Advanced methods for automated high-performance identification of carbohydrates and carbohydrate mixture composition patterns and systems therefore as well as methods for calibration of multi wavelength fluorescence detection systems therefore, based on new fluorescent dyes

The present invention relates to improved (namely, simplified/easier, more robust and more reproducible) methods for identification of carbohydrates compositions, e.g. out of complex carbohydrate mixtures, as well as the determination of carbohydrate mixture composition patterns (e.g.: of glycosylation patterns) based on advanced internal standards to determine precise and highly reproducible migration and retention time indices using novel fluorescent dyes in combination with high performance separation technologies, like capillary (gel) electrophoresis (C(G)E) or (ultra)high performance liquid chromatography (U)HPLC with a highly sensitive detection like (laser induced) fluorescence detection.

In a first aspect, the present invention relates to methods for an automated determination and/or identification of carbohydrates and/or carbohydrate mixture composition pattern profiling as well as a method for an automated carbohydrate mixture composition pattern profiling based on the use of at least a first and second fluorescent label for labelling the migration/retention time alignment standard and sample or different samples, respectively, whereby the at least one of that fluorescent dye is a compound as defined herein.

Moreover, the present invention relates to a method for calibration of multi wavelength fluorescence detection systems as well as calibration systems or calibration standards and new compounds suitable for calibration are described.

The present invention relates further to a kit or system for determining or identifying carbohydrate mixture composition patterns as well as a kit or system for deter-