7 Summary

A series of arylalkanoic acids derivatives bearing methyl(phenethyl)amino groups were prepared and their antileukotrienic activities involving LTB_4 were evaluated. Regression analysis of the first group of derivatives of arylacetic acid has shown a strong dependence of these activities on lipophilicity for both LTB_4 receptor binding and inhibition of LTB_4 biosynthesis, parabolic relationships were derived. The values of slopes of the ascending linear parts of these dependences indicate various types of hydrophobic binding at the site of ligand interaction with relevant biomacromolecules. Regression analysis showed the slightly different parabolic dependences of this activity on lipophilicity of □-methyl and □-unsubstituted alkanoic acids derivatives. The relationship derived for □-unsubstituted alkanoic acids extended by group of similar derivatives of arylacetic acids was without any change of regression coefficients and statistical criteria. It was concluded, that the most active compounds belong to 2-arylpropanoic acids derivatives with lipophilicity close to log P_{opt} (= 6.98). The antiinflammatory effect of the compounds under study was evaluated in three animal models of inflammation and their possible utilization in the treatment of ulcerative colitis was followed. It can be stated that the relation between inhibitory activities of LTB_4 biosynthesis and of ear lobe edema exists on some qualitative level and the first one is the prerequisite for ear edema inhibition. Possible relation between LTB_4 biosynthesis inhibition and ulcerative colitis is seriously broken by the compound **8a** including carbonyl as the additional functional group.