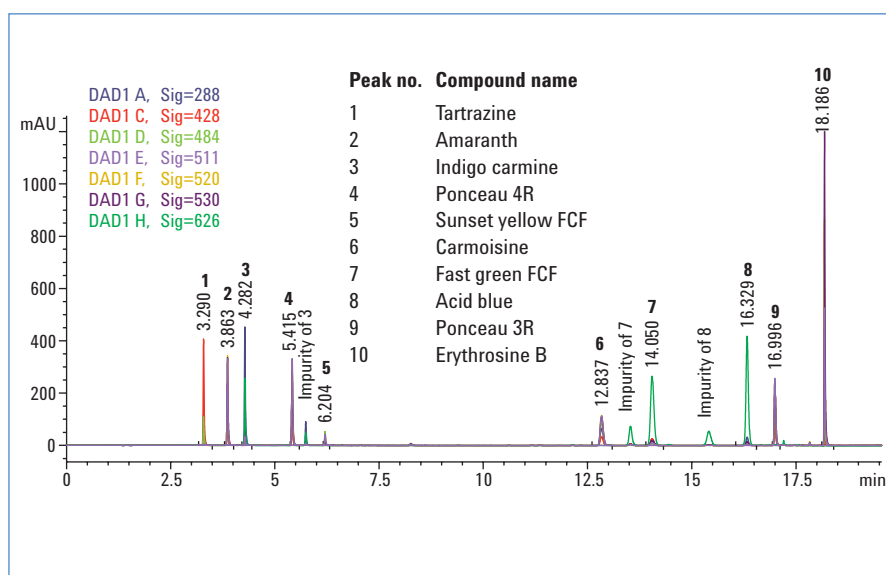




Analysis of color additives in sweets



Abstract

- Method development
- Method validation
- Sample preparation
- Real-life sample analysis

Synthetic or artificial colors are used as additives in food and drinks to improve the appearance of the product. In this study, a robust RP-HPLC method for simultaneous determination of 10 synthetic colorants was developed. Separation and quantification was achieved by an Agilent 1260 Infinity LC System using an Agilent Poroshell EC-C18 column. Suitability of this method to quantify artificial colorants from food matrix is demonstrated by analyzing color additives from sweets. Finally, this HPLC method was effectively transferred to a short UHPLC method using an Agilent 1290 Infinity LC System for faster analysis without compromising resolution. Sample preparation for LOD, LOQ and linearity studies was facilitated by incorporating the Agilent 7696A Sample Prep WorkBench into the analytical workflow.

Scope and Benefits

A color additive is defined as any dye, pigment, or substance which, when added to food, is capable of imparting color. Synthetic colors are chemically synthesized colors like tartrazine and indigo carmine. There are many reasons for adding color in food. Adjusting the color loss due to long term storage conditions, correcting the natural variations in color, and providing color to colorless foods are some of them. It is proven that overexposure to artificial colors beyond the allowed daily intake limit can provoke hyperactivity and other disturbed behavior in children. The Food and Drug Administration (FDA) has regulations to control and ensure the usage of only permitted color additives in food.

Analytes

Tartrazine, Amaranth, Indigo carmine (Indigotine), Ponceau 4R (Ponceau SX), Sunset yellow FCF, Carmoisine, Fast green FCF, Acid blue (Eryoglucine), Ponceau 3R, Erythrosine B

Matrix

Sweets

Ordering Information



Agilent 1260 Infinity Binary LC

Description

- 1260 Infinity Quaternary Pump with integrated vacuum degasser
- 1260 Infinity High Performance Autosampler
- 1260 Infinity Thermostatted Column Compartment
- 1260 Infinity Diode Array Detector
- Max-Light flow cell (60 mm path length)

Part Number

G1311B
G1367E
G1316A
G4212B
Option #031

Agilent 1290 Infinity LC

Description

- 1290 Infinity Binary Pump with integrated vacuum degasser
- 1290 Infinity High Performance Autosampler
- 1290 Infinity Thermostatted Column Compartment
- 1290 Infinity Diode Array Detector

Part Number

G4220A
G4226A
G1316C
G4212A

Software

Agilent ChemStation B.04.02 or higher

Columns

Description

Poroshell 120 EC-C18 column 4.6 x 150 mm, 2.7 μ m
Poroshell 120 EC-C18 column 2.1 x 75 mm, 2.7 μ m

Part Number

693975-902
697775-902

Chemicals

HPLC grade solvents
All chemicals were purchased from regular suppliers

For full details of this application see

Agilent Application Note 5990-9525EN

www.agilent.com/chem/lc



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