

Oligo- and polysaccharides as fraud marker in honey and agave syrup

D. Vetter, München/DE, H.J. Brouwer, Alphen/NL, C. Marvelous, Alphen/NL, M. Eysberg, Boston/US

Antec Scientific, Alphen a/d Rijn, The Netherlands

Honey and agave syrups are susceptible to adulteration with cheaper sweeteners, which compromises their nutritional value and health benefits. One crucial parameter for detecting such adulteration is the presence of oligo- and polysaccharides. These long carbohydrate chains exhibit specific profiles for different types of honey and syrup, making them potential markers for detecting adulteration. Due to the small quantities of these longer carbohydrate chains, they are often separated and detected using a sensitive method such as HPAEC-PAD. This method allows for detailed profiling of oligo- and polysaccharides, enabling accurate assessment of the authenticity of honey and agave syrups.

To enhance the existing profiling method, a HPAEC-PAD separation using the new SweetSep™ AEX200 high-resolution anion-exchange column was developed. The method separates two different types of oligosaccharides (fructo- and malto-oligosaccharides, as shown in Fig. 1), allowing for the identification of adulterants in the samples. The analysis of honey and agave syrup samples using this method demonstrated its capability to provide detailed carbohydrate profiling and detect adulteration.

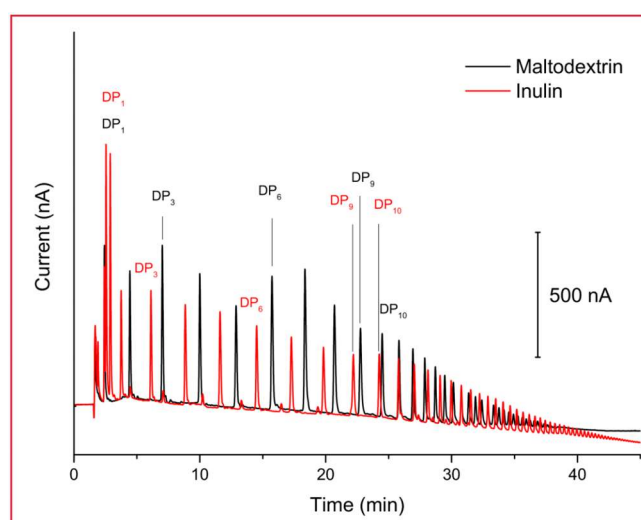


Figure 1. Overlay chromatogram of 10 µL injection of 500 ppm maltodextrin DE 4—7 standard (black) and 200 ppm of inulin standard (red).