



Chemistry of potential anti-tumor agents as revealed by collaborative research performed in Kragujevac and Erlangen



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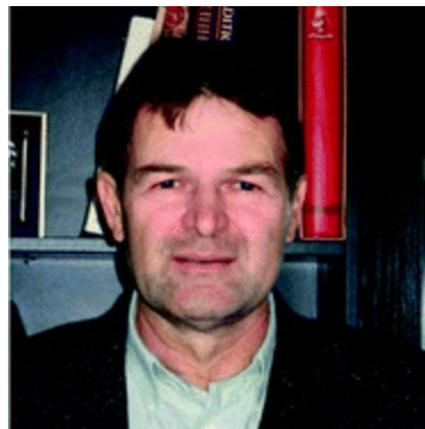
Founder of the cooperation:

Erlangen



Prof. Dr. Dr. h.c. mult. Rudi van Eldik
(retired in Erlangen 2010)

Kragujevac



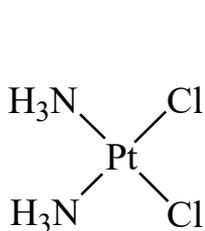
Prof. Dr. Živadin Bugarčić
(1954 - 2017)

Started: ca. 2002

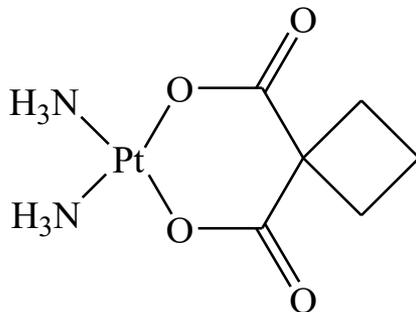
Joined Topic: Investigation of (Bio)Inorganic reaction Mechanisms
(a bit later (2004) extended by quantum chemical investigations)

Topic of the cooperation:

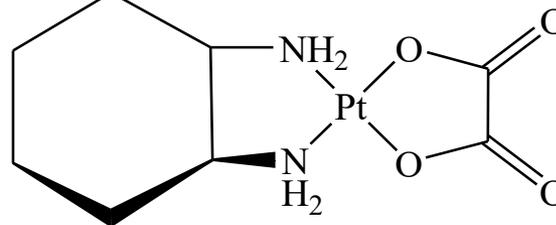
Typical anti-tumor active platinum based drugs:



Cisplatin



Carboplatin



Oxaliplatin

The collaboration investigated/investigates:

- mechanistic behavior and chemistry of platinum based potential antitumor complexes, *e.g.* as model complexes and reactions (*e.g.* guanosine-5'-monophosphate (5'-GMP)) by experiment and quantum chemistry.
- extended this reactions to corresponding palladium complexes
- in the last years extension of this studies to potential antitumor complexes of gold, rhodium, ruthenium etc..

Funding for the cooperation:

Erlangen	Kragujevac
<ul style="list-style-type: none">- DAAD- Fonds der Chemischen Industrie- Funding without dedication	<ul style="list-style-type: none">- Ministry of Education, Science and Technological Development of the Republic of Serbia

Current status of the cooperation:

Erlangen	Kragujevac
<ul style="list-style-type: none">- Prof. Dr. Rudi van Eldik retired in 2010 and continues his research in Krakow and Torun, Poland, but still interested and being somehow included in cooperation- R. Puchta still in Erlangen doing theoretical mechanistic studies in cooperation with team(s) from Kragujevac.	<ul style="list-style-type: none">- Prof. Dr. Živadin Bugarčić (+ 2017) => “Scientific daughters” continue research topic (experimental investigation of (Bio)Inorganic reaction Mechanisms) successfully and broadened it to further metal ions

Results of the cooperation:

- 20 joined publications between Prof. van Eldik and Prof. Bugarčić
- Regular Ph.D. student and Post-Doc exchange between ca. 2004 - ca. 2014
- Continuation of scientific cooperation between “scientific daughters” of Prof. Bugarčić and R. Puchta/Prof. van Eldik
- Several satellite cooperation between:
 - B. Petrović team & research team of Prof. K. Meyer, Erlangen
(Ph.D. from Kragujevac was 6 month guest in Erlangen)
 - B. Alzoubi (Irbid, Jordan) & T. Soldatović State University of Novi Pazar
 - R. Puchta & organic and physical chemistry teams in Kragujevac
 - R. Puchta & inorganic chemistry T. Soldatović, Novi Pazar
 - R. Puchta & physical organic chemistry team in Universidade de Vigo
- Erasmus+ Kragujevac - Erlangen 2019/20 (very successful & unproblematic)
- Cooperation between Staatliche Fachoberschule Nürnberg and University of Kragujevac (1 -2 weeks internship for pupils)

Results of the cooperation:

- Review publications summarizing results from this cooperation:

Pt, Pd: *Coord. Chem. Rev.* **2015**, 292, 91-106.

Au: *Coord. Chem. Rev.* **2017**, 338, 186-206.

Pt: *Inorg. Chim. Acta.*, **2019**, 495, Article 118953.

Outlook:

We plan to continue:

- the successful scientific cooperation between “scientific daughters” of Prof. Bugarčić and R. Puchta (may be Prof. van Eldik (now working in Torun, Poland))
- satellite cooperations
- Erasmus+ Kragujevac - Erlangen ... if possible ...
- Cooperation between Staatliche Fachoberschule Nürnberg and University of Kragujevac (1 -2 weeks internship for pupils)

... new ideas and cooperations are welcome within our possibilities ...

Reason for the success?

Partners involved got (scientific and) personal friends in all that years!

Good relation between administrative and technical stuff, too. (especially Erasmus+)

All partners are happy Serbians or Bavarians and are curious and interested in the partners' country, culture and history!

Personal statement 😊



Personal statement ☺

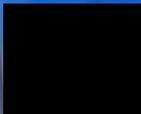


Exception: Serbia!

Thank you ...

.. all partners that supported this cooperations...

Jelena Balović, Svetlana Begel, Živadin Bugarčić, Zorica Bugarčić, Dusan Čočić, Anne Dees, Vera M. Divac Hakan Ertürk, Frank Heinemann, Stephanie Hochreuther, Andreas Hofmann, Ivana Ivnaović-Burmazović, Snežana Jovanović, Günter Liehr, Marina D. Kostić, Biljana Petrović, Tanja Soldatović, Jovana Bogojeski, Ursula Palmer, Snežana Radisavljević, Andreas Scheurer, Wolfgang Schiessl, Nadine Summa, Rudi van Eldik, Achim Zahl ...





*Thank you very much
for your kind attention!*