



Gastrointestinal Section 8th International Symposium on Cell / Tissue Injury and Cytoprotection / Organoprotection

The 8th International Symposium on Cell / Tissue Injury and Cytoprotection / Organoprotection was held in Budapest September 24 - 26, 2014. The Symposium was a satellite meeting of the 17th World Congress of Basic and Clinical Pharmacology 2014. The meeting was organized by the Hungarian Society for Experimental and Clinical Pharmacology, the Department of Pharmacology and Pharmacotherapy, Semmelweis University and the Drug Discovery and Safety Centre, Semmelweis University, under the auspices of the Medical Section of the Hungarian Academy of Sciences and the IUPHAR Gastrointestinal (GI) Section. The main organizer and chair of the symposium was Prof. Klara Gyires, of the Department of Pharmacology and Pharmacotherapy, Semmelweis University, and the co-chair was Prof. Beata Sperlagh, the secretary general of the Hungarian Society for Experimental and Clinical Pharmacology. The organizers wish to acknowledge and thank Richter Gedeon, Antibe Therapeutics, MDE Heidelberg Biological Research Sigma Aldrich, Medicina Publishing House, Ballagi LTD and Foundation of Drug Research in Hungary for their meeting support.

The Symposium followed a range of internationally acknowledged and successful series. The first meeting was held in 1986 in Heidelberg, the next three in USA, then in Ukraine (2008), in Russia (2011) and in Hawaii (2012). The symposium traditionally covered a wide range of topics associated with cell, tissue damage / protection in upper and lower parts of the GI tract. In the present Symposium, the topics have been extended to other organs, e.g., injury /repair of cardiac and neuronal tissues, as was emphasized by Prof. Gyires during the opening ceremony.



*Symposium participants standing in the entrance
of the main building of the Hungarian Academy of Sciences in Budapest*

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In previous symposia most of the participants have been leading experts of their research area. The 8th Symposium followed this tradition by inviting keynote speakers from 14 countries: Austria, Canada, Croatia, Germany, Hungary, Italy, Japan, Korea, Norway, Russia, Singapore, Ukraine, United Kingdom, and USA. The total number of Symposium participants was about a hundred. During two and half days, 37 oral presentations were given and 30 posters were discussed in two sessions.



(L → R) Profs. P. Sikiric (Croatia), K. Takeuchi (Japan) and B. Callingham (UK) intently following the opening program



Profs. Koji Takeuchi (second from left) and Gyula Mózsik (center) with their Andre Robert Prizes accompanied by Profs. Duan Chen (left), Sandor Szabo (second from right) and Klara Gyires (right)

The Andre Robert Prize was established on behalf of this symposia series to commemorate the work of Andre Robert, MD, PhD, originator of the concept of “gastric cytoprotection”, who founded this symposia series in the mid-1980s in conjunction with Prof. Sandor Szabo. The award has now been passed to the GI Section to continue the tradition. During the opening ceremony, Profs. Duan Chen and Klara Gyires, president and vice-president, respectively, of the GI Section, along with Prof. Szabo, immediate past president of the GI Section,

awarded the Andre Robert Prize to Gyula Mózsik, professor emeritus, University of Pecs, Hungary, and to Koji Takeuchi, professor emeritus, Kyoto Pharmaceutical University, Japan. Both recipients have made several major and original contributions to the field of GI pharmacology, especially in relation to gastric cytoprotection.

The scientific program started with State of the Art Lectures, which focused on novel mechanisms, concepts on gastrointestinal mucosal injury and protection. As an example, Prof. Szabo reviewed new developments in the field of cell necrosis, apoptosis, necroptosis, and the potential mechanisms of gastroprotection, e.g., the role of slightly increased vascular permeability and perivascular edema as a histodilutional barrier. Prof. K. Rainsford emphasized the importance of cofactors



that contribute to the development of serious GI complications of nonsteroidal anti-inflammatory drugs (NSAIDs). Prof. J. Wallace (photo above) summarized the role of H₂S in mucosal defense and the beneficial effect of H₂S donors in increasing the resistance of the mucosa to injury induced by NSAIDs. Prof. A. Tarnawski emphasized the significant advantage of confocal laser endomicroscopy over standard histologic and electromicroscopic assessment, e.g., allowing in vivo monitoring of mucosal structure and function. Prof. J. Szolcsanyi overviewed the discovery and mechanism of the gastroprotective action of capsaicin, and finally, Prof. P. Holzer (photo at left) focused on intestinal microbiota, the gut brain axis and the protection of gut and brain.



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The remaining part of the scientific program included three sessions on Injury / Protection of Gastrointestinal Mucosa (13 speakers), NSAIDs and Gastrointestinal Tract (five speakers), Gastrointestinal Malignant Diseases (five speakers), Cardioprotection (four speakers) and Neuroprotection (four speakers) as well as the two excellent sessions featuring 30 posters.



Prof. T. Brzozowski (Poland) poses a question during the discussions



Prof. J. Wood (USA) has a question for the speaker - seated at left is Prof. K.B. Hahm (Korea)

As the speakers' topics suggest, most of the lectures focused on current status of the mechanism of gastric and intestinal mucosal injury / protection, e.g., the protective effect of carbon monoxide (Prof. T. Brzozowski), duodenal bicarbonate secretion associated with ATP and P2Y₁ receptors (Prof. J. Wood), gender differentiation in bicarbonate secretion and association with ASIC3 (Prof. K. Takeuchi), molecular mechanism of H. pylori induced tissue damage (Prof. H. Kim), esophageal mucosal lesions (Prof. O. Zayachkivska), the role of corticotropin receptors in gastric mucosal defense (Prof. L. Filaretova), the protective effect of the stable gastric pentadecapeptide, BPC 157 (Prof. P. Sikiric), and the differences in the centrally induced gastroprotection (Prof. K. Gyires). The lectures related to NSAIDs and Gastrointestinal Tract revealed new mechanisms of mucosal damage/protection, e.g. dysfunction of local defense system in NSAID-induced lesions (Dr. T. Tomita), the aggravating effect of antisecretory drugs on diclofenac-induced intestinal lesions and the usefulness of mucosal protective agents (Prof. H. Satoh), the smooth muscle and vascular actions of ibuprofen and diclofenac (Prof. B. Callingham), changes in NO synthase under stress and blockade of COX-1/COX-2 and 5-LOX (Prof. A. Y. Sklyarov), and the results

of human phase I study with capsaicinoids against diclofenac and aspirin-induced mucosal injury (Prof. Gy. Mózsik). Lectures focusing on injury and protection of intestinal mucosa analyzed the protective role of heme-oxygenase 1 expressed by macrophages in colitis (Prof. Y. Naito), changes of colonic ion transport and mucus secretion by ceftriaxone (Dr. G. Tolstanova), furthermore, the protective role of TRPA1 ion channel (Prof. Zs. Helyes) and the Harkany medical water (Prof. E. Pintér) on experimental colitis. The lectures on mucosal injury and repair in malignant diseases associated with GI tract analyzed the mechanism of sulphoraphane-induced chemoprevention (Prof. A. Yanaka), the cytoprotection



Professor H. Satoh (Japan) among PhD students

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by omega-3 fatty acid against H. pylori-induced carcinogenesis (Prof. K.B. Hahm), the triple role of autophagy in cytoprotection (Dr. C.M. Zhao), fluorescence based co-culture of normal and malignant cells which method may have a benefit for estimating cancer therapeutic effects (Prof. H. Matsui), and the role of substance P in gastric MALT lymphoma formation (Prof. M. Nakamura).



Discussion between Profs. K. Rainsford (at left), S. Szabo (center) and J. Szolcsányi (at right)

Interesting lectures were given on the role of the vagal nerve in the control of body weight (consequently it may be a new target for obesity treatments) (Prof. D. Chen) and the beneficial role of stem cells in tissue injury (Prof. G. Varga). Moreover, cardioprotection associated with endogenous cannabinoids (Prof. P. Pacher), ischemia / reperfusion (Prof. R. Schulz) and extracellular vesicles (Dr. Z. Giricz), were also discussed. Novel mechanisms of neuroprotection and neurodegeneration was also a new important topic at the symposium: the role of kynurenines (Prof. L. Vécsei), the reasons behind the clinical translational failure - namely the experimentally protective agents failed to be effective in clinical trials - (Prof. L. Csiba), the effect of novel, (hetero)aryl-alkenyl propargylamine compounds with putative MAO-B inhibitory and neuroprotective properties in different experimental models of Parkinson's disease (Prof. B. Sperlagh), and WNT-signaling (P. L. R. Ee) were also analyzed.

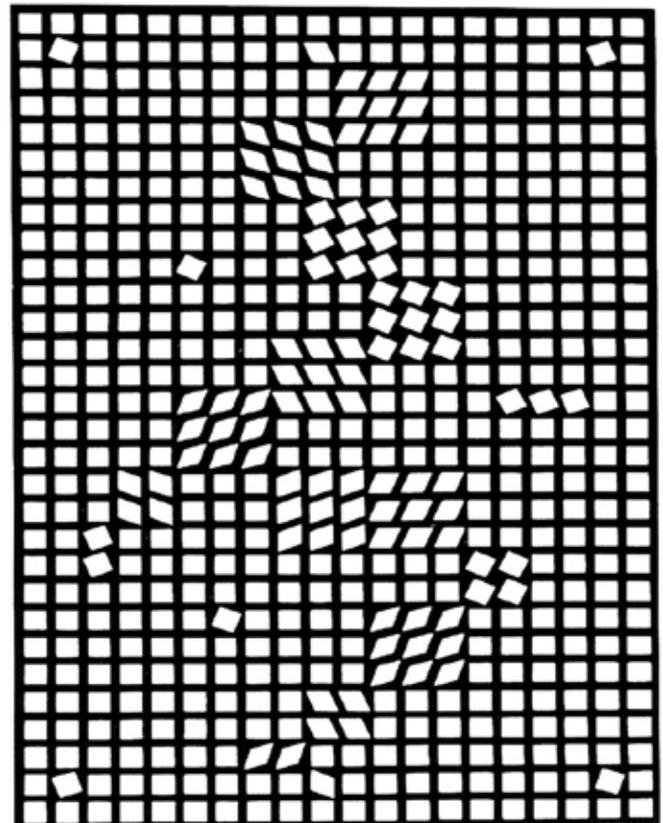
As a special guest, the Honorary Membership-Lecture of the Hungarian Society for Experimental and Clinical Pharmacology was given by Prof. E. Adeghate (United Arab Emirates) on the cytoprotective role of incretins in diabetes mellitus.

The symposium abstracts were published in *Digestive Disease and Sciences* (59:1647-1670, 2014). The program of the 8th International Symposium on Cell / Tissue Injury and Cytoprotection / Organoprotection is available on the Symposium website, <http://www.congressline.hu/isctico2014>. *Inflammopharmacology*, a peer-reviewed journal, offered the possibility for rapid publication of the presentations.

The interesting and extensive discussions suggest that the extension of the research topics of the Symposium proved to be very useful. It is hoped that crosstalk between scientists in different fields will stimulate initiation of new research topics and collaborations.

The 9th International Symposium on Cell/Tissue Injury and Cytoprotection / Organoprotection, as the official meeting of IUPHAR GI section, will be held in September, 2016 in Krakow, Poland, organized by Prof. T. Brzozowski. •

Klara Gyires, Vice Chair, IUPHAR Gastrointestinal Section



*OP-ART dedicated
to the symposia
by Victor Vasarely*

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