

Voltage Regulated Uptake and Release of L-Glutamate from a Molecularly Selective Switch for Physiological Applications

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Z. Naturforsch. **64a**, 879 – 880 (2009);
received October 20, 2009 / revised November 23, 2009

In this paper results are presented on the development of a device demonstrating the uptake and release of L-glutamate in solutions with neutral pH. A device which selectively regulates the concentration of biomolecules, such as the primary neural transmitter L-glutamate, could be useful for many biological and medical applications. In the literature it has been demonstrated that polypyrrole (PPy) is a promising material for the recognition basis of molecularly selective devices [1,2]. In this study we investigated the feasibility of the PPy based “glutamate switch” for the voltage dependent uptake and release of L-glutamate for physiological applications.

Key words: Polypyrrole; Molecular Selective Polymer; L-Glutamate.