

10<sup>th</sup> World Congress on **Pharmacology**

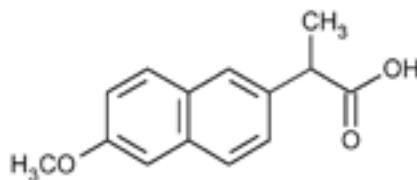
&amp;

6<sup>th</sup> International Conference and Exhibition on**Advances in Chromatography & HPLC Techniques**

August 02-03, 2018 | Barcelona, Spain

**HPLC determination of naproxen from mesoporous silica**Lucia Váhovská<sup>1</sup>, Monika Šuleková<sup>1</sup>, Alexander Hudák<sup>1</sup>, Vladimír Zeleňák<sup>2</sup> and Lukáš Žid<sup>2</sup><sup>1</sup>University of Veterinary Medicine and Pharmacy, Slovakia<sup>2</sup>Pavol Jozef Šafárik University, Slovakia

Over the last decades, the development of controlled drug delivery systems has increased rapidly. However, recently, there has been growing interest in the use of mesoporous materials as controlled drug delivery matrixes because they have several attractive features, such as stable uniform mesoporous structures, high surface areas, tunable pore sizes with narrow distributions, and well-defined surface properties. The delivery of different drugs using the mesoporous silica materials was investigated, up to now. Our attention has been focused on the study of naproxen release from drug delivery system, based on ordered hexagonal mesoporous silica SBA15. Naproxen, a non-steroidal anti-inflammatory drug (NSAID) derived from propionic acid, is widely used to moderate pain relief in the treatment of many diseases. NSAIDs, including naproxen, are commonly employed to reduce ongoing inflammation, pain and fever, because they are able to block the cyclooxygenase (Cox) enzymes that both produce prostaglandins; these classes of compounds have several important functions, such as the promotion of inflammation, pain and fever. In this work, the released amount of naproxen from SBA15 was monitored in selected time intervals by reversed-phase high-performance liquid chromatography (RP-HPLC). A Dionex Ultimate 3000RS system equipped with a diode array detector (DAD) and programmable Chromeleon Chromatography Data System, Version 7.2, was used for analysis. The mixture of acetonitrile and water (55:45, v/v) adjusted with ortho-phosphoric acid to pH 3 was selected as the best mobile phase. The naproxen was monitored by UV detection at 229 nm.

**Figure:** Structural formula of naproxen**Recent Publications**

1. Herchel R, Váhovská L, Potočňák I and Trávníček Z (2014) Slow Magnetic Relaxation in Octahedral Cobalt(II) Field-Induced Single-Ion Magnet with Positive Axial and Large Rhombic Anisotropy. *Inorg. Chem.* 53:5896-5898.
2. Váhovská L, Potočňák I, Vitushkina S, Dušek M, Titiš J and Boča (2014) Low-dimensional compounds containing cyanido groups. XXVI. Crystal structure, spectroscopic and magnetic properties of Co(II) complexes with non-linear pseudohalide ligands. *Polyhedron* 81:396-408.
3. Váhovská L, Potočňák I, Vitushkina S and Walko M (2016) Low-dimensional compounds containing cyanido groups. Part XXX. Recrystallization of Co(II) complexes with pseudohalogenide ligands leading to CO<sub>2</sub> uptake and formation of dicyanoguanidine anion in newly created Co(III) complexes. *Polyhedron* 117:359-366.
4. Vitushkina S, Teslenko M, Váhovská L, Findoráková L, Vilková M and Potočňák I (2017) Low-dimensional compounds containing cyanido groups. Part XXXI. First simultaneous nucleophilic addition of water and ethanol to dicyanonitrosomethanide anions in the presence of Co (II). *Inorg. Chim. Acta* 456:49-54.
5. Váhovská L, Vitushkina S, Potočňák I, Trávníček Z and Herchel R (2018) Effect of linear and non-linear pseudohalides on the structural and magnetic properties of Co (II) hexacoordinate single-molecule magnets. *Dalton Trans.* 47:1498-1512.

### **Biography**

Lucia Váhovská is a Researcher in the Department of Chemistry, Biochemistry and Biophysics at the University of Veterinary Medicine and Pharmacy in Košice. She has completed her PhD in Inorganic Chemistry at University of Pavol Jozef Šafárik in Košice in 2014. Her academic training and work experience include the preparation of some transition metal complexes with subsequent physico-chemical characterization using infrared spectroscopy, UV-VIS spectroscopy, elemental analysis, RTG structure analysis, magnetic measurement. At present, she participates in a project with the aim to study selected drug releasing (naproxen, 5-fluorouracile) from mesoporous (modified) silica SBA15 using HPLC method.

lucia.vahovska@uvlf.sk