

Since 90th of XX century simple complexes of chromium(III) with ligands, which facilitate its transport into cells, have become commonly applied dietary supplements recommended as helpful in preventing diabetes, arteriosclerosis and first of all obesity. The positive role of chromium has been questioned recently. Additionally, the negative properties of chromium at higher oxidation state cause us to undertake study *in vitro* on oxidation reaction of chromium(III) complexes by hydrogen peroxide which is important biological oxidant. The obtained results should explain if the most popular pharmaceutical chromium(III) supplement - $[\text{Cr}(\text{pic})_3]^0$ or chromium(III) complexes with aminoacids can be converted into dangerous for living organisms, carcinogenic chromium(IV, V or VI) compounds.