3. Chromatographic Properties of Porous and Monolithic Media

Alois Jungbauer, Department of Biotechnology University of Natural Resources and Life Sciences Vienna, Austria

In particular when large biomolecules are separated the choice of the physical structure of the chromatography medium is crucial for successful separation. Conventional chromatographic media are composed of highly porous particles whereas monolithic media are cast in a single piece with interconnected channels throughout the bed. The physical characteristics of chromatography material such as bed porosity, particle porosity, connectivity and surface area will be explained, how they can be assessed by simple experimental methods and how they affect chromatographic efficiency and binding capacity. The most prominent media will be compared to each other in this context and a few examples will be shown to demonstrate the effects of these characterisitic properties. Furthermore rules will be discussed how to scale up such chromatographic columns.