

Digitization of DNA: Miniaturization of information storage moving toward data in DNA!

The last decade has witnessed a significant miniaturization in the way data is stored. We have moved on from hard paper copies to soft digital version, which has not only improved the efficiency of data management, but also enhanced dissipation and accessing of data. The digital data storage formats have evolved from the punched cards/floppy disks with limited storage to the current version of external hard drives with up to a couple of terabytes storage capabilities. The practical reflection of this scientific advancement is directly reflected on the way we manage our data in the highly expanding digital world. Recent innovation on the feasibility of data storage in synthetic DNA may be regarded as a breakthrough technology which will dramatically change the way we have managed our data storage so far. Will we be able to carry terabytes of information within few cells in our body? Will we be able to listen to all our popular music stored in our cells by attaching a tiny sensor to our fingertips? Will school children in future not have to carry heavy school bags? Will this radically change the format in which we will publish and archive scientific literature in future? Or to simplify it, are we, having progressed in the area of humanoid to human transition, slowly pacing toward reverse engineering of human to humanoid? Will we humans be a packet of network hub in future? Seems like a science fiction coming true. Well, I will leave further imagination to our readers and if you have any interesting concepts evolving, please share it with our readers.

We have made some changes to our issues this year. To accommodate our ever-increasing manuscript submissions, we have decided to increase the number of articles per issue. In this issue, JNSBM celebrates its largest issue published so far, incorporating articles of all kinds; reviews, original basic and clinical studies, epidemiological studies, novel methodological descriptions, as well as rare case

reports. Many of these articles reflect (and contribute to) the scientific progress that takes place in our days: the advanced biophysical study of crucial cellular ion channels, the potential use of nanotechnology in everyday dental practice, the biochemical monitoring of intracellular signaling, as well as the development of novel therapeutic approaches to bacterial infections. Other articles, found in this issue, bear less innovation and focus on the critical evaluation of the current state-of-the-art and/or of the everyday medical/dental practice in certain countries and clinical settings. But one should recognize that irrespective of their novelty, these articles form the basis of an academic dialog that leads our world forward. It is, undoubtedly, through scientific progress, debate, and innovation that our community maintains its current dynamic status toward the improvement of our understanding of the natural world and its magnificent (but well-hidden) mysteries. However, scientific progress has never been alone in this journey.

Among the articles in this issue is an article on application of curcumin in oral health on top of its well-described benefits in systemic health. A state-of-the-art review describes the potential of vagal nerve stimulation (VNS) in the management of epilepsy. This is particularly the need of the hour, especially when several medical management options of epilepsy fail. Additionally, it is interesting to note that VNS may also have the potential in triggering neurogenesis, indicating its potential application in regenerative stem cell work. Also, there is an article on application of nanotechnology in dentistry, which highlights the use of nanotechnology, especially in restorative dentistry. We are also delighted to see submission of articles from the engineering field to JNSBM; in this issue, we have an article looking at the electrostatic interactions between dipoles and side chains of potassium channel, which is an ideal example of bioengineering interface. Such cross-disciplinary interactions are need of the hour for crucial understanding of the topic, and as well as for scientific advancement. We hope to see submission of more such articles from non-biological subjects to JNSBM, which will help to promote such multidisciplinary research. Related to this, in this issue, we have a few articles in the area of bioinformatics and molecular modeling, and we aim to continue this trend. We have included a few articles on diabetes/metabolic syndrome, which is not only an increasing risk factor for

Access this article online	
Quick Response Code:	Website: www.jnsbm.org
	DOI: 10.4103/0976-9668.107252

cardiovascular diseases but also a predisposition factor for a few types of cancer, hence catapulting it to a leading cause of morbidity and mortality worldwide. It is the need of the hour to team up all disciplines of science to evolve better diagnostics and therapeutics for this disease. We have included an article highlighting the health risk associated with exposure to petroleum hydrocarbons. This, we think, is timely considering the recent incidence of BP oil spill in the Gulf of Mexico. Although heavy fine was imposed on BP to clean up this mess, the collateral damage imposed by this environmental disaster will continue to impact not only wildlife but also humans exposed to the vapors of this spill. Research efforts are, therefore, necessary to identify such associated risks and develop appropriate therapeutics. We have included a few articles in the area anatomy, in particular topographic anatomy, which we think are valuable educational references, and we highly encourage our readers to consider submitting manuscripts on such basic fundamental topics, which have high educational value. We have two articles looking at the health risks associated with radiation exposures, which is a relatively neglected area. This is especially important with the advancement of wireless communications our environment is jam packed with variety of electromagnetic waves, and surprisingly there is paucity of research work evaluating the safety of such silent morbidity/mortality factors. As always, the icing on the cake is formed by several interesting case reports, which we believe, are of considerable interest to all our readers.

As both social progress and economic progress are tightly linked to scientific progress, the latter has also generated a significant number of socioeconomic problems. This side of the coin is also covered by articles published in this issue of JNSBM, with emphasis on the emerging

threat of bioterrorism and the health-related effects of radiation. Moreover, a number of articles in this issue address the toxic aspects of diseases or health-related concepts linked to our modern lifestyle and industrialized societies; these include studies on experimentally induced diabetes mellitus and its complications, toxicological studies on certain xenobiotics, a study on the management of antibiotic-resistant nosocomial infections, studies on HIV-patients' management and related awareness, as well as an observational study on the current medical perception/practice on adverse drug reactions' reporting.

As members of the editorial board of JNSBM, we are happy to see this journal becoming a popular multidisciplinary forum for scientific novelty, awareness, critical reviewing, and debate. We are also keen to encourage future submissions regarding the aspects of fundamental and applied science, as we strongly believe that scientific excellence and progress are tightly linked to both the ethical and the academic levels of the scientific education. Since the beginning of this effort, our aim has been to establish JNSBM as a valuable reference for both research and continuous education.

Sincerely

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How to cite this article: Zarros A, Kumar AH. Digitization of DNA: Miniaturization of information storage moving toward data in DNA!. *J Nat Sc Biol Med* 2013;4:1-2.

Announcement

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