# Keywords Index Volume 33, Numbers 1-4

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### BIOLOGY

Keyword	Title	Number	Pages
Angelman syndrome	Clinical Evaluation Followed by Molecular Diagnosis in a Multiplex Pedigree of Angelman Syndrome: A Case Report	4	305-309
Antibacterial	Evaluation of The Effect of Plantago Ovata Plant Extract on the Expression of Emerging Beta-lactamase Genes in Clinically Isolated Multidrug-resistant <i>Klebsiella pneumoniae</i> Strains of COVID-19 Patients	2	117-124
Beta-lactamase	Evaluation of The Effect of Plantago Ovata Plant Extract on the Expression of Emerging Beta-lactamase Genes in Clinically Isolated Multidrug-resistant <i>Klebsiella pneumoniae</i> Strains of COVID-19 Patients	2	117-124
Cu-containing enzymes	Foliar Application of Nano Tetraammine Copper (II) Sulfate Complex Influences Cu and Fe Homeostasis, Phenolics and Lignin Biosynthesis in Tobacco (Nicotiana rustica) Plants	2	105-110
Cystitis	Assessment of the Antibacterial Effect of the Oliveria decumbens vent. Essential Oil on Escherichia coli-induced Cystitis in the Rat Model	4	311-31
Direct organogenesis	A 2,4-D-Free Combined Direct Organogenesis-Indirect Somatic Embryogenesis Protocol for Mass Propagation of Date Palm ( <i>Phoenix dactylifera L.</i> ) <i>cv</i> .Barhi	2	125-13
E. coli	Assessment of the Antibacterial Effect of the Oliveria decumbens vent. Essential Oil on Escherichia coli-induced Cystitis in the Rat Model	4	311-31
Familial recurrence	Clinical Evaluation Followed by Molecular Diagnosis in a Multiplex Pedigree of Angelman Syndrome: A Case Report	4	305-30
Foliar Application	Foliar Application of Nano Tetraammine Copper (II) Sulfate Complex Influences Cu and Fe Homeostasis, Phenolics and Lignin Biosynthesis in Tobacco (Nicotiana rustica) Plants	2	105-11
Germline mosaicism	Clinical Evaluation Followed by Molecular Diagnosis in a Multiplex Pedigree of Angelman Syndrome: A Case Report	4	305-30
Glucose Oxidase	Optimization of Synthetic Glucose Oxidase Gene Using A Recombinant Combination Strategy in Pichia Pastoris GS115	1	5-18
Glucose Oxidase	The Role of Cellulose Binding Heptapeptide in Immobilizing Glucose Oxidase to Cellulosic Surfaces	3	213-22
Heavy metals removal	Isolation and Characterization of Heavy Metal-Resistant Plant Growth Promoting Rhizobacteria (PGPR) as Candidates for	3	205-21

	Simultaneous Enhancement of Plant Growth and Bioremediation of Agricultural Metal-Polluted Soils		
Heptapeptide	The Role of Cellulose Binding Heptapeptide in Immobilizing Glucose Oxidase to Cellulosic Surfaces	3	213-22
Herbal agent	Assessment of the Antibacterial Effect of the Oliveria decumbens vent. Essential Oil on Escherichia coli-induced Cystitis in the Rat Model	4	311-31
IAA production	Isolation and Characterization of Heavy Metal-Resistant Plant Growth Promoting Rhizobacteria (PGPR) as Candidates for Simultaneous Enhancement of Plant Growth and Bioremediation of Agricultural Metal-Polluted Soils	3	205-21
K. pneomoniae	Evaluation of The Effect of Plantago Ovata Plant Extract on the Expression of Emerging Beta-lactamase Genes in Clinically Isolated Multidrug-resistant <i>Klebsiella pneumoniae</i> Strains of COVID-19 Patients	2	117-124
Lignin	Foliar Application of Nano Tetraammine Copper (II) Sulfate Complex Influences Cu and Fe Homeostasis, Phenolics and Lignin Biosynthesis in Tobacco (Nicotiana rustica) Plants	2	105-110
Mental retardation	Clinical Evaluation Followed by Molecular Diagnosis in a Multiplex Pedigree of Angelman Syndrome: A Case Report	4	305-30
Micropropagatio n	A 2,4-D-Free Combined Direct Organogenesis-Indirect Somatic Embryogenesis Protocol for Mass Propagation of Date Palm ( <i>Phoenix dactylifera L.</i> ) cv.Barhi	2	125-13
Molecular diagnosis	Clinical Evaluation Followed by Molecular Diagnosis in a Multiplex Pedigree of Angelman Syndrome: A Case Report	4	305-30
Nano Complex	Foliar Application of Nano Tetraammine Copper (II) Sulfate Complex Influences Cu and Fe Homeostasis, Phenolics and Lignin Biosynthesis in Tobacco (Nicotiana rustica) Plants	2	105-11
Nitrogen fixation	Isolation and Characterization of Heavy Metal-Resistant Plant Growth Promoting Rhizobacteria (PGPR) as Candidates for Simultaneous Enhancement of Plant Growth and Bioremediation of Agricultural Metal-Polluted Soils	3	205-21
Nitrucellulose	The Role of Cellulose Binding Heptapeptide in Immobilizing Glucose Oxidase to Cellulosic Surfaces	3	213-22
Oliveria decumbens	Assessment of the Antibacterial Effect of the Oliveria decumbens vent. Essential Oil on Escherichia coli-induced Cystitis in the Rat Model	4	311-31
P. ovata	Evaluation of The Effect of Plantago Ovata Plant Extract on the Expression of Emerging Beta-lactamase Genes in Clinically Isolated Multidrug-resistant <i>Klebsiella pneumoniae</i> Strains of COVID-19 Patients	2	117-12

pGAPZA/GOX	The Role of Cellulose Binding Heptapeptide in Immobilizing Glucose Oxidase to Cellulosic Surfaces	3	213-225
	Glucose Oxidase to Centriosic Surfaces		
Phenolics	Foliar Application of Nano Tetraammine Copper (II) Sulfate Complex Influences Cu and Fe Homeostasis, Phenolics and Lignin Biosynthesis in Tobacco (Nicotiana rustica) Plants		
Phoenix dactylifera L.	A 2,4-D-Free Combined Direct Organogenesis-Indirect Somatic Embryogenesis Protocol for Mass Propagation of Date Palm ( <i>Phoenix dactylifera L.</i> ) cv.Barhi	2	125-132
Phosphate solubilizer	Isolation and Characterization of Heavy Metal-Resistant Plant Growth Promoting Rhizobacteria (PGPR) as Candidates for Simultaneous Enhancement of Plant Growth and Bioremediation of Agricultural Metal-Polluted Soils	3	205-211
Pichia pastoris	The Role of Cellulose Binding Heptapeptide in Immobilizing Glucose Oxidase to Cellulosic Surfaces	3	213-225
Pichia Pastoris GS115	Optimization of Synthetic Glucose Oxidase Gene Using A Recombinant Combination Strategy in Pichia Pastoris GS115	1	5-18
Plant growth regulator	A 2,4-D-Free Combined Direct Organogenesis-Indirect Somatic Embryogenesis Protocol for Mass Propagation of Date Palm ( <i>Phoenix dactylifera L.</i> ) cv.Barhi	2	125-132
Recombinant Combination Strategy	Optimization of Synthetic Glucose Oxidase Gene Using A Recombinant Combination Strategy in Pichia Pastoris GS115	1	5-18
Somatic embryos	A 2,4-D-Free Combined Direct Organogenesis-Indirect Somatic Embryogenesis Protocol for Mass Propagation of Date Palm ( <i>Phoenix dactylifera L.</i> ) cv.Barhi	2	125-132

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#### CHEMISTRY

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Ag <sub>2</sub> S	Balangu/Fe <sub>3</sub> O <sub>4</sub> /Ag <sub>2</sub> S/Polyurethane as an Innovative Bio- Nanocomposite Hydrogel: Synthesis, Characterization, Swelling and Drug Delivery Capacity	3	233-243
Anticancer activity	Swering and Drug Denvery Capacity Short Communication Synthesis and Cytotoxic Assessment of Thieno pyridine Derivatives	3	227-232
Balangu	Balangu/Fe <sub>3</sub> O <sub>4</sub> /Ag <sub>2</sub> S/Polyurethane as an Innovative Bio- Nanocomposite Hydrogel: Synthesis, Characterization, Swelling and Drug Delivery Capacity	3	233-24
Biological synthesis	Photo-Mediated Preparation of Silver Nanoparticles Dry Concentrate in an Organic Solvent System, Using Culture Supernatant of <i>Klebsiella pneumonia</i> : A Preliminary Study	2	133-13
Butyrylcholinesterase	Novel 4-hydroxycoumarin Derivatives Linked to N-benzyl Pyridinium Moiety as Potent Acetylcholinesterase Inhibitors: Design, Synthesis, Biological Evaluation and Docking Study	4	319-33
Coumarin	Novel 4-hydroxycoumarin Derivatives Linked to N-benzyl Pyridinium Moiety as Potent Acetylcholinesterase Inhibitors: Design, Synthesis, Biological Evaluation and Docking Study	4	319-33
Covalent immobilization	Construction a Novel Optode for Quantitative Measurement of Ag <sup>+</sup> Cation in Solutions Based on Covalent Immobilization of Thiazole Yellow on Triacetyl Cellulose Films	1	19-26
Donepezil	Novel 4-hydroxycoumarin Derivatives Linked to N-benzyl Pyridinium Moiety as Potent Acetylcholinesterase Inhibitors: Design, Synthesis, Biological Evaluation and Docking Study	4	319-33
Drug delivery	Balangu/Fe <sub>3</sub> O <sub>4</sub> /Ag <sub>2</sub> S/Polyurethane as an Innovative Bio- Nanocomposite Hydrogel: Synthesis, Characterization, Swelling and Drug Delivery Capacity	3	233-24
Dry concentrate	Photo-Mediated Preparation of Silver Nanoparticles Dry Concentrate in an Organic Solvent System, Using Culture Supernatant of <i>Klebsiella pneumonia</i> : A Preliminary Study	2	133-13

Epicholorohydrin	Construction a Novel Optode for Quantitative Measurement of Ag <sup>+</sup> Cation in Solutions Based on Covalent Immobilization of Thiazole Yellow on Triacetyl Cellulose Films	1	19-26
Klebsiella pneumonia	Photo-Mediated Preparation of Silver Nanoparticles Dry Concentrate in an Organic Solvent System, Using Culture Supernatant of <i>Klebsiella pneumonia</i> : A Preliminary Study	2	133-138
Magnetic nanocomposite	Balangu/Fe <sub>3</sub> O <sub>4</sub> /Ag <sub>2</sub> S/Polyurethane as an Innovative Bio- Nanocomposite Hydrogel: Synthesis, Characterization, Swelling and Drug Delivery Capacity	3	233-243
N-benzyl pyridinium	Novel 4-hydroxycoumarin Derivatives Linked to N-benzyl Pyridinium Moiety as Potent Acetylcholinesterase Inhibitors: Design, Synthesis, Biological Evaluation and Docking Study	4	319-331
Optode	Construction a Novel Optode for Quantitative Measurement of Ag <sup>+</sup> Cation in Solutions Based on Covalent Immobilization of Thiazole Yellow on Triacetyl Cellulose Films	1	19-26
Organic solvents	Photo-Mediated Preparation of Silver Nanoparticles Dry Concentrate in an Organic Solvent System, Using Culture Supernatant of <i>Klebsiella pneumonia</i> : A Preliminary Study	2	133-138
Oxadiazole	Short Communication Synthesis and Cytotoxic Assessment of Thieno pyridine Derivatives	3	227-232
Phthalimide	Short Communication Synthesis and Cytotoxic Assessment of Thieno pyridine Derivatives	3	227-232
Silver (I) ion	Construction a Novel Optode for Quantitative Measurement of Ag <sup>+</sup> Cation in Solutions Based on Covalent Immobilization of Thiazole Yellow on Triacetyl Cellulose Films	1	19-26
Silver nanoparticles	Photo-Mediated Preparation of Silver Nanoparticles Dry Concentrate in an Organic Solvent System, Using Culture Supernatant of <i>Klebsiella pneumonia</i> : A Preliminary Study	2	133-138
Swelling	Balangu/Fe <sub>3</sub> O <sub>4</sub> /Ag <sub>2</sub> S/Polyurethane as an Innovative Bio- Nanocomposite Hydrogel: Synthesis, Characterization, Swelling and Drug Delivery Capacity	3	233-243
Thiazole yellow	Construction a Novel Optode for Quantitative Measurement of Ag <sup>+</sup> Cation in Solutions Based on Covalent Immobilization of Thiazole Yellow on Triacetyl Cellulose Films	1	19-26

Thieno pyridine	Short Communication Synthesis and Cytotoxic Assessment of Thieno pyridine Derivatives	3	227-232
Triacetyl cellulose	Construction a Novel Optode for Quantitative Measurement of Ag <sup>+</sup> Cation in Solutions Based on Covalent Immobilization of Thiazole Yellow on Triacetyl Cellulose Films	1	19-26

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### GEOLOGY

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Dar-Zarrouk parameters	Application of Dar-Zarrouk Parameters for Groundwater Protective Potential within the Crystalline Basement Formation, Southwestern Nigeria	3	245-257
Geophysical investigation	Application of Dar-Zarrouk Parameters for Groundwater Protective Potential within the Crystalline Basement Formation, Southwestern Nigeria	3	245-257
Groundwater contamination	Application of Dar-Zarrouk Parameters for Groundwater Protective Potential within the Crystalline Basement Formation, Southwestern Nigeria	3	245-257
Groundwater quality	Application of Dar-Zarrouk Parameters for Groundwater Protective Potential within the Crystalline Basement Formation, Southwestern Nigeria	3	245-257
High Zagros	Application of Remote Sensing Techniques in Enhancement, Detection, and Slicing of Koopan Lateralized Ultrabasics (South of Bavanat, Fars Province)	4	331-344
Koopan	Application of Remote Sensing Techniques in Enhancement, Detection, and Slicing of Koopan Lateralized Ultrabasics (South of Bavanat, Fars Province)	4	331-344
Kuh-e Genu	Biostratigraphy of Foraminifera at The Upper Cretaceous and Lower Paleogene Strata in The Kuh-E Genu, Bandar Abbas City, Northwestern Persian Gulf, Southern Iran	1	27-44
Lateritized ultrabasic	Application of Remote Sensing Techniques in Enhancement, Detection, and Slicing of Koopan Lateralized Ultrabasics (South of Bavanat, Fars Province)	4	331-344
Leachate percolation	Application of Dar-Zarrouk Parameters for Groundwater Protective Potential within the Crystalline Basement Formation, Southwestern Nigeria	3	245-25
Lower Paleogene	Biostratigraphy of Foraminifera at The Upper Cretaceous and Lower Paleogene Strata in The Kuh-E Genu, Bandar Abbas City, Northwestern Persian Gulf, Southern Iran	1	27-44
NW Persian Gulf	Biostratigraphy of Foraminifera at The Upper Cretaceous and Lower Paleogene Strata in The Kuh-E Genu, Bandar Abbas City,	1	27-44

	Northwestern Persian Gulf, Southern Iran		
Principal Component Analysis	Application of Remote Sensing Techniques in Enhancement, Detection, and Slicing of Koopan Lateralized Ultrabasics (South of Bavanat, Fars Province)	4	331-344
Supervised classification	Application of Remote Sensing Techniques in Enhancement, Detection, and Slicing of Koopan Lateralized Ultrabasics (South of Bavanat, Fars Province)	4	331-344
Upper Cretaceous	Biostratigraphy of Foraminifera at The Upper Cretaceous and Lower Paleogene Strata in The Kuh-E Genu, Bandar Abbas City, Northwestern Persian Gulf, Southern Iran	1	27-44

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### MATHEMATICS, STATISTICS, AND COMPUTER SCIENCES

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Approximation Bayesian inference	An Approximate Bayesian Inference for Beta Regression Models	2	139-148
Asymmetric kernels	Estimating Cumulative Distribution Function Using Gamma Kernel	1	45-54
Average run length (ARL)	Extreme Value Chart & Analysis of MeansBased on Linear Failure Rate Distribution	3	259-260
Beta regression models	An Approximate Bayesian Inference for Beta Regression Models	2	139-14
Binomial thinning	Binomial Thinning Integer-Valued AR (1) with Poisson – $\alpha$ Fold Zero Modified Geometric Innovations	1	55-63
Boundary problem	Estimating Cumulative Distribution Function Using Gamma Kernel	1	45-54
Count time series	Binomial Thinning Integer-Valued AR (1) with Poisson – $\alpha$ Fold Zero Modified Geometric Innovations	1	55-63
Cumulative distribution	Estimating Cumulative Distribution Function Using Gamma Kernel	1	45-54
Delaporte distribution	Binomial Thinning Integer-Valued AR (1) with Poisson – $\alpha$ Fold Zero Modified Geometric Innovations	1	55-63
Global statistic	Statistical Analysis of Spatial Distribution of Tuberculosis in Niger State from 2016-2020	2	149-15
INAR (1) models	Binomial Thinning Integer-Valued AR (1) with Poisson – $\alpha$ Fold Zero Modified Geometric Innovations	1	55-63
Integrated nested Laplace	An Approximate Bayesian Inference for Beta Regression Models	2	139-14
Kriging	Statistical Analysis of Spatial Distribution of Tuberculosis in Niger State from 2016-2020	2	149-15
Linear failure rate distribution (LFRD)	Extreme Value Chart & Analysis of MeansBased on Linear Failure Rate Distribution	3	259-26

Moran's I	Statistical Analysis of Spatial Distribution of Tuberculosis in Niger State from 2016-2020	2	149-156
Spatial auto-correlation	Statistical Analysis of Spatial Distribution of Tuberculosis in Niger State from 2016-2020	2	149-156
Statistical quality control (SQC)	Extreme Value Chart & Analysis of MeansBased on Linear Failure Rate Distribution	3	259-266
Tuberculosis	Statistical Analysis of Spatial Distribution of Tuberculosis in Niger State from 2016-2020	2	149-156
$\alpha$ -fold zero modified geometric	Binomial Thinning Integer-Valued AR (1) with Poisson – $\alpha$ Fold Zero Modified Geometric Innovations	1	55-63

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## PHYSIQUE

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Nonlinear dynamic disturbed	Estimation of Individual Wave Solutions for the Nonlinear Dynamic Model in A Heterogeneous Quantum Magnetoplasma	4	345-351
Traveling wave transformation	Estimation of Individual Wave Solutions for the Nonlinear Dynamic Model in A Heterogeneous Quantum Magnetoplasma	4	345-351
Nonlinear partial differential equations	Estimation of Individual Wave Solutions for the Nonlinear Dynamic Model in A Heterogeneous Quantum Magnetoplasma	4	345-351
Surface Waves	Cylindrical Surface Wave Propagation on a Thin Plasma Layer	1	65-70
Plasma Layer	Cylindrical Surface Wave Propagation on a Thin Plasma Layer	1	65-70
Plasmon-polariton	Cylindrical Surface Wave Propagation on a Thin Plasma Layer	1	65-70