was H_2S-producing, starch and gelatin-hydrolyzing and alkali-tolerant. The isolate grew well in minimal media containing glucose, fructose and sucrose. The strain SR-G1 was identified as *Microbacterium esteraromaticum* (GenBank Accession No. JQ581525) based on the phenotypic characteristics and 16S rRNA sequence analysis. Extraction and separation of the bacterial carotenoid was carried out by a one step methanol of hexane extraction. The coloured supernatant in hexane solvent was analyzed by using UV- Visible Spectrophotometer from 350-550 nm range for detecting the λ_{max}. The bacterial pigment was identified using a combination of UV/visible spectral data and HPLC retention time as Neoxanthin (λ_{max} = 438±2nm). Neoxanthin is one of the major xanthophylls (oxygenated carotenoids) which are reported to be directly associated with reduction in the risk of cancers, cardiovascular disease, age-related macular degeneration, and cataract formation. Hence, the potential of microbial producers as an alternative to chemical synthesis of xanthophylls could be further examined.

FF PO 18

Effect of squalene supplementation on HMG CoA Reductase in rats fed high fat diet

K.K. ASHA*, LEKSHMI R.G. KUMAR, C.S. TEJPAL, K.K. ANAS, SUSEELA MATHEW

ICAR-Central Institute of Fisheries Technology, Matsyapuri, Kochi, Kerala, India; **asha.santhosh5@gmail.com*

Squalene a 30-carbon hydrocarbon obtained from shark liver oil is an intermediate in the synthesis of all plant and animal sterols including steroid hormones, cholesterol, and vitamin D. Studies have revealed that intake of squalene rich foods affords a cardiovascular benefit and protects from vascular disease-related mortality. It is also known to lower plasma lipid fractions that may be responsible for this effect. In our study in albino rats, we aim to show molecular evidence of the effect of squalene on the proteins of lipid metabolism through proteomics approach. Five groups of rats designated as control/Group 1, fed diet with normal fat content; squalene-fed diet with normal fat content, Group 2; high fat (40%) diet-fed Group 3, high fat diet fed groups 4 & 5 supplemented with squalene at 0.025 and 0.05% of body weight respectively were taken for the study. After the experimental feeding period of 27 days, rats were sacrificed and serum and liver tissue were taken for analysis. The effect of squalene on the mRNA expression of HMG CoA Reductase, the rate limiting enzyme in cholesterol biosynthesis has been studied. Western blotting approach was also used to determine the level of the enzyme HMG CoA Reductase in liver of rats of all experimental groups. Biochemical analysis of lipid fractions show that feeding of squalene resulted in lowering of total cholesterol and LDL cholesterol, triglycerides, but increased the levels of HDL cholesterol in squalene supplemented high fat diet fed rats in groups 4 and 5. No significant changes were observed in the content of phospholipids across the groups. mRNA expression of HMG CoA Reductase was significantly enhanced in Group 5, the high fat diet fed group that was supplemented with higher level of squalene when compared to Control group and Group 4 the high fat diet fed group that was supplemented with lower level of squalene. Fish oil feeding has resulted in lowering of serum total and LDL cholesterol and triglycerides. At the same time hepatic expression of HMG CoA Reductase was

lowered which is important as this would mean lower rate of cholesterol synthesis.

FF PO 19

In vivo biocompatibility and biodegradability evaluation of chitosan based composite polymeric films

P.R. SREEREKHA[1], S. VIMALADEVI[2], DIVYA K. VIJAYAN[1], B. GANESAN[1], V.A. MINIMOL[1], SUSEELA MATHEW[1], R. ANANDAN[1]*

[1]ICAR-Central Institute of Fisheries Technology, Matsyapuri, Kochi, Kerala, India; [2]Tamil Nadu Fisheries University, Ponneri, Tamil Nadu, India; *kranandan@rediffmail.com*

Being a natural biopolymer having excellent biocompatibility and biodegradability, chitosan and its derivatives are extensively used for biomedical, agricultural and other healthcare applications. Chemical modifications made to chitosan can make it more or less toxic and can modulate biodegradation rate. In this study, composite polymeric films of chitosan were made by conventional solvent casting method followed by vacuum drying. *In vivo* biocompatibility and biodegradation were evaluated by subcutaneous implantation of the developed polymeric films in experimental rats. Briefly, the animals were divided into five groups of two animals each, namely, chitosan (C), chitosan/chondroitin sulfate (CC), CZC chitosan/ zinc acetate/chondroitin sulfate, chitosan/zinc acetate (CZ) and polypropylene (PP) control. Subcutaneous incision of 1 cm^2 was made on the dorsal side of rats and the developed films were inserted in respective groups under sterile conditions after giving proper anesthesia. The wounds were sutured and animals were carefully monitored for any adverse pathological changes. No visible signs of tissue damage or inflammation were observed during the evaluation period. Body weight was monitored on weekly basis, and the animals were sacrificed after two months. The implanted material along with the surrounding tissue was excised and evaluated. Gross observation and histopathological evaluation of the excised tissue along with the implanted film showed absence of inflammatory cells and non- toxic nature of the biomaterial in all experimental groups except in polypropylene (PP) control. Masson's trichrome staining exhibited collagen deposition around the implanted material which indicates favorable tissue response and biocompatibility. Better tissue biocompatibility was observed for composite polymeric films compared to bare chitosan film. It was interesting to note that the architecture of implanted chitosan-zinc acetate-Chondroitin sulphate film showed enhanced biodegradation during the course of tissue regeneration.

FF PO 20

Antihypertensive and antioxidant activities of tungtap

JOSHIKUMAR KHANGEMBAM, A.K. BALANGE, B.B. NAYAK*

ICAR-Central Institute of Fisheries Education, Panch Marg, Andheri (W), P.O. Versova, Mumbai, Maharashtra, India; *nayakbb@gmail.com*

Tungtap is a major fermented fish product consumed widely in the state of Meghalaya prepared from *Puntius sophore*. It is widely accepted that fermented food products have numerous beneficial health effects owing to the bioactivity of the peptides formed during the fermentation process but very few scientific studies have been conducted with regard to fermented fish products. In case of fish peptides,