole (ulcer index 3.50 ± 0.45; 90.10\% protection). The parameters like volume of gastric juice, total and free acidities, pH of gastric juice, carbohydrate and protein content were also analyzed in PL ulcer study, which revealed alterations in the untreated group whereas the standard drug treated group and the sample groups showed improvement in the health status of the animals.

In ethanol induced ulcer study, the percentage of protection for low and high dose of *C. striatus* was found to be 66.80\% and 81.91\% respectively, while the low and high dose of *C. marulius* was found to be 30.21\% and 58.01\% respectively whereas the standard showed 90.90\% protection. In this model, even the low dose of *C. striatus* rendered high protection than the high dose of *C. marulius*. The percentage protection rendered in the sample groups is in the order of omeprazole> CS HD > CS LD > CM HD > CM LD > Induced group.
In indomethacin induced ulcer study, reduced ulcer score (3.50 ± 0.45) registering higher protection was found in omeprazole treated group followed by high dose of *C. striatus* (7.16 ± 0.69; 79.63% protection) and high dose of *C. marulius* (8.38 ± 0.45; 76.17% protection). Like other two studies, induced group showed higher ulcer score. The percentage protection rendered in the sample groups is in the order of omeprazole> CS HD > CM HD > CS LD > CM LD > induced group.

In the FCA induced anti-arthritis study, the high dose of *C. marulius* (400 mg/kg) rendered 91.72% protection which is slightly lower than the reference standard indomethacin (92.86%). Both the doses of *C. marulius* (CM LD and HD) rendered a high protection than the *C. striatus* group. The paw volume decreased with an increase in the dosage. The paw volume was reduced gradually in the subsequent days. High enzymatic antioxidant (SOD, CAT, GPx and GST) level was recorded in all the groups and least values in the induced group, whereas the lipid peroxidation was high in the untreated induced group and all other sample groups and indomethacin treated groups showed less LPO levels.

The *in vitro* anti-diabetic activity was assessed as α - amylase activity and α - glucosidase activity for five different concentrations of *C. striatus* and *C. marulius*. There was a dose-dependent increase in percentage inhibitory activity against α-amylase and α - glucosidase activity. The least protein denaturing activity was recorded at 100 μg concentration (*C. striatus* - 8.33 ± 3.61% and *C. marulius* - 8.89 ± 3.84%).

In the forced swimming test, a highly significant (p<0.001) reduction in the immobility time was recorded in both the standard drug treated group (56.17 ± 14.22 sec) as well as the CM HD group (63.67 ± 12.89 sec). The percentage protection is in the order of Imipramine (73.69%) > CM HD (70.18%) > CS HD (60.97%) > CM LD
(52.77%) > CS LD (49.34%). The sucrose consumption test results indicate that the sucrose preference was more or less the same in all the treated groups. The preference was less in the induced group (79.76 ± 5.11% with 26.11 ± 5.71 ml/24 h sucrose consumption). The least fluid consumption rate was recorded in the induced untreated group (32.66 ± 6.28 ml/24 h).

In hepato- and nephro- protective study, cisplatin treated rats showed increased activity of transaminases (AST and ALT), ALP and bilirubin. The extracts of *C. striatus* and *C. marulius* restored physiological integrity of hepatocytes, thereby reducing the elevated values of serum AST, ALT, ALP and bilirubin. In kidney, levels of creatinine, uric acid, urea and BUN were increased in cisplatin treated group, whereas in extract treated groups, their levels were significantly (p<0.001) decreased. Liver and kidney histopathology revealed marked changes in the treated and untreated group.

The fatty acids present in the oil of *C. striatus* and *C. marulius* was identified using gas chromatography. In cardio-protective study, the total protein, SOD, CAT, GPx and GST activities alleviated in isoprenaline induced group whereas LPO values elevated indicating oxidative stress in the heart. All the cardiac markers viz: AST, ALT, ALP, LDH and CK-MB were found elevated in group administered with isoprenaline alone. The oil of *C. striatus* and *C. marulius* were able to maintain the enzyme levels near normal indicating that isoprenaline could not induce the alterations when injected along with fish oil. The lipid profile of the isoprenaline induced group was altered to a greater extent when compared with the treated and control groups. A marked increase in cholesterol was noticed in the induced untreated group.
The serum HDL level was decreased (19.94 ± 1.64 mg/dl) and that of LDL was increased significantly (p<0.001) (102.91 ± 1.89 mg/dl) in isoprenaline treated rats compared with control animals (37.79 ± 8.84 and 54.60 ± 2.59 mg/dl respectively). The level of VLDL augmented in the isoprenaline administered group whereas the control values were least. Histopathology of heart revealed moderate degenerative changes in myocardium of isoprenaline treated rats.

The results of the study showed that the extract as well as oil of C. striatus and C. marulius effectively stimulate wound healing, prevent inflammation, ulcer, arthritis, depression and protects the liver and kidney against cisplatin toxicity and heart against isoprenaline induced myocardial infarction. The fatty acids and amino acids present in C. striatus as well as C. marulius possess significant putative effects to improve the health status of human. These fish possess many compounds on par with medicinal plants and thus a potent food as medicine. The results of the present research authentify the folkloric information about the medicinal properties of C. striatus as well as a new milestone in the research on C. marulius. The assured therapeutic potential of C. striatus and C. marulius crude extract and oil warrants more elaborative and extensive clinical research with the isolated bioactive compounds. In short, these results have demonstrated significantly the therapeutic potential of C. striatus and C. marulius in vivo.