

Curriculum Vitae

PROF. DR. GHAZALA YASMEEN BUTT

03-05-2023



Professor
Institute of Botany,
University of the Punjab, Lahore - Pakistan

PERSONAL INFORMATION

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ACADEMIC QUALIFICATIONS

Master of Science (M. Sc.) with 1st division in **1995** in Botany (Phycology) from *Department of Botany*, University of Karachi.

Doctor of Philosophy (Ph.D.) in **2004** in Botany (Phycology) from Department of Botany, University of Karachi.

Post-Doc Research in **2005-2006**: Spatial and temporal distribution of marine phytoplankton both *a*) in the Firth of Clyde, the region where this marine station situated, and *b*) along the coast of Pakistan, including the coast of Balochistan at *University Marine Biological Station Millport*, University of London, **Scotland**.

INTERNATIONAL PROFESSIONAL VISITS

- March 2019**: Effects of *Sargassum* sp. as manure on growth of *Posium sativum*. **Sydney, AUSTRALIA**
- September 2017**: “Biofuel and Bioenergy from Algae” in 6th World Congress at Park Inn, **London, UNITED KINGDOM**.
- February 2012**: Next Generation Biofuel from Algae” Grence Tower Bridge, **London, UK**.
- October 2009**: “Taxonomy of Recent Dinophyceae” at **Hafenstr. 43, D-24992 List/Sylt, GERMANY**. Examined different natural samples and cultures from marine and freshwater dinoflagellates (planktonic and benthic) to analyze the various characters which differentiated them to each other such as their flagellation, cell wall connection etc. with focus of light and scanning electron microscope.

5. **October 2008:** “Phytoplankton Culturing Techniques” at **Bigelow Laboratory of Ocean Science, Maine, U.S.A.** Isolation methods include direct single-cell isolation by micropipette, agar plating and flow cytometry and indirect methods such as dilution techniques and enrichments. Preparation and sterilization of culture media was included.
6. **September 2008:** “Coral Reef Monitoring and Management” at **Sharm El Sheikh, South Sinai, EGYPT.**
7. **December 2007:** “Snorkel Surveying Techniques” from Pakistan Wetland Program. Different techniques were used to observe and collect the samples.
8. **May 2006:** “Coastal zone Management” University of London, University Marine Biological Station Millport, **SCOTLAND.**

SERVICE RECORD

December 16, 2021 to date: Professor, *Institute of Botany*, University of the Punjab, Quaid-i-Azam Campus, Lahore.

May 2010 to 15 December 2021: Associate Professor, *Department of Botany*, GC University Lahore, Katchery Road, Lahore-54000, Pakistan.

August 2012 to Sept. 2017: Chairperson & Associate Professor, Department of Botany, GC University Lahore.

July 2008 to May 2010: Assistant Professor, *Department of Botany*, Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan-60800, Pakistan.

July 2007 to July 2008: Assistant Professor, *Department of Botany*, Jinnah University for Women, North Nazimabad, Karachi, Pakistan.

January 2007 to June 2007: Lecturer, *Department of Botany*, Jinnah University for Women, North Nazimabad, Karachi, Pakistan.

2005-2006 Post-Doc Research Fellow: *University of Marine Biological Station Millport, University of London, Scotland.*

January 2004 to March 2005: Research Associate in a research scheme of Dr. Mustafa Shameel “Phycochemistry and Bioactivity of freshwater algae of Sindh”, *Phycology and Phycochemistry Lab.*, Room No. 18, M.A.H.Qadri Biological Centre, University of Karachi.

2003-2004: Assisted other Ph.D. students to pursue their research work related to Phycochemistry and algal taxonomy, University of Karachi.

HEC PROJECT COMPLETED

HEC vide letter No. 1739/R&D/10/3373: Spatial distribution pattern of freshwater phytoplankton, with special reference to **harmful algal blooms** in Southern Punjab, Pakistan (Rs. 3.5/- million)

PH. D. SUPERVISED & DEGREE AWARDED

1. **Dr. Basharat Sadiq 2016:** A Contribution to the Algal Flora of Lahore. *Department of Botany, GC University Lahore.*
2. **Dr. Uzma Hanif 2016:** Anatomical, Antioxidant and Phycochemical Studies on Seaweeds of Karachi Coast. *Department of Botany, GC University Lahore.*
3. **Dr. Nadeem Ullah 2018:** Taxonomic studies of freshwater algae from North-East Punjab, Pakistan. *Department of Botany, GC University Lahore.*

4. **Dr. Nazim 2019:** Extraction and evaluation of fatty acids from algal flora of Lahore and their conversion into biodiesel. *Department of Botany, GC University Lahore.*

PH. D. THESIS SUBMITTED

1. **Javeria Sumer:** Phycochemical and bioactivities of some Seaweed of Chlorophycota and Rhodophycota from Karachi Coast, Pakistan (submitted on 15th August 2022).

PH. D. STUDENTS IN PROGRESS

1. **Amna Batool:** Development of Culture Bank of commercially important unicellular freshwater algae from District Lahore and adjoining areas (research in progress).

TRAININGS/CONFERENCE/ SEMINAR ATTENDED

1. **August 2022:** Workshop: How to get the most out of being a reviewer of scientific articles at APAC customer success hub workshop-online
2. **February 2022:** Two day workshop on “Promoting Research Excellence in Academics across Pakistan” by Higher Education Commission, **Pakistan.**
3. **May to August 2021:** The 7th Conference of the International Society for Applied Phycology by **Virtual Platform** from **Japan.**
4. **February 2020:** International Symposium on Plant life of South Asia at University of **Karachi.**
5. **March 2019:** 4th International conference on Plant Sciences & Physiology 2019 in **Sydney, Australia.**
6. **December 2018:** 2nd International Conference of Plant Sciences at Department of Botany, GC University Lahore, Pakistan
7. **September 2017:** “Biofuel and Bioenergy from Algae” in 6th World Congress at Park Inn, **UK.**
8. **April 2017:** “Algae as good or bad organisms” in International conference on Science for the betterment of Humenity” at Saddiq Govt. College University for Women, **Bhawalpure.**
9. **April 2016:** “Algal Collection & Bio-fuel Production in two days Phycological Workshop at Department of Botany, GC University Lahore.
10. **March 2014:** As invited speaker in International Conference on “Major Environmental Constraints to Plants: Assessment and Reclamations” at Department of Botany, GC University **Faisalabad.**
11. **March 2014:** International Conference on Advanced Biotechnology at GC University for Women **Faisalabad.**
12. **April 2013:** National training course on handling and use of laboratory Animals for Biotechnology and Biomedical Research at NIBGE, **Faisalabad.**
13. **March 2013:** One day Seminar on World Forest Day at Jallo Forest Park, Lahore
14. **October 2012:** Second National Phycological Conference “Algae for Mankind” at Karachi University, **Karachi.**
15. **June 2012:** Marine Biology- Ecology and Applications, Advancements and issues of 21st Century at COMSTECH, **Islamabad.**
16. **February 2012:** “Next Generation Biofuel Conference 2012” at Grange Tower Bridge, **London.**
17. **April 2012:** 1st National Training Workshop on Chromatography and Mass Spectrometry at NIBGE, **Faisalabad.**
18. **January 2011:** Basic Techniques for Botany teachers at Department of Botany, GC University **Lahore.**

19. **January 2009:** “Modern Trends and Approaches in Microbiology” at IMS Bahauddin Zakariya University, **Multan**.
20. **May 2007:** “Marine Biodiversity Conservation” at Hotel Pear Continental **Karachi**/ HEC-BC joint Higher Education Link Programme.
21. **November 2004:** “Marine Biodiversity” at Kohe Noor Hall, Regent Plaza Hotel Karachi/ CEMB University of **Karachi**.
22. **1999:** “Aquatic Biodiversity” at Abdul Qadir Khan Institute, Karachi University, **Karachi**.

CONFERENCE, SEMINARS AND WORKSHOPS ORGANIZED

1. **November 21-25, 2022:** One-Week International Phycological Training Workshop on “Algal Ecology & Biotechnology” at Institute of Botany, University of the Punjab in collaboration with International Society for Applied Phycology and Pakistan Science Foundation.
2. **May 18-19, 2022:** Two days Phycological Workshop on “Algal Collection Techniques and Their Economic Uses” at Institute of Botany, University of the Punjab in collaboration with Pakistan Science Foundation.
3. **April 2016:** Two days Phycological Workshop on Algal Collection and Bio-fuel Production at GC University Lahore in collaboration with HEC & PSF.
4. **September 2014:** 3-Days International Conference of Plant Sciences at Department of Botany, GC University, Lahore, in collaboration with HEC (Higher Education Commission) & PSF (Pakistan Science Foundation).
5. **February 2014:** 2-Days Phycological Workshop on Algal Collection and Culturing Techniques at GC University, Lahore, in collaboration with HEC (Higher Education Commission).
6. **March 2013:** “One day Phycological Workshop on Phycoremediation of Heavy metals contamination in Lahore by Dr. Muhammad Afzal Rana, St. Joseph College New York at GC University, Lahore.
7. **September 2012:** 2-Days Workshop on Algal Collection and new Trends in Chlorophycota at GC University, Lahore, in collaboration with HEC (Higher Education Commission) & PSF (Pakistan Science Foundation).
8. **October 2011:** “One day International Seminar entitled: “The Ups and downs of Pakistan’s Large Marine Animals with respect to Phytoplankton” by Dr. Mauvis Gore, Co-Director, Marine Conservation International, Edinburgh, Scotland at GC University, Lahore, in collaboration with HEC (Higher Education Commission) & PSF (Pakistan Science Foundation).
9. **March 2011:** 1st National Phycological Conference 2011” at Department of Botany, GC University, Lahore, in collaboration with HEC & PSF.
10. **2008:** “Pakistan’s Marine Porpoises, Dolphins and Wales: the working of Cetacean Conservation Pakistan” by Dr. Mauvis Gore (British Scholar, University Marine Biological Station Millport, Scotland) at Bahauddin Zakariya University, Multan.
11. **2008:** “Mangroves Management” by Prof. Dr. Pirzada Jamal Siddiqui (Director, Center of Excellence Marine Biology, Karachi University) at Jinnah University for Women, Karachi.
12. **2007:** “Coral Reefs” by Dr. Rupert Ormond (Director, University Marine Biological Station Millport, Scotland) at Jinnah University for Women, Karachi.

RESEARCH PRESENTATIONS

1. **21-25 November 2022:** Algal Ecology and Biotechnology in one-week International Phycological Workshop at Institute of Botany, University of the Punjab, Lahore.
2. **18-19 May 2022:** Algal introduction and economic benefits for humanity in two day Phycological workshop at Institute of Botany, University of the Punjab, Lahore.
3. **25-26 March 2019:** “*Sargassum* sp. as manure on growth of *Pisum sativum*” in 4th International conference on Plant Sciences & Physiology 2019 in Sydney, Australia.
4. **26-27 February 2018:** ”Exploring the Biodiversity through SCUBA Diving” in Seminar on Marine Research and Intoduction to Scuba Diving at Institute of Marine Science, University of Karachi, Karachi.
5. **5-6 September 2017:** “Bioethanol production from two monoculture algal species *Cladophora fracta* (Dillw.) Kützing and *Euglena polymorpha* Dangeard” in 6th World Congress at Park Inn, UK.
6. **4-7 April 2017:** “Algae as good or bad organisms” in International conference on Science for the betterment of Humanity” at Saddiq Govt. College University for Women, Bahawalpur.
7. **12-13 April 2016:** Algal identification and Uses in Algal Collection & Bio-fuel Production in two days Phycological Workshop at Department of Botany, GC University Lahore.
8. **22-24 September 2014:** “Recent Taxonomic of Algae” in International Conference of Plant Sciences at Department of Botany GC University Lahore.
9. **February 2013:** “Environmental Effects of algal Communities” at Phycological workshop at Department of Botany GC University Lahore.
10. **15-17 October 2012:** “Biodiesel Production form Algae” in 2nd National Phycological Conference at Karachi University, Karachi.
11. **25-26 September 2012:** “Algal Collection & Recent Taxonomy of Chlorophycota” at Fazl-e-Hussain Reading Room, GC University Lahore.
12. **10 January 2011:** Basic Techniques for Botany Teachers” at Department of Botany, GC University Lahore, Pakistan.
13. **21 January 2009:** “Phytoplankton Communities of Pakistan: Dinophyta and Bacillariophyta from the coast of Sindh and Balochistan” at symposium Modern Trends and Approaches in Microbiology at BZ University of Multan Pakistan.
14. **24-28 February 2003:** “Phycochemistry and bioactivity of certain freshwater green algae of Sindh” in 8th National Meeting of Plant Scientists, organized by Pakistan Botanical Society.

ACADEMIC MEMBERSHIPS/ CONTRIBUTIONS

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| 1. International Society for Applied Phycology | Member |
| 2. The Society of Herbarium Curator | Member |
| 3. Biologia | Member |
| 4. Pakistan Journal of Botany | Member (life time) |
| 5. International Journal of Phycology and Phycochemistry | Editor (2012-2013) |

M. PHIL/ M.SC. STUDENT SUPERVISED (38)

1. **Ayishm Altaf MS- 2022-23:** Phycochemical and Antioxidant activity of *Sargassum vulgare* C. Ag. from Balochistan, Pakistan. **In progress**

2. **Ayesha Asif MS-2022-2023:** Taxonomic study of freshwater algae from some tube wells of Tehsil Mian Channu, Pakistan. **In progress**
3. **Muhammad Faizan MS-2022-2023:** Taxonomic study of freshwater algae from Azam Kashmir. **In progress**
4. **Muhammad Ali MPhil 2022-2023:** Taxonomic study of freshwater algae from Bhakar. **In progress**
5. **Shumaila Nawaz MPhil-2022-2023:** Phycochemical analysis and antifungal activity of *Sargassum* sp. Collected from Gawadar, Balochistan. **In progress**
6. **M. Rasheed Chattha 2021-2022:** Taxonomic study of freshwater algae from GCU KSK campus. **In progress**
7. **Syeda Rida Zahra 2021-2022:** Effect of freshwater algae on the growth of *Cucumis sativum* (Karagil F1 & Cucumber Special). *Department of Botany, GC University Lahore*
8. **Hina Azmat 2021-2022:** Effect of fresh water algae on growth of *Triticum estivum* (FSD-08 & Akbar-19). *Department of Botany, GC University Lahore*
9. **Amina Fareed 2021-2022:** Effect of fresh water algae on growth of *Brassica olearaceae* (Madhuri & Pelican). *Department of Botany, GC University Lahore*
10. **Mashal Javed 2021-2022:** Effect of fresh water algae on growth of *Capsicum* (Anaheim and Bala). *Department of Botany, GC University Lahore*
11. **Umal Bashir 2021-2022:** Antioxidant activity of some fresh water algae from Narowal. *Department of Botany, GC University Lahore*
12. **Afshan Naeem 2021-2022:** Taxonomic study of fresh water algae from some parks of Lahore city. *Department of Botany, GC University Lahore*
13. **Maham 2020-21:** Monoculturing of some freshwater pennate diatom on Chu#10 medium. *Department of Botany, GC University Lahore*
14. **Amina 2020-21:** Phycochemical and antioxidant activities of *Spirogyra* sp. *Department of Botany, GC University Lahore*
15. **Toba Zia 2020-21 (MSc):** Taxonomic study of freshwater algae from Halloki village, Lahore. *Department of Botany, GC University Lahore*
16. **Hira Shehzadi 2019-20:** Phycochemical analysis and antioxidant activity of *Ulva* sp. *Department of Botany, GC University Lahore*
17. **Tahira Younis 2019-20:** Phycochemical anyalysis and antioxidant activity of *Rhizoclonium hieroglyphicum*. *Department of Botany, GC University Lahore*
18. **Junaid Bajwa 2019-20:** Effect of Marine *Rhizoclonium crassipellitum* extract as fertilizer on the growth of Wheat (Faisalabad 2008) and Maize (DK 8148). *Department of Botany, GC University Lahore*
19. **Mashal Javed 2019-20 (MSc):** Taxonomic studies of freshwater algae form Chishtian City, District Bhawalnagar. *Department of Botany, GC University Lahore*
20. **Humna Sohail 2019:** Monoculture of some freshwater algae from Shalimar Garden, Lahore. *Department of Botany, GC University Lahore*
21. **Sidra Abdul-Haq 2018:** Optimization of mono culturing techniques for filamentous algae *Rhizoclonium hieroglyphicum* and *Spirogyra* sp. *Department of Botany, GC University Lahore*
22. **Hadia Awais 2018:** Studies of fatty acids and some biological activities from fresh water mixed algae from Botanic Garden GCUL. *Department of Botany, GC University Lahore*

23. **Shameem Jana 2017:** Taxonomic studies of freshwater algae from District Kohat KPK. *Department of Botany, GC University Lahore*
24. **Aqsa Kazmi 2017:** Antifungal activity of crud extract of brown seaweed, *Padina tetrastratica* F. Hauck. *Department of Botany, GC University Lahore.*
25. **Hammad 2017:** Taxonomic studies of freshwater algae from Tehsil Pasrur District Sialkot. *Department of Botany, GC University Lahore.*
26. **Shafaq Amir Ch. 2016:** Production of Bioethanol and Biogas from two mono-cultured algal species. *Department of Botany, GC University Lahore.*
27. **Tasleem Riaz 2016:** Taxonomic studies of freshwater algae collected from tehsil Shakarghar district Narowal. *Department of Botany, GC University Lahore.*
28. **Muneeb Akram 2016:** Taxonomic studies of freshwater algae from Nandipur and adjoining areas district Gujranwala Pakistan. *Department of Botany, GC University Lahore.*
29. **Hazoor Baksh 2016:** A contribution of algal flora of some areas of district Bhawalpur. *Department of Botany, GC University Lahore.*
30. **Shahbaz Rasool (MSc) 2016:** Evaluation of saturated and unsaturated fatty acids extracted from *Chara vulgare* L. *Department of Botany, GC University Lahore.*
31. **Fiza Mudassar 2015:** Optimization of monoculturing techniques for three indigenous freshwater algal strains of chlorophycota. *Department of Botany, GC University Lahore.*
32. **Muhammad Ansar Mukhtar 2014:** Taxonomic study of freshwater algae from Bahawalnagar in relation to Quality of Water. *Department of Botany, GC University Lahore.*
33. **Juveria Samar 2014:** Some Ecological studies of phytoplankton interactions with physiochemical parameters of fresh water of Tehsil Vehari. *Department of Botany, GC University Lahore.*
34. **Adeel Ahmad 2014:** Taxonomic study of freshwater algae from Multan. *Department of Botany, GC University Lahore.*
35. **Mr. Usman Ali 2013:** Determination of antimicrobial activity of two freshwater algae using well diffusion method. *Department of Botany, GC University Lahore.*
36. **Mr. Ajaz Hussain 2013:** Study of anticancer Efficiency of *Sargassum* and *Iyengaria* sp. On Lung cancer Lines using Mtt assay and Trypan Blue Exclusion Test. *Department of Botany, GC University Lahore.*
37. **Sara Arjumand 2012:** Investigations of saturated and unsaturated fatty acids in *Cladophora* sp. And *Ulothrix* sp. Collected from Lahore. *Department of Botany, GC University Lahore.*
38. **Farzana Kauser 2012** Taxonomic study of Algae collected from open drains in some areas of Lahore. *Department of Botany, GC University Lahore.*
39. **Mr. Toqeer 2012:** Spatial distribution of Phytoplankton from Dera Ghazi Khan, Punjab Pakistan. *Department of Botany, GC University Lahore.*
40. **Mr. Amir 2012:** Taxonomic study of freshwater algae from Rajan Pur, Pakistan. *Department of Botany, GC University Lahore.*
41. **Mr. Akhtar 2012:** Taxonomic studies of Freshwater algae from Kasur district. *Department of Botany, GC University Lahore.*
42. **Khola Gondal 2011:** Algal production for Biodiesel. *Department of Botany, GC University Lahore.*

43. **Arifa Habib 2009:** Research work on “Phytoplankton communities form the region of Multan, Pakistan. *Department of Botany, Institute of Pure & Applied Biology, Bahauddin Zakariya University, Multan.*

BSC (HONS.) PROJECTS SUPERVISED (53)

1. **Faiza Kokab BS 2022-2023:** Effect of freshwater algal extract on growth of *Brassica nigra* cultivar. **In Progress**
2. **Ayesha Irshad BS 2022-2023:** Effect of freshwater algal extract as fertilizer on the growth of pea (*Pisum sativum*) var. Meteor. **In Progress**
3. **Sana Shahid BS 2022-2023:** Taxonomic study of freshwater algae from Racecourse Park Lahore. **In Progress**
4. **Naila BS 2022-2023:** Taxonomic study of freshwater algae from Okara city. **In Progress**
5. **Ammara Yousaf 2021-2022:** Effect of fresh water algae on seed germination of *Solanum lycopersicum* (45-65 and Red hero). *Department of Botany, GC University Lahore.*
6. **Roma Yousaf 2021-2022:** Effect of fresh water algae on seed germination of *Daucus carota*. *Department of Botany, GC University Lahore.*
7. **Mehwish Yousaf 2021-2022:** Effect of fresh water algae on seed germination of *Allium cepa* (Malhec and Regal f1). *Department of Botany, GC University Lahore.*
8. **Maham Mujahid 2021-2022:** Effect of fresh water algae on seed germination of *pisum sativum* (meteor faisalabad) and zea mays (sugar 75). *Department of Botany, GC University Lahore.*
9. **Laiba Iqbal 2021-2022:** Effect of fresh water algae on the germination of *Brassica oleraceae* l. Seeds (Prima and Rapid). *Department of Botany, GC University Lahore.*
10. **Khadija Mushtaq 2021-2022:** Effect of fresh water algae as biofertilizer on the seed germination of *Raphanus sativus* l. (green neek) and *Capsicum frutescens* l(green star). *Department of Botany, GC University Lahore.*
11. **Aneeza Attique 2020-21:** Antioxidant activity of freshwater algae (*Lyngbya* Kützing and *Microspora* sp.) from tubewell, Kasur *Department of Botany, GC University Lahore.*
12. **Fatima Arif 2020-21:** Taxonomic study of freshwater algae from Qila Ahmed Abad District Narowal *Department of Botany, GC University Lahore.*
13. **Maheen Hafeez 2020-21:** Taxonomic study of freshwater algae from Sheikhpura *Department of Botany, GC University Lahore.*
14. **Hamait Ullah 2019-20:** Monoculture of some freshwater algae from a waterbody in Nasir bagh on Bold’s Basal Medium *Department of Botany, GC University Lahore.*
15. **Medhat 2019-20:** Monoculture of some freshwater algae from a waterbody in Nasir Bagh on Chu#10 Medium. *Department of Botany, GC University Lahore.*
16. **Amina Fareed 2019-20:** Taxonomic study of freshwater algae form different sites of Tehsil Chichawatni. *Department of Botany, GC University Lahore.*
17. **Saman Safdar 2019:** Monoculture of *Euglena* sp. on CHU#10 medium and Bold's Basal medium. *Department of Botany, GC University Lahore.*
18. **MaryamTayyab 2019:** Taxonomic studies of some algae collected from Jillani Park, Lahore. *Department of Botany, GC University Lahore.*

19. **Varda Masood 2019:** Taxonomic study of freshwater algae collected from Mandiala Warraich, Tehsil Rahwali, Distric Gujranwala. *Department of Botany, GC University Lahore. Department of Botany, GC University Lahore.*
20. **Junaid Akram 2018:** Taxonomic study of waste water algae from a plastic industry, Manga Mandi, Lahore. *Department of Botany, GC University Lahore.*
21. **Tahira Younis 2018:** Antifungal activity of freshwater alga *Rhizoclonium hieroglyphicum*. *Department of Botany, GC University Lahore.*
22. **Muqaddes Noor 2018:** Antibacterial activity of *Ulva sorensenii*. *Department of Botany, GC University Lahore.*
23. **Tasleem Adrees 2018:** Effects of some freshwater algae collected from Botanic Garden GCU Lahore on growth of Balloon Belly Molly fish. *Department of Botany, GC University Lahore.*
24. **H. Aiza Malik 2018:** Isolation and identification of some algae from Tehsil Haroonabad. *Department of Botany, GC University Lahore.*
25. **Hamna Sohail 2017:** Antioxidants and antifungal activities on *Spirogyra* sp. *Department of Botany, GC University Lahore.*
26. **Maryam 2017:** Taxonomical studies of freshwater algae from Hiran Minaar District Sheikhpura. *Department of Botany, GC University Lahore.*
27. **Rabia Ilyas 2017:** Taxonomical study of waste water algae from *Shakargharh*. *Department of Botany, GC University Lahore.*
28. **Kaleem Ullah 2017:** Monoculturing and comparative growth of *Oscillatoria* sp. from Coca Cola beverage waste water, Lahore. *Department of Botany, GC University Lahore.*
29. **Sana Rasheed Awan 2016:** Extraction of lipids from microalga *Arthospira* sp. from GCU Lahore. *Department of Botany, GC University Lahore.*
30. **Sidra Abdul Haq 2016:** Extraction of lipids by various methods from *Euglena polymorpha* Gaudich. *Department of Botany, GC University Lahore.*
31. **Gulnaz Ashraf 2016:** Taxonomic study of freshwater algae of Lahore Zoo. *Department of Botany, GC University Lahore.*
32. **Adnan Farooq 2015:** Taxonomic and some physiochemical studies of fresh water algae from Toba Tak Singh. *Department of Botany, GC University Lahore.*
33. **Ayesha Sultana 2015:** Taxonomic and some physiochemical studies of fresh water algae from tehsil Shakarghar district Narowal. *Department of Botany, GC University Lahore.*
34. **Aqsa Kazmi 2015:** Study of taxonomy and anatomy of two macroalgal species *Geledium pusillum* Le Jolis and *Geledium corticata* J. Agardh of Rhodophycota. *Department of Botany, GC University Lahore.*
35. **Tamseela Nazir 2015:** Taxonomic and physiochemical studies of algae from Layyah. *Department of Botany, GC University Lahore.*
36. **Rabia Rafique 2014:** Fresh water phytoplankton diversity and analysis of water quality from tehsil Rahim Yar Khan. *Department of Botany, GC University Lahore.*
37. **Saima Idrees 2014:** Taxonomic study of some freshwater phytoplankton of tehsil Rahim yar khan. *Department of Botany, GC University Lahore.*
38. **Noreen Asghar 2014:** Study of algal diversity and habitat analysis of some freshwater bodies in Rahim Yar Khan. *Department of Botany, GC University Lahore.*

39. **Fazeelat Tahira 2013:** Antifungal activity of fresh water *Cladophora* sp. Collected from botanic garden, GCU, LHR. *Department of Botany, GC University Lahore.*
40. **Nargis Fatima 2013:** Antimicrobial activity of freshwater *Cladophora* sp. Collected from botanic garden, GCU, LHR. *Department of Botany, GC University Lahore.*
41. **Firza Shafiq 2012:** Study of Fresh water algae in some areas of Lahore City. *Department of Botany, GC University Lahore.*
42. **Sabahat Noor 2012:** Study of fresh water algae from Lahore city as food for two species of Fishes. *Department of Botany, GC University Lahore.*
43. **Juveria Samar 2012:** Taxonomic study of Algae from waste water in two localities of Lahore City. *Department of Botany, GC University Lahore.*
44. **Muniza Khalid 2012:** A taxonomic study of Algae near Ten tube wells in Bahawalnagar Area. *Department of Botany, GC University Lahore.*
45. **Tooba Parvaiz 2011:** Algal Flora of Freshwater Ponds of GCU Botanical Garden Lahore. *Department of Botany, GC University Lahore.*
46. **Hadia Sara 2011.** Freshwater Algal Growth on Walls of Some Filtration Plants in Lahore City. *Department of Botany, GC University Lahore.*
47. **Sadia Iqbal 2011.** Taxonomic and Ecology studies of Algae from Shalimar Garden, Lahore. *Department of Botany, GC University Lahore.*
48. **Talha Jabbar 2011.** Taxonomic study of Cyanophycota and Chlorophycota from Muzafarabad, AJK. *Department of Botany, GC University Lahore.*
49. **Sobial Jabeen 2010:** Analysis of Algae growing in the different areas of Multan, Pakistan. *Department of Botany, Institute of Pure & Applied Biology, BZ University, Multan.*
50. **Shakil Ahmad 2010:** Qualitative studies of Bacillariophycota of fish farms from Multan City, Pakistan. *Department of Botany, Institute of Pure & Applied Biology, BZ University, Multan.*
51. **Hena Liaqat 2009:** Survey of Freshwater Algae from Bahauddin Zakariya University of Multan, Pakistan. *Department of Botany, BZ University, Multan* 1-105pp.
52. **Qurat-ul-Ain 2009:** Marin and Freshwater Phytoplankton Communities. *Department of Botany, BZ University, Multan* 1-82pp.
53. **Tasneem Kousar 2009:** Survey of Freshwater Algae (Cyanophycota and Chlorophycota) from BZ University of Multan. *Department of Botany, BZ University, Multan.* 1-78pp.
54. **Ummal Baneen Fatima 2009:** Survey of Freshwater Bacillariophycota from BZ University Multan. *Department of Botany, BZ University, Multan*
55. **Beenish Ahmed 2007:** Phytoplankton community Dinophyta from the coastal water of Balochistan. *Department of Botany, Jinnah University for Women.* 1- 82pp.
56. **Hafsa Rana 2007:** The genus *Ceratium* from marine water of Balochistan. *Department of Botany, Jinnah University for Women.* 1-79pp.
57. **Qurrat-Ul-Ain 2007:** Marine diatoms from the coast of Balochistan. *Department of Botany, Jinnah University for Women.* 1-92pp.

SCIENCE EXHIBITION

1. **04th March 2010:** “Plants and Environment” Inaugurated and prize distributed by the Director Prof. Dr. Saeed Malik and Prof. Dr. Seema Mehmood, Department of Botany, Institute of Pure & Applied Biology, Bahauddin Zakariya University, Multan.

2. **February 2008:** “Plants and Environment” Inaugurated and prize distributed by British scholar Dr. Mauvis Gore University Marine Biological Station Millport, Scotland) at Bahauddin Zakariya University, Multan.

SURVEY

1. **January 2008:** Vegetation survey of the Bundal and Buddo Island (for WWF).

XIXTH AWARD

1. **2008:** Star Laureate award 2008 in recognition of achievements in the field of Science and Technology.

RESEARCH PUBLICATIONS

2003

- 1 **Ghazala, B.**, M. Shameel, M.I. Choudhary, S. Shahzad and S.M. Legari, 2003. Phycochemistry and bioactivity of certain freshwater green algae of Sindh. *Pak J Bot* 35(5): 695-704. **(IF: 1.2)**

2004

- 2 **Ghazala, B.**, M. Shameel, M.I. Choudhary, S. Shahzad and S.M. Legari, 2004. Phycochemistry and bioactivity of *Tetraspora* (Volvocophyta) from Sindh. *Pak J Bot* 36(3): 531-547. **(IF: 1.2)**
- 3 **Ghazala, B.**, B. Naila, M. Shameel, S. Shahzad and S.M. Legari, 2004. Phycochemistry and bioactivity of two stonewort algae (Charophyta) of Sindh. *Pak J Bot* 36(4): 733-743. **(IF: 1.2)**
- 4 **Ghazala, B.**, M. Shameel, M.I. Choudhary, S. Shahzad and S.M. Legari, 2004. Phycochemistry and bioactivity of *Zygnema* (Zygnemophyceae) from Sindh. *Int J Biol Biotech* 1(3): 335-342. **(Y Category)**
- 5 **Ghazala, B.**, M. Shameel, M. I. Choudhary, S. Shahzad and S.M. Legari, 2004. Phycochemistry and bioactivity of two microalgae (Volvocophyta) from Sindh. *Int J Biol Biotech* 1(3): 343-350. **(Y Category)**

2005

- 6 **Ghazala, B.** and M. Shameel, 2005. Phycochemistry and bioactivity of some freshwater green algae from Pakistan. *Pharmaceut Biol* 43(4): 358-369. **(IF: 1.3)**
- 7 **Ghazala, B.**, M. Shameel, M.I. Choudhary, S. Shahzad and S.M. Legari 2005. Studies on phycochemistry and bioactivity of some green algae of Sindh. *Int J Phycol Phycochem* 1(1): 73-82.
- 8 Naila, B., **B. Ghazala**, M. Shameel, M.I. Choudhary and S.M. Legari, 2005. Phycochemistry and bioactivity of *Aphanothece* (Chroocophyceae, Cyanophyta) from Sindh. *Int J Phycol Phycochem* 1(1): 93-102.
- 9 Naila, B., **B. Ghazala**, M. Shameel, M.I. Choudhary and S.M. Legari, 2005. Phycochemistry and bioactivity of *Lyngbya* (Nostocophyceae Shameel) from Sindh. *Int J Phycol Phycochem* 1(2): 125-134.
- 10 **Ghazala, B.** and M. Shameel, 2005. Phycochemistry and bioactivity of three green algae in comparison with seaweeds of Sindh coast. *Pak J Mar Sci* 14(1): 123-131. **(Y Category)**

2006

- 11 Laila Shahnaz, **B. Ghazala** and M. Shameel, 2006. Phycochemistry and bioactivity of *Enteromorpha intestinalis* (Ulvophyceae, Chlorophyta) from Sindh, Pakistan. *Int J Phycol Phycochem* 2(1): 59-62.

- 12 **Ghazala, B.**, R. Ormond and F. Hannah 2006. Phytoplankton communities of Pakistan: I. Dinophyta and Bacillariophyta from the coast of Sindh. *Int J Phycol Phycochem* 2(2): 183-196.

2007

- 13 **Ghazala, B.**, B. Naila, M. Shameel and SM Leghari 2007. Phycochemistry and bioactivity of three Blue-Green algae of Sindh, Pakistan. *Int J Phycol Phycochem*.
- 14 **Ghazala, B.**, R. Ormond and F. Hannah 2007: Phytoplankton communities of Pakistan: II. Dinophyta and Bacillariophyta from the coast of Balochistan. *Int J Phycol Phycochem* 3(2): 127-134.

2008

- 15 **Ghazala, B.**, B. Naila, M. Shameel and SM Leghari 2008. Phycochemistry and bioactivity of *Pithophora oedogonia* (Siphonocladophyceae Shameel) from Sindh. *Int J Phycol Phycochem* 4(1): 31-34.
- 16 **Ghazala, B.**, R.F.G. Ormond and F. Hannah 2008. Phytoplankton communities of Pakistan: III Dinophyta and Bacillariophyta from Charn, Hajamro and Turshian creeks. *Int J Phycol Phycochem* 4(2): 137-140.
- 17 **Ghazala, B.** and EE. Valeem 2008. A preliminary survey of seaweeds and mangroves at Bandal and Buddo Islands in the northern Arabian Sea. *Int J Phycol Phycochem* 4(2): 165-170.
- 18 **Ghazala, B.** and M. Shameel 2008. A new species of silicoflagellates (Chrysophyta) from the coastal water of Sindh, Pakistan. *Int J Phycol Phycochem* 4(2): 209-210.

2009

- 19 **Ghazala, B.**, B. Naila and Shameel 2009. Phycochemical and bioactivity of ten freshwater algae from Pakistan. *Int J Algae* 11(1): 84-98.
- 20 **Ghazala, B.** 2009. A new species of *Ceratium* (Dinophyta) from coastal water of Balochistan, Pakistan. *Int J Phycol Phycochem* 5(1): 55-56.
- 21 **Ghazala, B.**, L. Hena, A. Zarina and M. Shameel 2009. Taxonomic survey of freshwater algae at the campus of BZ University of Multan, Pakistan. *Int J Phycol Phycochem* 5(1): 77-92.
- 22 **Ghazala, B.**, R. Ormond and F. Hannah 2009. Special and temporal distribution of Phytoplankton in the Firth of Clyde. *Int J Phycol Phycochem* 5(2): 127-134.
- 23 **Ghazala B.** and Arifa Habib 2009. Survey of freshwater Phytoplankton communities from Multan, Pakistan. *Int J Phycol Phycochem* 5(2): 177-182.

2010

- 24 **Ghazala, B.**, B. Naila and M. Shameel 2010. Fatty acids and biological activities of crude extracts of freshwater algae from Sindh. *Pak J Bot* 42(2): 1201-2012. **(IF: 1.2)**
- 25 Khalid, M.N., M. Shameel, **B. Ghazala** and V.U. Ahmad 2010. The bioactivity and phycochemistry of two stonewort algae (Charophycota) from Sindh. *Proc Pak Acad Sci* 47(4): 205-214.
- 26 **Ghazala, B.** and A. Shakil 2010. Qualitative analysis of freshwater Bacillariophycota in fish farms at Multan city, Pakistan. *Int J Phycol Phycochem* 6(2): 69-72.
- 27 **Ghazala, B.**, J. Sobia, and H. Arifa 2010. Analysis of algae growing in the different areas of Multan, Pakistan. *Int J Phycol Phycochem* 6(2): 115-122.
- 28 **Ghazala, B.**, K. Tasneem and G. Kholā 2010. Survey of freshwater algae (Cyanophycota and Chlorophycota) from BZ University of Multan. *Int J Phycol Phycochem* 6(2): 167-170. **2011**

- 29 **Ghazala, B.** and Arifa Habib 2011. Distribution of family Fragilaraceae (Bacillariophycota) in the region of Multan, Pakistan. *Pak J Bot* 43(1): 15-27. **(IF: 1.2)**
- 30 Ajaib, M., K. Zaheer-ud-din, **B. Ghazala** and Nadeemullah. *Senna artemisioides* of family Leguminosae and *Mansonia alliacea* of family Bignoniaceae: two new records to the Flora of Pakistan. *Biologia (Pakistan)*, 57(1&2): 1-5
- 31 Akhtar, M. and **B. Ghazala** 2011. Survey of algal genera from various freshwater habitats of Tahsil Kasur. *Int J Phycol Phycochem.* 7(1): 43-50.
- 32 Arifa, H. and **B. Ghazala** 2011. Distribution of Centric Diatoms from Multan, Pakistan. *Int J Phycol Phycochem.* 7(1): 29-34.
- 33 Khadija, A.M. and **B. Ghazala** 2011. Taxonomical study of freshwater algae from district Rahim Yar Khan. *Int J Phycol Phycochem.* 7(1): 69-74.

2012

- 34 Kholi, G. and **B. Ghazala** 2012. Biodiesel Production from Algae. *Pak J Bot* 44(1): 379-381. **(IF: 1.2)**
- 35 Ammad, A.F., **B. Ghazala** and R. Zubia 2012. Algae extracts and Methyl Jasmonate anticancer activities in prostate cancer: choreographers of 'the dance macabre'. *Cancer Cell Int.* 26;12(1): 50. **(IF: 1.9)**
- 36 Khalid, M.N., M. Shameel and **B. Ghazala** 2012. Bioactivity and Phycochemistry of two species of *Spirogyra* (Zygnemophyceae) from Pakistan. *Int J Algae* 14(3): 237-246.
- 37 **Ghazala, B.**, A. Toqeer and M.A. Hafeez 2012. Taxonomic study of *Cosmerium* (Desmidiophyceae) from Dera Ghazi Khan, Pakistan. *Int J Phycol Phycochem* 8(2): 181-188.

2013

- 38 **Ghazala, B.**, E. Hussain and A. Rehman. 2013. Comparative Analysis of Antioxidant Potential of *Sargassum* sp. And *Iyengaria* sp. Online *Pak J Medical Health Sci*, 1128-1129.
- 39 **Ghazala, B.** and N. Fatima. 2013. Antibacterial Activity of *Cladophora glomerata*. *Pak J Clini Biomed Res.* 1(1): 19-20.
- 40 **Ghazala, B.** and E. Hussain. 2013. *Sargassum* sp. has a higher Flavonoid Content as compared to *Iyengaria* sp. *Pak J Clini Biomed Res* 1(1): 21-23.
- 41 **Ghazala Butt, F.** Nargis. 2013. Antibacterial activity of *Cladophora glomerata* against Methicillin-resistant *Staphylococcus aureus*. *Pak J Clini Biomed Res.* 1(2): 42-43.
- 42 **Ghazala Butt, F.** Nargis. 2013. Antibacterial activity of *Cladophora glomerata* against *Pseudomonas aeruginosa*. *Pak J Clini Biomed Res* 1(2): 41-42.
- 43 **Ghazala, B.**, S. Arjumand and E.E. Valeem. 2013. Investigation of Saturated and Unsaturated Fatty Acids in *Cladophora Glomerata* collected from Lahore. *Int J Phycol Phycochem* 9(1): 13-20.
- 44 **Ghazala, B.** and S. Juveria. 2013. Wastewater Algal Diversity from two Localities of Lahore. *Int J Phycol Phycochem* 9(1): 57-62.
- 45 Sadiq, B. and **B. Ghazala**. 2013. Survey of freshwater algal genera from two localities of Lahore. *Int J Phycol Phycochem* 9(1): 69-74.
- 46 **Ghazala, B.**, N. Hussain, M.A. Rana and E.E. Valeem. 2013. Phcoremediation of Wastewater containing Mercury using Filamentous Algae from GC University Lahore. *Int J Phycol Phycochem* 9(1): 83-86.

- 47 **Ghazala, B.** and K. Muniza. 2013. A Survey of Fresh water Algae from Tubewells in Bahawalnagar.. *Int J Phycol Phycochem* 9(1): 93-100.
- 48 Farooqi AA, **B. Ghazala**, G. Yousaf, M.I. Qadir, U. Shaukat, Q. Mansoor, M. Awan, S Bhatti, A Begum 2013. Making personalized prostate cancer medicine a reality: challenges and opportunities in the re-establishment of gold standards. *Pak J Pharm Sci* 26(4): 831-40. (IF: 0.9)

2014

- 49 **Ghazala B.**, H. Ejaz, K. Abdur Rehman and H. Sidra. 2014. *Sargassum* sp has higher Phenolic contents than *Iyngaria* sp. **Online** *Pak J Medical Health Sci*
- 50 **Ghazala, B.**, H. Ejaz and Abdur Rehman. 2014. Ferrous ion-chelating for assay analysis of antioxidant potential of *Sargassum* sp. and *Iyngaria* sp. **Online** *Pak J Medical Health Sci*
- 51 Sehitoglu M.H., A.A. Farooqi, M.Z. Qureshi, **B. Ghazala**, and A. Aras. 2014. Anthocyanins: targeting of signaling networks in cancer cells. *Asian Pac J Cancer Prev* 15(5): 2379-81. (IF: 1.5)
- 52 Yen Y.H., A.A. Farooqi, Li KT, **B. Ghazala**, J.Y. Tang, C.Y. Wu, Y.B. Cheng, M.F. Hou and H.W. Chang. 2014. Methanolic extracts of *Solieria robusta* inhibits proliferation of oral cancer Ca9-22 cells via apoptosis and oxidative stress. *Molecules* 19(11): 18721-32. (IF=2.0)
- 53 Ejaz Hussain. **B. Ghazala**, M. Rizwana and S. Sadia. 2014. Evaluation of Cytotoxic Activity of *Sargassum* and *Iyngaria* sp on Lung Cancer Cell Line through MTT Assay Test. *Euro Academ Res* 2(2): 2081-2085.
- 54 Ejaz Hussain, A.B. Mirza and **B. Ghazala**. 2014 Evaluation of Different Carbon Sources in Production of Biosurfactant by Mycoflora of Southern Punjab Pakistan. *Euro Academ Res* 2(2): 2086-2092.
- 55 Ejaz Hussain, S. Farhat, M.T. Khan, A.B. Mirza and **B. Ghazala**. 2014. Evaluation of Different Nitrogen Sources in Production of Biosurfactant by Mycoflora of Southern Punjab Pakistan. *Europ Academ Res* 2(3): 3676-3686.
- 56 Ejaz, H., A.B. Mirza, M.T. Khan, A.A. Shah, **B. Ghazala**. 2014. Comparison of total flavonoid content of two brown seaweeds (*sargassum* sp and *iyngaria* sp) collected from southern coast of Karachi, Pakistan. *Ameri Res Thoughts* 1(1): 205-208.
- 57 Iqra, M., Y. Ghulam, M.T. Khan, S. Irshad, A.A. Shah, **B. Ghazala** and H. Ejaz. 2014. A physio-chemical soil study of greater and lesser Cholistan desert of southern Punjab Pakistan. *Euro Academ Res* 2(6): 7969-80.

2015

- 58 Basharat S, **B. Ghazala** and H. Nazim. 2015. Evaluation of antimicrobial competence of *Cladophora glomerata* and *Lyngbya diguetii*. *Biologia* 60(1): 169-172. (HEC Y Cetagory)

2016

- 59 Basharat, S., **B. Ghazala**, A.A. Farooq and M. Rashid. 2016. Effect of Artificially prepared food and algal food on the growth of *Lebister reticulates*. *Asian J Chem* 28(1): 126-128. (IF=0.15)
- 60 Ejaz, H., W. Li-Jun, J. Bo, R. Saba, **B. Ghazala** and Da-Yong Shi. 2016. A review of the components of brown seaweeds as potential candidates in cancer therapy. *Roy Soci Chem Adv* 6: 12592-12610. (IF=3.84)

- 61 Qureshi, M.Z., S. Jabeen, **B. Ghazala**, A. Aslam, S.K. Aaqvi, R. Attar, S. Tabassum, M. Nasir and A.A. Farooqi. 2016. Tudor tells about new twists in the story tale of SMURFs. *Cellu Molec Biol* 62(5): 38-43. (IF=1.2)
- 62 Hanif, U., A. Mukhtar, Z.D. Khan, T. Hussain, R. Jabeen and **B. Ghazala**. 2016. Anatomical study of two Hydrophytes – *Pistia stratiotes* L. and *Centella asiatica* (L.) Urban. *Biologia* 62 (1): 151-155. (HEC Y Cetagory)
- 63 Hanif, U., **B. Ghazala**, S. Farid and A.A. Farooqi. 2016. Exploring new sources of Antioxidants and Phenolic Contents from a Marine Red Alga *Agardhiella robusta* (Grevi.) Børgn. collected from Karachi coast. *J Anim Pl Sci* 26(05).(IF=0.57)

2017

- 64 **Ghazala B**, R. Attar, S. Tabassum, A. Areas, M. Imran, U. Ozbery and A.A. Farooqi. 2017. Regulation of signal transduction Cascades by Pterostilbenes in different Cancer: Is it a death knell for Oncogenic pathways. *Cellular & Molecular Biology* 63(12): 5-10. (IF=0.9).
- 65 Nadeem-Ullah and **B. Ghazala**. 2017. Ecotaxonomic studies of some filamentous members of Cyanophycota in four Districts of Punjab, Pakistan. *J Biodiv & Environ Sci* 11(4): 152-156.

2018

- 66 Nazim, H., **B. Ghazala** and S. Zia. 2018. Methodical analysis of substantial and synthetic equities of lipids and biodiesel extricated from grown *Euglena polymorpha*. *Transylv Rev XXVI(27)*: ONLINE: 1221-1249. (IF=0.48)
- 67 Yalim, I., **B. Ghazala**, S.G. Khalid and AA Farooqi. 2018. Roll of CEACAM in different cancers. *Chapter* Recent trends in cancer biology: spotlight on signaling cascades and microRNAs. ISBN: 978-319-71553-7.
- 68 Nadeem-ullah and **B. Ghazala** and Qurat-ulAin. 2018. Eco-taxonomic distribution of some colonial Cyanophycota from North-East Punjab, Pakistan. *Pak J Bot* 50(6): 2325-2330. (IF=1.2)
- 69 **Ghazala B.**, Romero MA, Tahir, Farooqi AA. 2018. Emerging themes of regulation of oncogenic proteins by *Solanum nigrum* and its bioactive molecules in different cancers. *J Cell Biochem* DOI: 10.1002/jcb.27258. (IF=2.959)
- 70 **Ghazala, B.**, Ch. Shafaq and H. Nazim. 2018. Production of bioethanol from two monocultured species *Cladophora fracta* (Dillw.) Kützing and *Euglena polymorpha* Dangeard. *Ecolo. Pollu. Environ. Sci* 1(4): 103-110.

2019

- 71 **Ghazala, B.**, M. Qureshi, R. Attar, M. Akram, Y. Birinci, G.Ş. Karatoprak, M.L. Gasparri and A.A. Farooqi. 2019. Breast Cancer Metastasis and Drug Resistance, *Chapter*: Role of mTORC1 and mTORC2 in Breast Cancer: Therapeutic Targeting of mTOR and Its Partners to Overcome Metastasis and Drug Resistance. ISSN 0065-2598 ISSN 2214-8019 (electronic) <https://doi.org/10.1007/978-3-030-20301-6> (IF=2.0)
- 72 **Ghazala B.**, Ilhan Y. Rukset A.A. Aras, M.A. Romero-Hernández, M. Qureshi, J. Purenovic and A.A. Farooqi. 2019. Advances in Experimental Medicine and Biology, *Chapter*: NEDD4 Family of E3 Ubiquitin Ligases in Breast Cancer: Spotlight on SMURFs, WWP5 and NEDD4. ISSN 0065-2598 ISSN 2214-8019 (electronic) <https://doi.org/10.1007/978-3-030-20301-6> (IF= 2.0)

73 **Ghazala, B. 2019.** Effects of brown algae (*Sargassum* sp.) as manure of growth of *Pisum sativum*. *J. Plant Physio Patho* online (IF=0.92)

2020

74 **Ghazala Butt**, Ammad Ahmad Farooqi, Aima Adylova, Rukset Attar, Seher Yilmaz, Konysbayeva Kenzhekul Konysbayevna, Uteuliyev Yerzhan Sabitaliyevich, Maria Luisa Gasparri, Baojun Xuh. 2020. Review: Vitamin C as an Anticancer Agent: Regulation of Signaling Pathways. *Curr. Top. Medici. Chemi.* 20: 1-08. DOI: 10.2174/1568026620666200710102841 (IF=3.218)

75 **Ghazala, B.,** Luteolin mediated targeting of protein network and microRNAs in different cancers: Focus on JAK-STAT, NOTCH, mTOR and TRAIL-mediated signaling pathways *Pharmacological Research* (IF-5.893)

76 Nazim H. and **Ghazala, B.** 2020. Sustainable production of high-quality biodiesel using hydrothermal liquefaction technique from novel unicellular freshwater microalga: *Euglena gracilus*. *Comp. Rend. Acad. Bulg. Sci.*, 73(12): 1690-1695.

2021

77 **Ghazala B.,** O.Ulku, M. Durr-e-Shahwar, R. Atta, Y. Lara, A.A. Farooqi. 2021. Regulation of cell signaling pathways by Wogonin in different cancers: Mechanistic review. *Cell. Mol. Biol.*, 67(2): 1-7. <http://dx.doi.org/10.14715/cmb/2021.67.2.1> (IF= 1.436)

78 Xiukun L., R. Attar, I. Mobeen, I.M. Yulaevna, A. Aras, **B. Ghazala***, A.A. Farooqi. 2021. Regulation of cell signaling pathways by Schisandrin in different cancers: Opting for "Swiss Army Knife" instead of "Blunderbuss". *Cell. Mol. Biol.*, 67(2): 25-32. <http://dx.doi.org/10.14715/cmb/2021.67.2.5> (IF= 1.436)

79 Farooqi1, A.A., F. Tahir, M. Fakhar, **B. Ghazala***, T.C. Pimentel, N. Wu, I.M. Yulaevna, R. Attar. 2021. Antimetastatic effects of Citrus-derived bioactive ingredients: Mechanistic insight. *Cell. Mol. Biol.*, 67(2): 178-186. <http://dx.doi.org/10.14715/cmb/2021.67.2.28> (IF= 1.436)

80 Nadeem Ullah, **B. Ghazala**, M. Jaffer and Q. Ain. 2021. Morpho-anatomical characterization of some members of euglenophycota (algae) of north-east Punjab, Pakistan based on light microscopy (LM) and scanning electron microscopy (SEM). *Microsc. Res. Techniq.*, 1-7. <https://doi.org/10.1002/jemt.23946> (IF= 2.76)

2022

81 Farooqi, AA., Wen Ru, R. Attar, S.Taverna, **B. Ghazala**, B. Xu. 2022. Regulation of CellSignaling pathways by berbmine in different cancers. *Int. J. Mol Sci.*, 23(25): 2758-270. <https://doi.org/10.3390/qms23052758> (IF= 5.35)

82 Juveria S., **B. Ghazala** A.S. Anis, N.S. Adnan, A. Sajad, L.J. Basit, R.A. Nader, and M. Hussaan. 2022. Phycochemical and biological activities from different extracts of *Padina antillarum* (Kützinger) Piccone. *Fronti. Plant Sci.*, DOI: 10.3389/fpls.2022.929368 (IF= 6.32)

REFERENCES

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