Technische Universität Braunschweig | Institute of Food Chemistry
Schleinitzstraße 20 | 38106 Braunschweig | Germany

Certificate of Analysis

Sample: **Sunday Natural Products GmbH Grape Seed Extract**

Date of Analysis: 16/01/2018

Analysis	Results (%)	Internal Reference (%)
monomeric Proanthocyanidins:	7,28 ± 0,25	9,36 – 13,99
galloylated monomeric Proanthocyanidins:	1,69 ± 0,01	2,00 – 2,71
dimeric Proanthocyanidins:	5,04 ± 0,13	7,26 – 10,62
galloylated dimeric Proanthocyanidins:	1,00 ± 0,07	1,88 – 5,37
trimeric Proanthocyanidins:	1,84 ± 0,11	2,48 – 4,42
tetrameric Proanthocyanidins:	2,08 ± 0,21	1,36 – 2,85
pentameric Proanthocyanidins:	1,75 ± 0,22	0,63 – 2,89
polymeric Proanthocyanidins:	65,74 ± 2,19	47,86 – 81,17
Total Proanthocyanidins:	86,42	

Method (1) Diol-HPLC-PDA, all samples analysed in duplicate

HPLC-PDA

Pump:	G1312A Bin Pump, Agilent Technologies 1200 Series (Waldbronn, D)
Column oven	G1316A TCC, Agilent Technologies 1200 Series (Waldbronn, D)
PDA:	G1315D DAD, Agilent Technologies 1200 Series (Waldbronn, D)
Autosampler:	G1329B 1260 ALS, Agilent Technologies 1260 Infinity (Waldbronn, D)
Thermostat Autosampler:	G1330-89011, Agilent Technologies 1200 Series (Waldbronn, D)

HPLC-Conditions

Column:	MonoChrom 3 Diol; (150 mm × 2.0 mm i.d.), Agilent (Waldbronn, D)
Mobile phase:	A: Acetonitrile/Acetic acid (98/2, v/v) B: Methanol/Water/Acetic acid (95/3/2, v/v/v)
Gradient:	0 – 19 min, 0 – 16 % B, 19 – 30 min, 16 – 100 % B, 30 – 40 min, 100 % B isocratic, 40 – 45 min, 100 – 0 % B, 45 – 50 min, 0 % B
Flowrate:	0,2 mL/min
Detectionwavelength:	280 nm
Reference substances:	(+)-Catechin, Procyanidin B1 (dimeric Procyanidin), Procyanidin C1 (Epicatechin trimer), Cinnamtannin A2 (Epicatechin tetramer), PhytoLab GmbH & Co. KG (Vestenbergsgreuth, D)

(1) Kuhnert, S.; Lehmann, L.; Winterhalter, P.; Rapid characterisation of grape seed extracts by a novel HPLC method on a diol stationary phase, *Journal of Functional Foods*, **2015**, 15, pp 225–232