ХИМИЯ ГЕТЕРОЦИКЛИЧЕСКИХ СОЕДИНЕНИЙ. — 2014. — № 2. — С. 137—138

CREATIVE DESIGN IN THE SYNTHESIS OF HETEROCYCLES: A MEMORIAL TO PROFESSOR IGOR V. MAGEDOV

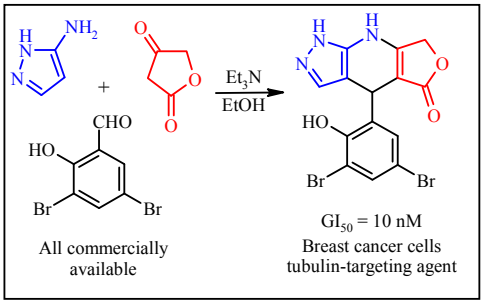
Prof. Dr. Igor V. Magedov (1964–2013)

Igor Magedov passed away on June 14, 2013 at a young age of 49 years after a courageous battle with colon cancer. Dr. Magedov was born in Moscow, Russia, on May 4, 1964. He graduated from Mendeleev University in 1990 with a specialty in Chemistry and Technology of Organic Synthesis, and two years later obtained a PhD degree, during which he discovered novel [3,3]- and [3,5]-dienolate sigmatropic rearrangements and a new reaction leading to 3-pyrazolones. The latter was adopted by Procter and Gamble Pharmaceuticals for the synthesis of novel anti-inflammatory agents.

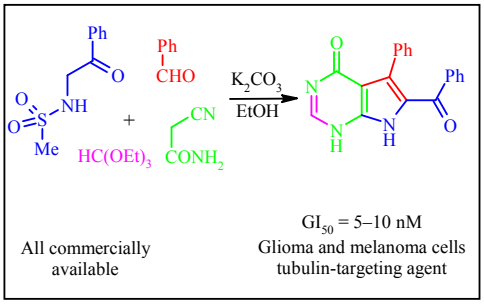
In 1991, Dr. Magedov joined the Moscow Timiryazev Agriculture Academy and was promoted to Associate Professor in 1997. His scientific contributions continued to focus on the discovery of novel reactions and synthetic methods with the particular emphasis on sulfur-containing heterocycles. In addition, Dr. Magedov was a highly insightful lecturer, teaching organic chemistry both at Timiryazev Academy and Moscow State University, where he was appointed as Adjunct Professor. In 2007, Dr. Magedov moved to the U.S.A. and accepted a position of Research Professor at New Mexico Tech. There, he pursued a highly productive research program focusing on the discoveries of novel synthetic methods for the preparation of libraries of compounds based on privileged medicinal scaffolds.

Dr. Magedov had a unique talent of conceiving and then discovering new multi-component reactions leading to heterocyclic scaffolds, which would invariably have interesting biological activities. He referred to this exercise as a "mind game". His work over the years beautifully embodied such creativity. Some wonderful

examples of his scientific achievements involve the discoveries of three- and four-component reactions utilizing commercially available reactants and leading to nanomolar tubulin-targeting anticancer agents in one-step.



Magedov et al., *J. Med. Chem.*, **54**, 4234 (2011)



Magedov et al., *J. Med. Chem.*, **56**, 6886 (2013)

To celebrate Dr. Magedov's contributions to science, the Journal presents this Special Issue, which emphasizes the "Magedov-like" creative design of new reactions leading to the synthesis of heterocyclic structures. It is composed of 23 invited contributions by Dr. Magedov's friends, colleagues and collaborators from Russia, U.S.A., South Africa and Italy. The issue includes 5 Reviews, 11 Articles and 7 Letters covering diverse areas of heterocyclic chemistry, including the synthesis of medicinally important heterocycles using multicomponent reactions (van Otterlo, Kornienko, Frolova, Mamedov, and Shklyaev), unorthodox Fisher indole transformations (Tokmakov and Nam), original synthetic transformations of pyridine-related structures of significance in fundamental organic chemistry (Fisyuk, Babaev, Mamedov, and Voskressensky) as well as those with promising medicinal applications (Arterburn and Ivchenko), interesting heterocyclic amino acid-related chemistry (Azev, Balaev and Evidente), and finally synthetic and medicinal explorations of furan (Gabriele, Shchekotikhin and Butin), thiophene (Aksenov) and thiazole (Evdokimov) heterocycles.

I hope you enjoy reading these excellent contributions and, together with the authors, celebrate the memory of an outstanding heterocyclist, friend, mentor and wonderful colleague, who will forever remain in our hearts and the fascinating chemical structures that we draw on the chalkboards for our students.

Prof. Alexander Kornienko
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Guest Editor