National Seminar on

"MOLECULAR BASIS OF CANCER & PREVENTION" [MBCP -2020]

18TH – 19TH FEBRUARY 2020

"Science is a beautiful gift to humanity; we should not distort it"

- **A.P.J.Abdul Kalam**

SOUVENIR

Organized by

Department of Life Science, School of Arts and Science PRIST Deemed to be University Thanjavur – 613 403

OP37	G. Yogalakshmi	IN-VITRO ANTIOXIDANT ACTIVITY OF SIDDHA POLY HERBAL FORMULATION-NARASIMHA LEGIYAM
OP38	V.Manjula	THERAPEUTIC STUDY OF *PHYLLANTHUS RETICULATUS* POIR
OP39	M. Ramasamy	NUTRITIONAL QUALITY OF BIVALVES *ANADARA RHOMBEA* IN MUTHUPET ESTUARY, TAMILNADU, SOUTH EAST COAST OF INDIA
OP40	Deepa P. K	EVALUATION OF ANTIOXIDANT POTENTIAL AND ANTIBACTERIAL ACTIVITY OF *NANNOCHLOROPSIS* SP. , THE MARINE MICROALGAE
OP41	Jeyaram Yasotha	MADAGASCAR PERIWINKLE A POTENTIAL MEDICINAL PLANT FOR CANCERS
OP42	K. Ashokkumar	COMPARATIVE PROFILING OF ESSENTIAL OIL COMPOSITION FROM *CORIANDRUM SATIVUM*, *CUMINUM CYMINUM*, *FOENICULUM VULGARE* AND *BRASSICA JUNCEA* THROUGH GC-MS ANALYSIS
OP43	T. Jayaseelan	MORPHOLOGICAL, BIOCHEMICAL CHARACTERIZATION AND 16S RRNA SEQUENCING OF DIFFERENT BACTERIA FROM TEXTILE DYE EFFLUENTS
OP44	Devi Priya .S	DIVERSITY AND DISTRIBUTION OF SEAWEEDS IN THE MANAPADU COASTAL WATERS
OP45	Devi Priya .S	WATER QUALITY ANALYSIS IN RELATION TO FISH BIODIVERSITY – A STUDY ON MANAPADU COASTAL AREA
OP46	Sitrarasu Vijaya Prabhu	BINDING POSE METADYNAMICS AND MOLECULAR DYNAMICS SIMULATION STUDIES OF DUAL NEGATIVE ALLOSTERIC MODULATOR TO PREDICT CORRECT POSE AND UNREVEALING THE BINDING MODE BETWEEN MGLUR1 AND MGLUR5
OP47	Pratheepa. S	STUDIES ON MOSQUITO LARVICIDAL POTENTIAL OF SELECTED SOUTH INDIAN MEDICINAL PLANTS AGAINST *CULEX QUINQUEFASCIATUS*
OP48	R. Ranjani	POPULATION FLUCTUATION AND SEASONAL VARIATIONS OF ASIAN OPENBILL STORK (*ANASTOMUS OSCITANS*) IN KOOTHAIPPAR WETLAND ECOSYSTEM TIRUCHIRAPPALLI DISTRICT, TAMIL NADU, SOUTHERN INDIA
OP49	P. Senthilkumar	TREATMENT STUDY OF TEXTILE INDUSTRY EFFLUENT USING REVERSE OSMOSIS
OP50	Parameswari. S	PREVENTIONS OF CANCER
OP51	A.Thirumurugan	ANATOMICAL CHARACTERIZATION ON THE BARK OF *PISONIA GRANDIS* R. BR
OP52	Srimathi A	A STUDY ON THE PREVALENCE OF PREMENSTRUAL SYNDROME (PMS) DURING PREMENSTRUAL, MENSTRUAL AND INTERMENSTRUAL DAYS AND ITS ASSOCIATION WITH BODY MASS INDEX (BMI) IN SELECTED COLLEGE STUDENTS IN TIRUCHIRAPPALLI CITY

OP.42. COMPARATIVE PROFILING OF ESSENTIAL OIL COMPOSITION FROM *CORIANDRUM SATIVUM, CUMINUM CYMINUM, FOENICULUM VULGARE* AND *BRASSICA JUNCEA* THROUGH GC-MS ANALYSIS

K. Ashokkumar[*1], S. Vellaikumar[2], M. Murugan[1], M.K. Dhanya[1], P. Arjun[3], A. Karthikeyan[4], M. Nimisha[1], and S. Aiswarya [1]

[1]*Cardamom Research Station, Kerala Agricultural University, Pampadumpara, Kerala, India*

[2]*Agricultural College and Research Institute, Tamil Nadu Agricultural University, Madurai, TN, India*

[3]*Department of Biotechnology, PRIST Deemed University, Thanjavur, Tamil Nadu, India*

[4]*Subtropical Horticulture Research Institute, Jeju National University, Jeju-63243, Republic of Korea*

[*] *email: biotech.ashok@gmail.com*

Abstract

The chemical composition of essential oils (EOs) isolated from dried seeds of coriander, cumin, fennel and mustard was evaluated by gas chromatography-mass spectrometry (GC-MS) analysis. The EOs extraction was performed in Clevenger apparatus by hydro-distillation method. The result showed that yield of essential oil was 0.7%, 4.5%, 1.3%, and 0.8% in coriander, cumin, fennel and brown mustard respectively. GC-MS analysis revealed total of 16, 19, 18 and 17 compounds in the essential oil isolated from dried seeds of coriander, cumin, fennel and brown mustard or Indian mustard respectively. Among the four seed spices, coriander essential oil had three major constituents, linalool (49.23%), cinnamaldehyde (15.01%) and α-thujene (4.12), while cumin essential oil showed, five major constituents namely 1,4-p-menthadien-7-al, (31.48%), cumin aldehyde (26.65%), γ-terpinene (11.79%) and β-pinene (14.46%). Fennel oil had predominantly anethole followed by estragole, L-fenchone and D-limonen. Although, mustard showed two key constituents like 3-butenyl isothiocyanate (83.36%) and allyl-isothiocyanate (8.52%). The major constituents' linalool, cinnamaldehyde, cumin aldehyde and 3-buteny isothiocyanate can be used in the food and pharmaceutical applications.

Keywords: coriander, cumin, fennel, Indian mustard; linalool, cinnamaldehyde, cumin aldehyde, anethole, 3-butenyl isothiocyanate, GC-MS analysis

PP.2. ANTICANCER PROPERTIES OF GRAPE PHENOLIC COMPOUNDS

A. Nibiya[1], A. Swathi[1], Y. Josiya[1], K. Ashokkumar[2], K. Mathiyazhagan[3] and P. Arjun[1*]

[1]*Department of Biotechnology, PRIST Deemed University, Thanjavur 613 403, Tamil Nadu, India, e-mail: arjungri@gmail.com*

[2]*Cardamom Research Station, Kerala Agricultural University, Pampadumpara, Idukki, Kerala.*

[3]*TriChem Life Sciences Ltd, MIDC, Tarapur, Mumbai 401506, Maharastra, India.*

Abstract

Vitis vinifera L. belongs to the Vitaceae family, Mediterranean region native, southwestern Asia, Central Europe, it's from Portugal and Morocco east to northern Iran and north to southern Germany. The Mesopotamians and Ancient Egyptians had vine plantations and winemaking skills, the major phenolic antioxidants and anticancer compounds from grape skin and seed extracts. *In vitro* cell models and in assorted food grape seed and skin extracts wield strapping free radical scavenging, lipid oxidation, chelating activities. The types of phenolic compounds are anthocyanin and proanthocyanidins are Delphinidin-3-O-glucoside, Cyanidin-3-O-glucoside, Petunidin-3-O-glucoside, Malvidin-3-O-glucoside, Peonidin-3-O-glucoside. Acetylated anthocyanins; Delphinidin-3-(6-acetyl)-glucoside, Cyanidin-3-(6-acetyl)-glucoside, Peonidin-3-(6-acetyl)-glucoside, Petunidin-3-(6-acetyl)-glucoside, Malvidin-3-(6-acetyl)-glucoside. Coumaroylated anthocyanins; Delphinidin-3-(6-p-coumaroyl)-glucoside, Cyanidin-3-(6-p-coumaroyl)-glucoside, Malvidin-3-(6-p-coumaroyl)-glucoside trans, Peonidin-3-(6-p-coumaroyl)-glucoside, Petunidin-3-(6-p-coumaroyl)-glucoside, Malvidin-3-(6-p-coumaroyl)-glucoside cis. Caffeoylated anthocyanins; Peonidin-3-(6-p-caffeoyl)-glucoside, Malvidin-3-(6-p-caffeoyl)-glucoside. Anthocyanin and proanthocyanidins confirm extremely capable inhibitory property on assortment of cancer cells by *in vivo* and *in vitro* methods. capable alongside a extensive variety of cancer cells through targeting epidermal enlargement factor receptor (EGFR) and its downhill streams pathways, inhibits over COX-2 expression, modifying estrogen receptor pathways and prostaglandin E2 receptors, it showed result in apoptosis and cell cycle arrest. Leaf and fruit extracts showed anticancer activity against human embryonic kidney normal cell line (HEK293) and breast cancer cell line (MDAMB-231), grape plant potential medicinal and important plant to prevent cancers.

Keywords: Anthocyanins, Anticancer, COX-2 expression, Peonidin-3-O-glucoside, Phenolic Compounds.

PP.22. ARTIFICIAL PRESERVATIVES AND THEIR HARMFUL EFFECTS

S. Sakathivel[1], S. Bharath Elavarasan[1], A. Vindhiya[1], M. Rasika[1], K. Ashokkumar[2], and P. Arjun[3*]

[1]*School of Agriculture, Deemed University, Thanjavur - 613 403, Tamil Nadu, India,*
[2]*Cardamom Research Station, Kerala Agricultural University, Pampadumpara, Idukki, Kerala, India*
[3]*Department of Biotechnology, PRIST Deemed University, Thanjavur - 613 403, Tamil Nadu, India, e-mail: arjungri@gmail.com*

Abstract

To preserve the taste, freshness, and foods color, even fresh vegetables and fruits are loaded with preservatives and chemicals. The preservatives are extending the food shelf life, pharmaceuticals and cosmetics through spoilage prevention. Antimicrobials such as benzoates nitrates, nitrites, and sulfur dioxide devastate and bacterial delay growth, molds and yeast. Antioxidants such as propyl gallate, butylated hydroxy anisole (BHA), butylated hydroxy toluene (BHT), fats and oils sluggish breakdown stops. Antienzymatic preservatives such as erythorbic and citric acids block the processes of enzyme; ripening occurring in foodstuffs even after yield. Since occasion immemorial the natural substances like sugar, salt, spices and vinegar used as preservatives. Rather than natural the bulk of preservatives used today are artificial. Several of them are toxic, benzoates, nitrates, sorbates, sulfites, parabens, BHA, BHT, formaldehyde, and several others can cause serious health hazards such as allergic reaction, asthma, allergy, hyperactivity, neurological damage and cancer. Preservatives several from natural from plants, animals, minerals and microbes contains anticancer, antiviral, antioxidant, antimicrobial and antienzymatic properties.

Keywords: Antioxidant, Benzoates, Erythorbic, Sulfites, Vinegar.

PP.24. HUMAN CANCER INDUCED THROUGH ENVIRONMENTAL FACTORS

S. Sakathivel[1], S. Senthilkumar[1], A. Vindhiya[1], K. Ashokkumar[2], and P. Arjun[3*]

[1]*School of Agriculture, Deemed University, Thanjavur - 613 403, Tamil Nadu, India,*
[2]*Cardamom Research Station, Kerala Agricultural University, Pampadumpara, Idukki, Kerala, India*
[3]*Department of Biotechnology, PRIST Deemed University, Thanjavur - 613 403, Tamil Nadu, India, e-mail: arjungri@gmail.com*

Abstract

The present biological mechanisms of cancer recommend that all types of cancers are originated from together genetics and environment, there are several external factors pooled with interior genetic changes will lead to human cancers. Cancer is one of the majority terrible diseases worldwide, in India over 6% of total deaths more than 100000 deaths and accounts for owing to cancer. Main impact for causing cancer is environmental factors and human activities. Mostly through polluted wastes waters that have been emitted from industries, its wastes discharged from the industries are extremely toxic substance that has detrimental consequence to living organism and mostly aquatic organisms. Aflatoxins, Arsenic, Asbestos, Aristolochic Acids, Benzene, Beryllium, Benzidine, Cadmium, 1,3-Butadiene, Coke-Oven Emissions, Coal Tar and Coal-Tar Pitch, Crystalline Silica (respirable size), Ethylene Oxide, Erionite, Formaldehyde, Indoor Emissions from the Household Combustion of Coal, Hexavalent Chromium Compounds, Radon, Thorium, Wood Dust, Nickel Compounds, Mineral Oils: Untreated and Mildly Treated, Strong Inorganic Acid Mists Containing Sulfuric Acid, Secondhand Tobacco Smoke (Environmental Tobacco Smoke), Soot, Vinyl Chloride, Trichloroethylene. Government also should participate very important function is generating awareness programs.

Keywords: Asbestos, Benzidine, Government, Thorium, Tobacco Smoke.