Cheeriest Happy New Year
That time of year has come again, the time to celebrate and reflect the year gone, the joy of Christmas and the holiday season. May you and your family enjoy the moment together over a good turkey roast, mince pies and a warm cup of tea! May your home be filled with laughter and joy, love and friendship. We hope that this holiday season brings you the joy and happiness that you deserve and above all excitement for the New Year ahead! We send you all of our warmest seasons greetings and love this Christmas and New Year’s!
Happy Holidays and a wonderful 2020!
President of Royan Institute
A. Shahverdi Ph.D.

Moreover, the editorial board would like to wish you and your family a Merry Christmas and a Happy New Year And thanks for your continued support of Royan Institute and its activities. By God’s grace, we have obtained the opportunity to publish the third issue of our Scientific Newsletter in the field of biomedicine and we very much hope that it could be prepared and released even more productive in the next issues with your help and guidance. In this issue, we will introduce some of the most important published articles of the Royan Institute’s researchers, metrics and citation analysis of the Royan Institute journal, two scientific news, future international congresses, and the status quo of Royan Institute’s publication in the international scientific community.
Bi-allelic Mutations in ARMC2 Lead to Severe Astheno-Teratozoospermia Due to Sperm Flagellum Malformations in Humans and Mice.


Abstract

Male infertility is a major health concern. Among its different causes, multiple morphological abnormalities of the flagella (MMAF) induces asthenozoospermia and is one of the most severe forms of qualitative sperm defects. Sperm of affected men display short, coiled, absent, and/or irregular flagella. To date, six genes (DNAH1, CFAP43, CFAP44, CFAP69, FSIP2, and WDR66) have been found to be recurrently associated with MMAF, but more than half of the cases analyzed remain unresolved, suggesting that many yet-uncharacterized gene defects account for this phenotype. Here, whole-exome sequencing (WES) was performed on 168 infertile men who had a typical MMAF phenotype. Five unrelated affected individuals carried a homozygous deleterious mutation in ARMC2, a gene not previously linked to the MMAF phenotype. Using the CRISPR-Cas9 technique, we generated homozygous ArmC2 mutant mice, which also presented an MMAF phenotype, thus confirming the involvement of ARMC2 in human MMAF. Immunostaining experiments in ARMC2-mutated individuals and mutant mice evidenced the absence of the axonemal central pair complex (CPC) proteins SPAG6 and SPEF2, whereas the other tested axonemal and peri-axonemal components were present, suggesting that ARMC2 is involved in CPC assembly and/or stability. Overall, we showed that bi-allelic mutations in ARMC2 cause male infertility in humans and mice by inducing a typical MMAF phenotype, indicating that this gene is necessary for sperm flagellum structure and assembly.


Rastegari A, Nadri H, Mahdavi M, Moradi A, Mirfazli SS, Edraki N, Moghadam FH, Larijani B, Akbarzadeh T, Saeedi M.

Abstract

Alzheimer’s disease (AD) is a well-known neurodegenerative disorder affecting millions of old people worldwide and the corresponding epidemiological data highlights the significance of the disease. As AD is a multifactorial illness, various single-target directed drugs that have reached clinical trials have failed. Therefore, various factors associated with onset of AD have been considered in targeted drug discovery and development. In this work, a wide range of 1,2,3-triazole-chromenone carboxamides were designed, synthesized, and evaluated for their cholinesterase inhibitory activity. Among them, N-(1-benzylpiperidin-4-yl)-7-((1-(3,4-dimethylbenzyl)-1H-1,2,3-triazol-4-yl)methoxy)-2-oxo-2H-chromene-3-carboxamide (11b) showed the best acetylcholinesterase inhibitory activity (IC50=1.80µM), however, it was inactive toward butyrylcholinesterase. It should be noted that compound 11b was evaluated for its BACE1 inhibitory activity and calculated IC50=21.13µM confirmed desired inhibitory activity. Also, this compound revealed satisfactory neuroprotective effect against H2O2-induced cell death in PC12 neurons at 50µM as well as metal chelating ability toward Fe2+, Cu2+, and Zn2+ ions.

Edu - Tourism

The Edu-Tourism word meanwhile is acting of being a student or researcher tourist, means to be involved with educational activities or fulfilling professional programs whilst travelling to overseas or other destinations.

"Roya Edu-Tourism" has been actively engaged in training activities to enhance and meet the scientific levels and requirements of researchers, transferring state-of-the-art experiences and knowledge to both Iranian and International researchers and those who are interested in such realms of sciences. The following images show one of the scientific-educational activities of students in Isfahan.
Science News

**IVF 'twins' born thirteen years apart in Isfahan**
An Iranian family sought fertility treatment from Royan Institute in 2005, and the treatment led to the birth of their son in 2006. Nafas was one of the spare embryos which were kept frozen until the couple decided to try for the second baby thirteen years later. It’s the longest an embryo is known to have been frozen before being born as a baby in west Asia.

**Stem cell exports registered considerable jump this year: official**
Secretary of Stem Cells Development Headquarters of Vice Presidency for Science and Technology, Amir Ali Hamidieh, made the remarks on Wed. and added, “Unlike the previous two years, the export of knowledge-based companies active in the field of stem cells made a significant increase this year.” Hamidieh pointed to some measures taken by the Headquarters and added, “As many as 18 blood stem cells graft centers have been set up in the country.” He termed the commissioning of National Network of Donors of Stem Cells in the Ministry of Health and Medical Education as ‘valuable’. Turning to the increase in the number of knowledge-based companies active in the field of stem cell, he stated that the number currently stands at 140.

**Popular Newly Acquired Books**
Want to know what new items have just arrived in the Royan Library?

**Berek & Novak’s Gynecology 16th Edition**
by Jonathan S. Berek (Author)
Publisher: LWW
Publication Date: April 2019
ISBN: 978-1496380333

Covering the entire spectrum of women’s healthcare, Berek & Novak’s Gynecology, 16th Edition, provides definitive information and guidance for trainees and practicing physicians. A newly streamlined design and brilliant, full-color illustrations highlight must-know content on principles of practice and initial assessment, including relevant basic science; preventive and primary care for women; and methods of diagnosis and management in general gynecology, operative gynecology, urogynecology and pelvic reconstructive surgery, early pregnancy issues, reproductive endocrinology, and gynecologic oncology.
INTRODUCTION:
The “Cell Journal” is a peer review and quarterly English publication of Royan Institute. This journal focuses on topics relevant to cellular and molecular scientific areas, besides other related fields. This journal is a member of the Committee on Publication Ethics (COPE). Cell J publishes original, peer-reviewed research and review articles on cell and molecular biology. The journal welcomes original research and reviews and inviting high-quality research on important developments in the field of cell biology. Submit your manuscript today at https://celljournal.org/auth/login. Please direct any queries to info@celljournal.org

Journal Indexing and Metrics:
The following citation metrics are produced by abstracting and indexing databases using their respective datasets. These metrics represent a variety of methods for measuring the citation impact of published research on a journal level.

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Notice: The main indicator for evaluating scientific journals is H5-index, not h-index.
Average Citation Per Item 5.63
We have the pleasure of extending our sincere welcome to you to attend Royan International Twin Congress, 21st Congress on Reproductive Biomedicine and 16th Congress on Stem Cell Biology and Technology September 2020, which definitely will be a memorable occasion for developing a lifelong friendship in the coming years.

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24-27 June, 2020
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Boston, MA 02210