

Comparison of the Influence of Myristic Acid on Acetaminophen and Acetylsalicylic Acid Binding with Serum Albumin

B. Bojko¹, A. Sułkowska¹, M. Maciążek-Jurczyk¹, J. Równicka¹, D. Pentak²,
W.W. Sułkowski²

¹*Department of Physical Pharmacy, Faculty of Pharmacy, Medical University of Silesia, Sosnowiec, Poland*

²*Department of Environmental Chemistry and Technology, Institute of Chemistry,
University of Silesia, Katowice, Poland
e-mail: bbojko@slam.katowice.pl*

Binding of drugs to serum albumin is one of the main part of their metabolism. Changes of equilibrium between free and bound fraction of drug may significantly affect process of its -distribution and elimination. Fatty acids are one of the ligands which bound with albumin may change the affinity of protein towards the drug.

In our fluorescence studies the influence of increasing concentration of myristic acid (MYR) on binding of acetaminophen (paracetamol, AA) with serum albumin were investigated. The applied concentration ranges of fatty acid relate to the subsequent molecules of MYR associated with the protein [1]. Binding sites of acetaminophen in albumin structure were found. Comparison of association constants calculated by the use of Scatchard and Stern-Volmer method were done for AA-albumin and AA-albumin-MYR complexes. Current results were compared with our previous studies on the influence of myristate on acetylsalicylic acid binding with serum albumin [1].

On the basis on our results we concluded that the competition between acetaminophen and fatty acid depends not only on the competitive binding but also on albumin structure changes induced by fatty acid.

[1] B. Bojko, A. Sułkowska, M. Maciążek, J. Równicka, F. Njau, W.W. Sułkowski, *Int. J. Biol Macromol.* 42 (2008) 314-323.