Uniwersytet Gdański
Centrum Transferu Technologii

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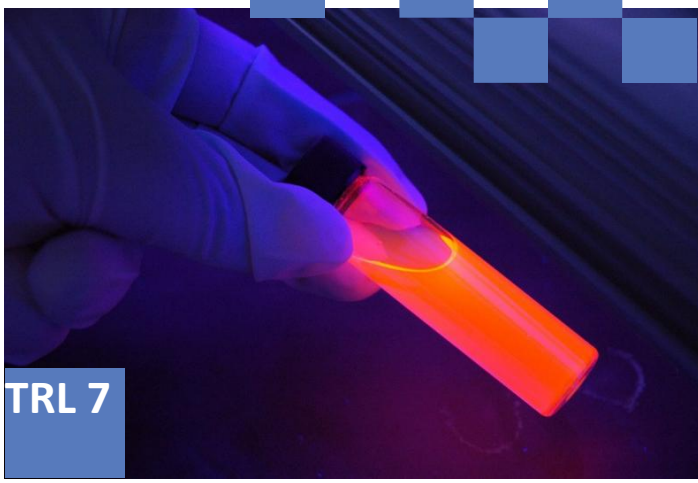
Copper ion sensor



About technology

Copper ions (Cu2+ ions) – the third most abundant transition metal in the human body – play an important role in many fundamental physiological processes.
Both the insufficiency of Cu2+ ions, which is, among others, a symptom of anaemia, as well as their excess, are harmful and can lead to many diseases, such as Alzheimer's, Parkinson's, Huntington's diseases or those related to the digestive system, liver or blood vessels. Due to the wide use of copper, which is a heavy metal, e.g. in electrical engineering, electronics, construction and motorization or fertilizers, copper ions are also an important cause of environmental pollution.
The scientists from University of Gdańsk developed an innovative sensor (a new fluorescent peptide) for determination of copper ions in solutions.

Advantages

- technology does not entail the use of expensive or specialised equipment,
- very high sensitivity: possibility of detecting even single molecules,
- very high selectivity: a peptide, tested for interactions with approximately 20 metal cations, gives a response exclusively under the influence of copper ions.

Main applications

- analysing the quality of chemical reagents used in laboratories,
- measuring the concentration of copper ions: in waters (including mineral and deionised waters), in food drinks, in cosmetic and pharmaceutical products as well as in biological material for diagnostic use.

Research team

Wydział Chemii Uniwersytetu Gdańskiego:

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IP Protection

The invention was submitted for patenting according to Polish (P.430245) procedures.

Technology Readiness Level

TRL 4 - Prototype ready for demonstration in an appropriate operational environment.

Cooperation oportunities

- Licensing agreement
- Transfer of ownership
- Partnership for further research

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Technology offer
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