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Abdel-Rhman Z Gaafar

2022

Egyptian – Male – Married

Date of Birth: 6th October 1987

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■ O B J E C T I V E S

Eager and ambitious for Joining professional and interesting academic organization that would provide me with an opportunity to fully utilize my intellectual and technical skills, extend my current knowledge and to build a research career which can help me in acquiring an aspiring position in my life.

■ E D U C A T I O N

(Oct.2013- Oct. 2017) PhD in Botany - Faculty of Science - KSU - KSA, Excellent (GPA 5.00/5.00 with degree of honor).

Thesis entitled “De-novo whole genome assembly and transcriptome analysis of drought-induced stress in the desert plant *Calotropis procera*”

(Oct.2010- Feb. 2013) M.Sc. in Botany - Faculty of Science – KSU - KSA, Excellent (GPA 4.94 / 5.00 with degree of honor).

Thesis entitled “Assessment of genetic diversity in endangered plant *Breonadia salicina* using ISSR and Chloroplast DNA markers”

(Sep.2004- Jul. 2008) B.Sc. in Biotechnology (English program) - Faculty of Agriculture - Cairo University - Egypt, Excellent (86.21%) with degree of honor

■ P R O F E S S I O N A L E X P E R I E N C E

- 2018 – till now; Assistant professor with responsibilities of teaching BSc courses, Coordinator of postgraduate accreditation committee, Coordinator of postgraduate students follow up committee, member of BSc program accreditation committee, head of genetics practical courses establishment committee and member of plant molecular biology research group.
Department of Botany and Microbiology, College of Science, King Saud University, Riyadh – Saudi Arabia.

- 2015 – 2018; working as Researcher A - with teaching load in Department of Botany and Microbiology, College of Science, King Saud University, Riyadh – Saudi Arabia.
- 2014 – 2018; working as Researcher in NPST research project no. (11-BIO2089-02) entitled “Molecular tools for accelerated domestication of a new heat, drought and salinity tolerant forage crop for Saudi Arabia”. KSU – Saudi Arabia
- 2012 – 2013; working as principal investigator in KACST research project no. (A-S-12-0922) entitled “Assessment of genetic diversity in endangered plant *Breonadia salicina* using ISSR and Chloroplast DNA markers”. KSU – Saudi Arabia
- 2011 – 2013; working as Researcher in NPST research project no. (BIO-1289) entitled “DNA Bank of flora of Saudi Arabia”. KSU – Saudi Arabia
- 2008 – 2010; Research Assistant in Molecular Genetics & Genome Mapping laboratory -Agriculture Genetic Engineering Research Institute (AGERI) - Agriculture Research Center (ARC). Giza – Egypt.

■ **SCIENTIFIC EXPERTISE & PARTICIPATION IN RESEARCH PROJECTS**

- 2020 - till date: PI of the plant biotechnology research group/ Dept. of Botany and Microbiology - Col. of Science – King Saud University.
- 2011 - till date: Member in the plant molecular Biology research group/ Dept. of Botany and Microbiology - Col. of Science – King Saud University.
- 2013 - till date: Teaching several courses e.g. (General Botany -

Genetics - Cytogenetics - Plant physiology – Plant nutrition - Population genetics – Plant Molecular biology - Plant growth and regulation - General Microbiology) / Dept. of Botany and Microbiology - Col. of Science - King Saud University.

- Reviewer in many ISI journals.
- Member in Dept. of Botany and Microbiology committees (Academic Evaluation and Accreditation - Continuous Improvement and Quality Assurance - Alumni affairs and employment).
- Trainer in Mawhiba (Talent) program workshop/ Dept. of Botany and Microbiology
- Faculty of Science - King Saud University- 26- 30 November 2017.
- Trainer in the workshop entitled " In vitro conservation and cryopreservation of Date Palm (*Phoenix dactylifera*)"- Faculty of Science - King Saud University- 9- 11 February 2015.
- Trainer in the workshop entitled " Establishment of DNA Bank of Saudi Arabia flora: Reality and Challenges " - Faculty of Science - King Saud University - April 2013
- Principal investigator in research project no. (A-S-12-0922) funded by KACST entitled “Assessment of genetic diversity in endangered plant *Breonadia salicina* using ISSR and Chloroplast DNA markers”. KSU – Saudi Arabia

◆ SKILLS

- Good experience in molecular biology methods & techniques
 - Nucleic acid extraction (DNA and RNA Extraction)
 - Nucleic acid quality and integrity check (DNA and RNA Gel Electrophoresis – Nanodrop – spectrophotometer – Bioanalyzer)
 - PCR based techniques (Reverse Transcription RT-PCR - Molecular Markers “ISSR- RAPD- ITS - SSR - SCoT – SCAR - AFLP” - DNA

Fingerprinting – etc.)

- Genetic diversity, Genetic fidelity, abiotic stresses, Measurement of physiological parameters “protein content - Carbohydrates - Chlorophyll - Isozymes”, etc.).
- Next generation sequencing (Whole genome and transcriptome sequencing) and analysis
- In Bioinformatics:
 - Sequence databases like (NCBI, EMBL) and retrieval of Sequences and Analysis e.g BLAST.
 - Genetic diversity within and between population (Popgene – GenALex – Mega 7 – NTSYSpc)
 - DNA sequence analysis (clustalX – Dnasp)
 - Primer designing for PCR amplification.
 - NGS sequence analysis (quality check – sequence filtration – adaptor removal
 - deduplication – base correction – *de novo* and reference based assembly – differential expression analysis – gene annotation)
- Presentation skills.
- Have high skills when dealing with different computer software (Ordinary & Scientific) and hardware which further enhanced through several training courses.
- Languages: English (**Good command**) **IELTS 6.5**

■ ACHIEVEMENTS

- Honoring from King Saud University manager in the honoring ceremony of the 5th Students' Scientific Symposium of KSU (2014) and Awarded 4th Rank (Biology branch) - King Saud University, Riyadh, Saudi Arabia.
- Certificate of honor for Scientific Excellence (2005-2008), Col. of Agriculture - Cairo University - Egypt.
- Member of the Excellent students' club (2005-2008), Col. of Agriculture - Cairo University - Egypt.

■ CONFERENCES & ACTIVITIES

- International Conference on Healthcare, Applied Science and Engineering. Ontario College for Research & Development, Paris – France 2017.
- The 7th Students' Scientific Symposium held at King Saud University in April 2016.
- The 2nd Saudi International Biotechnology Conference, held at King Abdul-Aziz City for Science and Technology, Saudi Arabia in February 2016.
- The International Conference on Scientific Publishing held at King Saud University in October 2015.
- The 5th Students' Scientific Symposium held at King Saud University in April 2014.
- The 3rd Saudi International Nanotechnology Conference, held at King Abdul-Aziz City for Science and Technology, Saudi Arabia in December 2014.
- The International Conference on Medical Technology, held at King

Abdul-Aziz City for Science and Technology, Saudi Arabia in September 2013.

- The 5th International Conference on Water Resources and Arid Environments held at King Saud University in January 2013.
- The International Conference on Nanotechnology, held at King Abdulaziz City for Science and Technology, Saudi Arabia in November 2012.
- The International Conference on Biotechnology, held at King Abdulaziz City for Science and Technology, Saudi Arabia in September 2012.

■ **PATENT**

Al-Ameri A. A., Al-Qurainy F., Khan S., Nadeem M., **Gaafar A. Z.**, 2017. Method of Identifying Date Palm Gender Using SCAR Primers. The United States Patent and Trademark Office. Patent number: 9,598,732.

■ **BOOKS**

Al-Qurainy F., Khan S., Nadeem M. Al-Ameri A. A., Tarroum M., **Gaafar A. Z.**, 2021. Identification of flora of Saudi Arabia using Sequence Based DNA Markers - DNA banking practice. (under Review)

■ **PUBLICATIONS**

1. Qahtan AA, Al-Atar AA, Abdel-Salam EM, El-Sheikh MA, **Gaafar AZ** and Faisal M, (2021). Genetic Diversity and Structure Analysis of a Worldwide Collection of Faba bean (*Vicia faba*) Genotypes using ISSR Markers. International Journal of Agriculture and Biology, 25(3), 683-691.

2. Elhaj, M. K., Yagi, S. M., Qahtan, A. A., Alshameri, A., Hodhod, M., Almunqedhi, B., ... & **Gaafar, A. Z.** (2021). Screening of phytochemicals and bioactivities of different parts of Ludwigia erecta (L.) H. Hara. *Biotechnology & Biotechnological Equipment*, 35(1), 291-297.
3. Alshameri, A., Al-Qurainy, F., **Gaafar, A. Z.**, Khan, S., Nadeem, M., Alansi, S., ... & Salih, A. M. (2020). Identification of Differentially Expressed Drought-Responsive Genes in Guar [Cyamopsis tetragonoloba (L.) Taub]. *International Journal of Genomics*, 2020.
4. Hodhod, M. S. E. D., **Gaafar, A. Z.**, Alshameri, A., Qahtan, A. A., Noor, A., & Abdel-Wahab, M. (2020). Molecular characterization and bioactive potential of newly identified strains of the extremophilic black yeast Hortaea werneckii isolated from Red Sea mangrove. *Biotechnology & Biotechnological Equipment*, 34(1), 1288-1298.
5. Alshameri, A., Al-Qurainy, F., **Gaafar A. Z.**, Khan, S., Nadeem, M., & Alansi, S. (2020). Identification of Heat-Responsive Genes in Guar [Cyamopsis tetragonoloba (L.) Taub]. *International journal of genomics*, 2020.
6. Al-Qurainy, F., Khan, S., Tarroum, M., Nadeem, M., Alansi, S., Alshameri, A., & **Gaafar A. Z.**, (2020). Comparison of salt tolerance between two potential cultivars of Phoenix dactylifera L. growing in Saudi Arabia. *Pak. J. Bot*, 52(3), 753-761.
7. Alansi, S., Al-Qurainy, F., Nadeem, M., Khan, S., Alshameri, A., Tarroum, M., & **Gaafar A. Z.**, (2020). An efficient micropropagation protocol via indirect organogenesis from callus of economically valuable crop date palm (phoenix dactylifera L.) cultivars “sagai and khalas”. *Pak. J. Bot*, 52(6), 2021-2030.
8. Al-Shameri A., Al-Qurainy F., **Gaafar A. Z.**, Khan S., Nadeem M., Al-Ameri A., Tarroum M., Ashraf M., 2019. Comprehensive Stress-Based De Novo

Transcriptome Assembly and Annotation of Guar (*Cyamopsis tetragonoloba* (L.) Taub.): An Important Industrial and Forage Crop. International Journal of Genomics 2019(4):1-14

9. Al-Shameri A., Al-Qurainy F., Khan S., Nadeem M., **Gaafar A. Z.**, Al-Ameri A., Tarroum M., Alansi S., Ashraf M., 2019. Morpho-physiological responses of guar [*Cyamopsis tetragonoloba* (L.) Taub.] to multiple stresses of drought, heat and salinity. Pakistan Journal of Botany 51(3).
10. Alansi S., Al-Qurainy F., Khan S., Nadeem M., Tarroum M., Al-Shameri A., **Gaafar A. Z.**, 2019. Cryopreservation: A tool to conserve Date palm in Saudi Arabia. Saudi Journal of Biological Sciences, DOI: 10.1016/j.sjbs.2019.02.004
11. Alansi S., Al-Qurainy F., Khan S., Nadeem M., **Gaafar A. Z.**, Tarroum M., Al-Shameri A., 2018. Efficient micropropagation via somatic embryogenesis of potential cultivar sagai of *Phoenix Dactylifera* L.. Pakistan Journal of Botany 50(6):2251-2258.
12. Al-Qurainy F., Al-Ameri A., Khan S., Nadeem M., **Gaafar A. Z.**, Tarroum M., 2018. SCAR Marker for Gender Identification in Date Palm (*Phoenix dactylifera* L.) at the Seedling Stage. International Journal of Genomics, Article ID 3035406.
13. Alansi S., Al-Qurainy F., Khan S., Nadeem M., Tarroum M., Al-Shameri A., **Gaafar A. Z.**, 2017. Genetic fidelity testing in regenerated plantlets of cryopreserved and non- cryopreserved cultivars of *Phoenix dactylifera* L. Pakistan Journal of Botany. 49(6): 2313-2320.
14. Tarroum M., Al-Qurainy F., Khan S., Nadeem M., Al-Shameri A., **Gaafar A. Z.**, Alansi S., 2017. Assessment of salt tolerance accessions of *Sesbania sesban* (L.) Merril using some morphological and biochemical parameters. Fresenius Environmental Bulletin. 26(12A), 7780-7788.

15. Al-Shameri A., Al-Qurainy F., Khan S., Nadeem M., **Gaafar A. Z.**, Tarroum M., Al-Ameri A., Alansi S., 2017. Appraisal of guar [Cyamopsis tetragonoloba (L.) Taub.] accessions for forage purpose under the typical Saudi arabian environmental conditions encompassing high temperature, salinity and drought. *Pakistan Journal of Botany* 48(1):131-135.
16. Al-Qurainy F., Nadeem M., Khan S., Alansi S., Tarroum M., Al-Ameri A., **Gaafar A. Z.**, Al-Shameri A., 2017. Rapid plant regeneration, validation of genetic integrity by ISSR markers and conservation of Reseda pentagyna an endemic plant growing in Saudi Arabia. *Saudi Journal of Biological Sciences*. doi.org/10.1016/j.sjbs.2017.07.003.
17. Al-Qurainy F., Khan S., Nadeem M., Tarroum M., **Gaafar A. Z.**, 2017. Antioxidant System Response and cDNA-SCoT Marker Profiling in Phoenix dactylifera L. Plant under Salinity Stress. *International Journal of Genomics* (9):1-10.
18. Al-Qurainy F., Nadeem M., Khan S., Tarroum M., Alansi S., Al-Ameri A., **Gaafar A. Z.**, Al-Shameri A., 2017. Assessing genetic fidelity in regenerated plantlets of date palm cultivars after cryopreservation. *Fresenius Environmental Bulletin* 26(2a):1727-1735.
19. Al-Ameri A. A., Al-Qurainy F., **Gaafar A. Z.**, Khan S., Nadeem M., 2016. Molecular identification of sex in Phoenix dactylifera using Inter Simple Sequence Repeat. *BioMed Research International*. Article ID 4530846.
20. Al-Ameri A. A., Al-Qurainy F., **Gaafar A. Z.**, Khan S., Nadeem M., 2016. Male specific gene expression in dioecious phoenix dactylifera (Date palm) tree at flowering stage. *Pakistan Journal of Botany* 48(1):131- 135.
21. **Gaafar A. Z.**, Al-Qurainy F., Khan S., 2014. Assessment of genetic diversity in the endangered populations of Breonadia salicina (Rubiaceae) growing in The

Kingdom of Saudi Arabia using inter-simple sequence repeat markers. BMC Genetics, 15:1.

22. Al-Qurainy F., Khan S., Nadeem M., Tarroum M., **Gaafar A. Z.**, 2014. Selection of DNA barcoding loci for *Nepeta deflersiana* Schweinf. ex Hedge from chloroplast and nuclear DNA genomes. Genetics and molecular research, 13 (1): 1144-1151.
23. Al-Qurainy F., **Gaafar A. Z.**, Khan S., Nadeem M., Al-Ameri A. A. and Tarroum M., 2014. Genetic Diversity in *Breonadia salicina* based on Intra-Species Sequence Variation of Chloroplast DNA Spacer Sequence. Pak. J. Bot., 46(2): 599-604.
24. Al-Qurainy F., Nadeem M., Khan S., Alansi S., Tarroum M., and **Gaafar A. Z.**, 2014. Storage, regeneration and genetic stability of synthetic seeds of *Ochradenus arabicus*: a high value medicinal plant. Fresenius Environmental Bulletin; 23(5):1255-1259.
25. Al-Qurainy F. H., **Gaafar A. Z.**, Khan S., Nadeem M., Tarroum M., Alaklabi A. and Thomas J., 2013. Antibacterial activity of leaf extract of *Breonadia salicina* (Rubiaceae), an endangered medicinal plant of Saudi Arabia. Genet. Mol. Res. 12 (3): 3212-3219.
26. **Gaafar A. Z.**, Ghdan A. A., Siddiqui M. H., Al-Whaibi M. H., Basalah M. O., Ali H. M. and Sakran A. M., 2012. Influence of sulfur on cadmium (Cd) stress tolerance in *Triticum aestivum* L. African Journal of Biotechnology.11 (43): 10108 - 10114.

▪ TRAINING EXPERIENCE

Training	Place
<ul style="list-style-type: none"> Innovation and Intellectual property workshops 09-13/04/2017 	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> Effective university teaching skills 27- 28/03/2017 	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> Designing and building of an academic course 19-20/03/2017 	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> Collaborative English Communication 05- 07/03/2017 	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> Continual improvement process (Kaizen) 28- 29/02/2017 	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> Solving problems and making decisions 21- 22/02/2017 	Deanship of Skills Development, KSU, Saudi Arabia
<ul style="list-style-type: none"> Measurement of mRNA and long non-coding RNAs using next-generation sequencing (RNA seq) 21/04/2016 	NowGen IT training center, Manchester, United Kingdom
<ul style="list-style-type: none"> Introduction to genome variation analysis using NGS 18-19/04/2016 	Bioinformatics Training Room, Craik-Marshall Building, Cambridge University, Cambridge, United Kingdom
<ul style="list-style-type: none"> Network visualization and analysis of biological data 14-15/04/2016 	Bioinformatics Training Room, Craik-Marshall Building, Cambridge University, Cambridge, United Kingdom
<ul style="list-style-type: none"> Introduction to Next Generation Sequencing 03-07/04/2016 	European Bioinformatics Institute (EMBL-EBI) - Wellcome Genome Campus, Hinxton, Cambridge, United Kingdom
<ul style="list-style-type: none"> Breaking New Ground in plant biology workshop 31/03/2016 	Distinguished scientist fellowship program, College of Science, KSU, Saudi Arabia
<ul style="list-style-type: none"> Molecular Biology and Heat Stress Response workshop 07-08/12/2015 	Dept. of Botany & Microbiology, College of Science, KSU, Saudi Arabia
<ul style="list-style-type: none"> Trainer in "In vitro conservation and cryopreservation of Date Palm" workshop 09-12/02/2015 	Dept. of Botany & Microbiology, College of Science, KSU, Saudi Arabia

<ul style="list-style-type: none"> Trainer in "Establishment of a DNA Bank of Flora of Saudi Arabia: Prospects and Challenges" workshop 20-22/04/2013 	Dept. of Botany & Microbiology, College of Science, KSU, Saudi Arabia
<ul style="list-style-type: none"> Diploma of Bioinformatics 06/04/2008 – 20/07/2008 	SIRA (Scientific Informatics Research Academy), Egypt
<ul style="list-style-type: none"> Practical Microbiology program 15/08/2006 – 15/09/2006 	ESRU (Environmental Studies & Research Unit), Col. of Agriculture, Cairo university, Egypt
<ul style="list-style-type: none"> Advanced molecular genetics & tissue culture techniques 05-16/08/2007 	AGERI (Agriculture Genetic Engineering Research Institute), Giza, Egypt
<ul style="list-style-type: none"> International Computer Driving License (ICDL) 1/2/2008 – 15/3/2008 	CompEx for IT center, Cairo, Egypt
<ul style="list-style-type: none"> A+ "Computer technical training course" 1/7/2008 – 1/8/2008 	ESS (E-Solution System), Giza, Egypt

NCBI SUBMITTED SEQUENCES

Accession numbers of published sequences in NCBI database generated from economic, rare, endangered, and medicinal plants using various PCR barcoding techniques:

KU243700 KJ623266 KF805088 KF805089 KF805090 KF805091 KF805092 KF805094
 KF805095 KF805093 KF805096 KF805097 KF805098 KF805099 KF805100 KF805101
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► REFERENCES

Available upon request.