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The same procedure as every year or coumarin in cinamon cookies

We got used to alarming news like: the cows go mad, the pigs got fever, birds have the flue, people have AIDS and now just before Christmas even the cinamon cookies are in trouble. Christmas the last bastion of contemplation in our hectic time: do we have to celebrate the festive season counting our daily consumption of cinamon cookies?

The German Federal Institute of Risk Management recommends that adults (60 kg) should not eat more than 16 coumarin encumbered cinamon cookies daily. For children (15 kg) with their much lower body weight, the recommended limit is as low as 4 cinamon cookies a day. The good news is, for once some pounds extra can be positive. (approx 1 cinamon cooky/4 kg) The Swiss Federal Office of Public Health FOPH (Bundesamt für Gesundheit) follows this recommendation. Coumarin if consumed in high doses can cause liver damage and it is said to cause cancer.

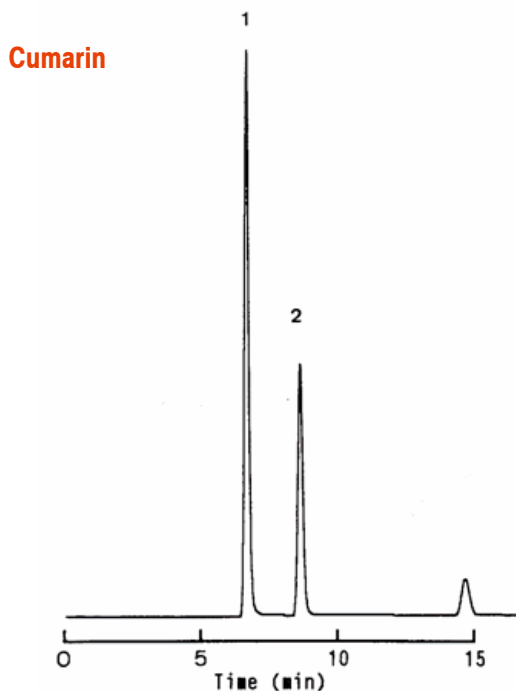
The coumarin in the cinamon cookies comes from the Cassia cinamon. It is cheaper than Ceylon cinamon which contains hardly any coumarin. Some sources claim that Cassia cinamon is also more aromatic. This means less costs for more cinamon flavour per cinamon cooky and increases the profit at the end of the year.

There is a limit for coumarin (2 mg/kg product), which means it has to be analysed. The sample preparation can be done with an ultrasonic sound extraction with methanol or with a soxhlet extraction and can be analysed on a RP-C18 as shown in the attached example.

This brings us to today's subject. With any natural sample, some of the matrix goes into the sample mix and some of this "wild mix" will encumber your HPLC column. In order to improve the life span of your column, we recommend polymer based columns rather than silica based ones. The new ODP 2 HP from Shodex does not only have a good life span, because protein residues don't "blot up" the phase it also remains efficient with constant back pressure. In addition it can be used over a wide pH range of 2 – 13 (!) and shows considerable better selectivity and retention for alkaline and hydrophilee solutes. This allows critical separations which up to today failed because of the life span of the column or it's seperation abilities. Thus it comes full circle to coumarin, then every cent counts in the competitive market of service laboratories where an analysis of coumarin costs around 135 CHF (80 EUR). A column with an increased life span means less costs/analysis.

Ramains for us to wish you a good tuning in to the upcoming festive season. Why not treat yourself or a colleague to an ODP2 HP.

Silica Based RP Column from Shodex eg. for the Separation of Coumarin



Column: **Shodex Silica C18M 4D**
 Eluent: Methanol: H₂O = 4:6
 Flow Rate: 1.0 ml/Min
 Detector: UV (254 nm)
 Column Temp.: 30 °C
 Injection Vol.: 5 µl
 Sample: 1. Coumarin (170 ppm)
 2. Dihydrocoumarin (770 ppm)

8920-Silica-C18M4D
 Plate Number: ≥ 10.000
 Particle Size: 5 µm
 ID x length: 4.6 x 150 mm

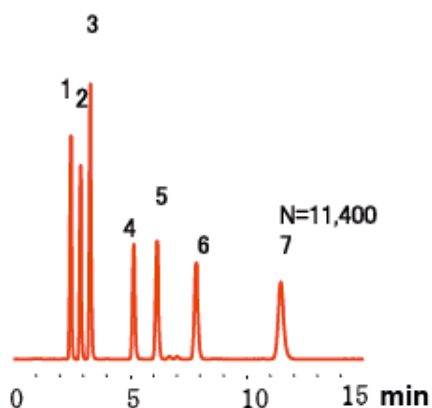
CHF 700.00/pcs.

New Polymer based RP Column from Shodex: Asahipak ODP2 HP

- higher TPN than ODP-50
- can retain high polarity substances
- can separate drugs from protein
- pH 3 - 12

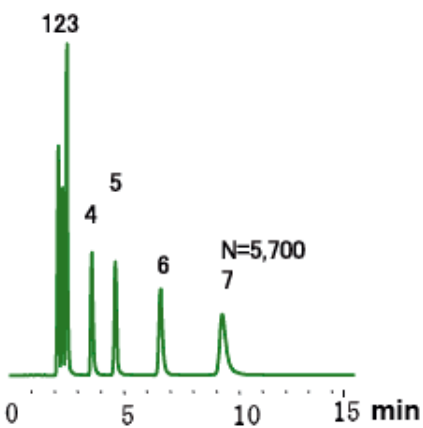
New: Polymer Column ODP2 HP-4D

4.6 mm ID x 150 mm
 H₂O/CH₃CN= 55/45
 0.6 ml/Min, 40 °C



Polymer Column ODP-50 4

4.6 mm ID x 150 mm
 H₂O/CH₃CN = 35/65
 0.6 ml/Min, 40 °C



Sample: 5µl

1. Uracil 30 mg/l
2. Theobromine 75 mg/l
3. Caffeine 130 mg/l
4. Phenol 300 mg/l
5. Methyl benzoate 350 mg/l
6. Toluene 1000 mg/l
7. Naphthalene 150mg/l

8920-ODP-HP-4D
 Plate Number: ≥ 11.000
 Particle Size: 5 µm
 ID x length: 4.6 x 150 mm

CHF 880.00/pcs.