

Abstract

The objective of this work was to study the putative interactions between flavour compounds and coffee melanoidins. After extraction, melanoidins were freeze-dried and several flavour compounds from different chemical classes were tested in aqueous solution. The retention of flavour compounds by melanoidins was found to be different in function of the method or time of freeze-drying. Thus, for the same freeze-drying method, the retention capacity of melanoidins increased when the aliphatic chain length of a homologous series of flavour compounds increased. This observation seems to favour the hydrophobic nature of the interactions between melanoidins and flavour molecules. Moreover, for the same aroma compound, the retention capacity of coffee melanoidins was found to vary in function of the freeze-drying method used. Freeze-drying could therefore be involved in the modification of the surface properties of melanoidins or in their denaturation, modifying their retention ability towards volatile flavour compounds. At last, retention by coffee melanoidins decreased with the roasting degree of coffee.