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Quantitative Investigation Of The Catalytic Activities Of Analogues Nickel Complexes In Ethylene Oligo-/Polymerization



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Abstract

Over time there has been an evolution in cosmetics to find substances that can minimize the signs of aging. In this scenario, peptides play an essential role in obtaining a lifted skin face. The most effective substance used as a lifting ally is the botulinum toxin; subsequently, to its discovery, several biomimetic peptides were synthesized to find other valid compounds. The developed SH-Pentapeptide-5 is an endorphin peptide associated with a delivery system based on Conjugated Linoleic Acid (CLA) amidified with Glutathione. This innovative system, tested in vivo compared to placebo through a single-blind clinical trial, carried out the following actions when applied topically on the panelists' skin face: Soothing action: the CLA is a precursor of the anti-inflammatory PGE2 that gives an anti-aging effect linked to the micro skin inflammations relief. Damaged skin repair: through interaction with the hemidesmosomes. The in vivo tested peptide causes the disassembly of the hemidesmosome chains favoring cell migration towards damaged skin areas to heal tissue wounds. Botox-like effect for endorphin-like action: the peptide acts on the neuromuscular synaptic junction in the facial muscles, where through interaction with its target, delta-opioid receptor, it determines a hyperpolarizing effect on the presynaptic neuron. This hyperpolarization inhibits the acetylcholine release; in this way, muscle excitability is inhibited. As a result, the mimic muscle relaxes, and the expression lines are less visible. Conclusion & Significance: results show that the Gluthathione-CLA-SHPentapeptide-5 is a promising ally in treating typical aging dysfunctions. It can lift face wrinkles and firm the skin when applied twice a day topically for a month. In contrast with other peptides like the botulinum toxin, this system is not an injective treatment; consequently, it does not cause side effects, and in addition, it can be conveyed in cosmetic formulations without the need for medical intervention.

Biography

Arfa Abrar Malik is a PhD research scholar at the Institute of Chemistry, Chinese Academy of Science Beijing China. Her research work is focused on the synthesis of transition metal complexes and the effect of their activities on ethylene polymerization. Her research focus for the duration of her Ph.D. is to synthesize organometallic complexes of Iron and Cobalt and correlate her experimental results with the models/simulations, which she computed during her MS research. She also managed to successfully publish her MS research based on the simulation and models of the transition metal complexes and their enhancement as catalysts in ethylene oligo/polymerization. Currently, she is working as an exchange researcher at the Department of Chemistry, Quaid-i-Azam University Islamabad, Pakistan. Apart from her philanthropic activities, Arfa is Co-Founder at WEmpower Pakistan and also affiliated with this international non-profit organization as the Chief Information Officer and works towards bridging the gap between competent students and academia. She advises students regarding their PhD applications and scholarships.

Importance of Research:

The title is very bold for a discussion meeting, and this is indeed true. However, it is hard to imagine the world today or indeed civilized society without the impact of catalysis on the fundamental aspects required for life, namely energy, food and water. Catalysis is a core area of contemporary science posing major fundamental and conceptual challenges. Traditionally, it lies at the heart of the chemical industry—an immensely successful and important part of the economy globally. Catalysis is generally associated with underpinning approximately 30% of gross domestic product in European economies. Catalysis is involved at some point in the processing of over 80% of all manufactured products. Hence catalysis is immensely important not only because it is an aid to economic success for the major world economies but also because it enables materials to be made that sustain society as we know it. Yet it is surprising that many outside of the field of catalysis science and engineering have no perception of its importance in their everyday lives.

A central aim of the discussion meeting was to widen the awareness of the crucial importance of catalysis and also to set out where the future of this important field is heading.

At the heart of the chemical processes operated so successfully around the world has been the design of catalysts, and innovation in catalysis is core to meeting many of the key questions facing society as a whole today. Moreover, commercial success can only be sustained and grown through an innovation-driven approach which is grounded in the fundamental science and engineering underpinning new catalyst development. Indeed, current catalytic science is notable for both conceptual and technical innovation and there is a constant need to generate new catalysts and to design more efficient versions of current catalysts. This can be considered the core area in which catalysts currently operate. However, there is a broader arena in which we consider catalysis can play a wider role and impact more directly on society. Of course, the main area of catalysis that society has an appreciation of is the automobile exhaust catalytic converters which have improved air quality around the world for several decades. We anticipate that catalysis in the future will have a wider impact on achieving clean water, clean energy and sustainable food supplies in a far greater way than it currently does. The UK Catalysis Hub, established in 2013, has its origins in addressing these key areas of research.

The meeting addressed four key areas of current interest in catalysts:

- Catalyst design—is it possible to design new and improved catalysts?
- Catalysis and the environment—how can catalysis improve our use of resources?
- Catalysis and chemical transformations—how can we improve the scope, efficiency and selectivity of chemical processes?
- Catalysis and energy—how can we improve energy efficiency using catalysis?

About University

University of Naples Federico II offers 157 courses in 13 teaching areas (Agriculture, Architecture, Economics, Pharmacy, Law, Engineering, Medicine and Surgery, Veterinary Medicine, Biotechnological Sciences, Mathematics, Physics and Natural Sciences, Political Sciences, Sociology, Humanities). So, it offers courses in every existing academic discipline, which lead to 157 graduate level degrees. Research facilities provide support for all these courses. Students have the chance both to pursue intellectual development and to acquire professional skills. The new “Study in Naples 2020/2022” call for proposals is available online at www.coinor.unina.it, on the University website http://www.unina.it/ ateneo and in the international section of the same http://www.international.unina.it/ to support the internationalisation of courses of study.

The Call for Proposals is aimed at incoming students equipped

with an admission qualification obtained abroad who intend to enrol in one of the international study courses offered by the University (provided entirely in English, i.e., those that require a double or multiple degree in collaboration with foreign partner universities). A detailed list of the courses for which it is possible to apply is given in the call for applications.

The call for applications will allocate up to 24 two-year scholarships (or annual scholarships for students enrolled in partner universities who do not have any other form of financial support and for the period of stay at Federico II only), each one corresponding to an annual amount of € 5,529.96 gross.

The aim of the call, which is part of the "Internationalisation of Study Courses" Project co-financed by the Compagnia di San Paolo, is intended to support the International Study Courses already offered by the University and to encourage the proposal of new ones, increasing their competitiveness and attractiveness towards foreign students.

have cooperated with ICCAS. In addition, ICCAS signed 33 cooperative agreements with internationally famous enterprises.

Applications for scholarships can only be submitted electronically and directly by students no later than 1:00 p.m. on 15/05/2020, filling in the forms attached to the call for applications, which must then be sent by e-mail (in file format *.pdf) to admissions@unina.it

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