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Partition of volatile compounds in pea globulin–maltodextrin aqueous two-phase system

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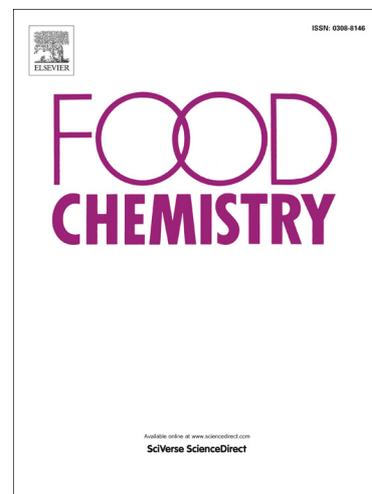
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1 **Partition of volatile compounds in pea globulin–maltodextrin**
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3

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8 **Abstract**

9 This study is based on the assumption that the off-flavour of pea proteins might be decreased
10 using the retention of volatile compounds by a mixture with another biopolymer. The partition
11 of volatile compounds in an aqueous system containing pea protein and maltodextrins was
12 followed under thermodynamic incompatibility conditions. Firstly, the phase diagram of the
13 system was established. Then, the partition of aroma compounds between the phase rich in
14 protein and the phase rich in maltodextrin was measured by SPME-GC-MS. There was a
15 transfer of volatile compounds during phase separation. Variations of pH were also used to
16 vary the retention of volatile compounds by proteins. The concentration of volatile
17 compounds in protein solution at pH 2.4 was higher than at pH 7.2. It was possible to increase
18 the transfer of volatile compounds from the phase rich in protein to the phase rich in
19 maltodextrin using the effect of pH on protein denaturation.

20 **Keywords:** pea protein, maltodextrin, phase diagram, volatile compounds, partition, SPME-
21 GC-MS.

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