

Tentative Outline

Special Thematic Issue for Current Drug Targets (CDT)

Glycation: Role in secondary complications of diabetes and prevention strategies

Guest Editors: Dr. Hilal Zaid, Ahmad Ali, and Mohammed S. Razzaque

Aims & Scope:

Diabetes has become a major metabolic disorder and socioeconomic issue for the world population. The changing lifestyle and dietary habits have become additional factor in the rise in the person affected due to Diabetes. The most common symptom of the Diabetes is hyperglycemia, the high blood glucose level. This leads to a metabolic condition which is known as glucotoxicity wherein the accumulated glucose starts disturbing the homeostasis. One of the mechanisms by which the glucose affects the cells is that reactive carbonyl group of this molecule (or other sugars) interacts nonenzymatically with the amino group of proteins and other molecules by a process known as glycation. This interaction leads to generation of Schiff bases and Amadori products which in turn get converted to a group of very harmful products commonly called as advanced glycation end products (AGEs). The accumulation of glycation-mediated products interferes with the metabolic and other functions of body. Glycation is implicated in aging and neurodegenerative diseases due to its ability to induce protein cross-linking, aggregation and precipitation, misfolding, fibril and amyloid formation. This process has been also a great concern for the food industry because of the browning of food. However, the exact mechanism by which these products cause damage to the biomolecules and cellular integrity is not fully known. In last few decades some antiglycating agents have been developed but they have found limited applications because of their adverse negative side effects. Accordingly, the focus has shifted to use the phytonutrients for their lower cost and lesser side effects.

Sub-topics:

Articles for this special issue covers but not limited to the following research area

- Recent advances in understanding the mechanism of glycation
- Characterization of AGEs
- AGEs and food industry
- Pathophysiology of glycation (Diabetes, cardiovascular and neurodegenerative disorders)
- Drugs for the treatment of Glycation and its downstream processes
- Recent advances in drug discovery from medicinal plants with antiglycating potentials

List of contributors:

Name of Contributor	Affiliation	Email address
Monika Pischetsrieder	Department of Chemistry and Pharmacy, Emil Fischer Centre, University of Erlangen, Nuremberg, Germany	monika.pischetsrieder@fau.de
Göksel KIZIL	Dicle Üniversitesi	gokselk@dicle.edu.tr

	Fen Fakültesi Kimya Bölümü 21280, Diyarbakir, Turkey	
Fereshteh Taghavi	Faculty of Biological Sciences, Tarbiat Modares University, Tehran, Iran	taghavif@alumni.ut.ac.ir
Mahesh J Kulkarni	Biochemical Science Division CSIR-National Chemical Laboratory, Pune, Maharashtra - 411008, India	mj.kulkarni@ncl.res.in
Saheem Ahmad	Department of Bio-Sciences, Integral University, Lucknow U.P., India	saheem@iul.ac.in
Alejandro Gugliucci	Glycation, Oxidation and Disease Laboratory, Touro University-California, Vallejo, CA, USA	alejandro.gugliucci@tu.edu
Takafumi Yoshida	Department of Medicine, Liver Cancer Division, Research Center for Innovative Cancer Therapy, Kurume University, Kurume Clinical Pharmacology Clinic, Kurume, Japan	tayoshi@med.kurume-u.ac.jp
Kathleen E. Davis	Department of Clinical Nutrition, University of Texas Southwestern Medical Center, Dallas, TX 75390, USA	kathleen.davis@utsouthwestern.edu
Andrej Frolov	Department of Bioorganic Chemistry, Leibniz Institute of Plant Biochemistry, 06120 Halle, Germany	afrolov@ipb-halle.de
Chia-Li Yu	Institute of Molecule Medicine, National Taiwan University College of Medicine, Taipei 10002, Taiwan	chialiyu@ntu.edu.tw
Permal Deo	School of Pharmacy and Medical Sciences City East Campus, Playford. P1-25, Adelaide. South Australia 5001.	permal.deo@unisa.edu.au
Junghyun Kim	Department of Oral Pathology, School of Dentistry, Chonbuk National University, 567 Baekje-daero, Jeonju, Jeollabuk-do, 54896, South Korea.	dvmhyun@jbnu.ac.kr
Masayoshi Takeuchi	Department of Advanced Medicine, Medical Research Institute, Kanazawa Medical University, Uchinada-machi, Ishikawa, 920-0293, Japan	yamamoto@med.kanazawa-u.ac.jp
M. Salman Khan	Department of Bio-Sciences Integral University, Lucknow U.P., India	mskhan@iul.ac.in

Shamsul Ola	Department of Biochemistry College of Science King Saud University Riyadh, Saudi Arabia	mola@ksu.edu.sa
Zhi Xiang Ng	School of Biosciences University of Nottingham Malaysia, Jalan Broga, 43500 Semenyih Selangor Darul Ehsan Malaysia	ZhiXiang.Ng@nottingham.edu.my
Prashen Chelikani	Department of Oral Biology, D319, 780 Bannatyne Avenue University of Manitoba Winnipeg, Manitoba, R3E 0W3, Canada	Prashen.Chelikani@umanitoba.ca
Deyarina Gonzalez	Reproductive Biology and Gynaecological Oncology Group, Swansea University Medical School, Swansea University, Singleton Park, Swansea, SA2 8PP, UK	d.gonzalez@swansea.ac.uk

Schedule:

✧ Manuscript submission deadline: June 2021

Contacts:

Guest Editors:

Dr. Hilal Zaid,
Qasemi Research Center & Arab American University,
Jenin,
Palestine
hilal.zaid@aaup.edu

Co-Guest Editors:

Dr. Ahmad Ali, PhD
Department of Life Sciences,
University of Mumbai, Mumbai,
Maharashtra,
India
ahmadali@mu.ac.in

Dr. Mohammed S. Razzaque
The Forsyth Institute,
Cambridge,
USA
mrazzaque@forsyth.org

Any queries should be addressed to cdt@benthamscience.net