

INTRODUCTION

From the nineties of the twenty's century [1], when appeared the first references about the new type of the stationary phases designated for HPLC called monoliths, these became to be the object of interest of several scientific groups [2-4]. Their uncontested advantage in comparison with classical columns is their high stability in pH range from 2 to 12 where there is no possibility to use the classical columns. Other advantages are their easy and cheap preparation and the absence of frits on the ends of the separating medium because the monolith is covalently bound to the inner side of the capillary [5]. On the other hand, their disadvantage remains to be worse in reproducibility of the stationary phase preparation than in case of classical columns. This PhD Thesis is focused on monoliths based on organic polymers, mainly the methacrylate monoliths. For the first time, this type of monoliths was shown by Peters et al. [6] and since then there have been made several monolithic phases based on different separating features [7-10]. Methacrylate monoliths are convenient for separation of the low molecular substances [7] as well as the high molecular substances like the proteins, oligonucleotides or saccharides [10-12].