Abstract

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Title of diploma thesis: Determination of permeability and active transport of selected butyrylcholinesterase inhibitors in vitro

European Medicine Agency (EMA) and Food and Drug Administration agency (FDA) emphasise drug membrane permeability and drug-drug interactions on ABC transporters expressed in physiological barriers should be investigated for compounds in preclinical studies or for those already clinically used but evidence free. In this work we aimed to assess the capability of several experimental butyrylcholinesterase inhibitors that had been designed to treat dementia to permeate blood-brain barrier and to elucidate role of ATP-binding (ABC) cassette transporters in this transport.

For this purpose, we employed *in vitro* bidirectional transport study across monolayers formed by polarized and highly differentiated Caco-2 cells. The permeability values gained from measurements were similar to values of several commonly used drugs for treatment of CNS disorders (e.g. antidepressants, antiepileptics). In addition, the compounds showed values of efflux ratio (basolateral-to-apical/apical-to-basolateral) approximately one which suggest none or negligible involvement of active transport.