



INSURING THE
SAFETY OF
OUR FOOD

FOOD SAFETY BULLETIN

Polyphenols Analysis in Food and Nutritionals

Polyphenols are a category of plant compounds that offer various health benefits including boost digestion and brain health, as well as protect against heart disease, type 2 diabetes, and even certain cancers.

Polyphenols have antioxidant properties and they are present in fruits and vegetables, nuts and seeds, herbs, cocoa products, wholegrain products, tea and coffee, and red wine. They are also in nutritional products.

ADPEN Laboratories uses various multiresidue methods of analysis for polyphenols in several matrices with different approaches. Total polyphenols Limit of Quantitation (LOQ) is 10 mg/100g, proanthocyanidins LOQ is 1000 ppm and total anthocyanins LOQ 10 ppm. The analytical techniques also detect catechins, procyanidins, and anthocyanins, at a Limit of Quantitation of 5 ppm; isoflavonoids at a Limit of Quantitation of 20 ppm and single determinations of flavonoids from 0.05 to 5 ppm. A list of Analytes per method group can be found in the following pages.

Value Proposition

ADPEN is a leading provider of analytical testing services, offering solutions to facilitate global food trade and improve the safety of the supply chain.

ADPEN will provide analytical testing services to:

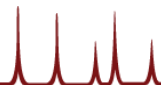
- ◇ Help our clients mitigate risks and make business operations more sustainable.
- ◇ Verify food and beverage products are in full compliance with label claims.
- ◇ Ensure the highest level of quality and safety you demand in your product and supply chain.



Contact us to request more analysis information:

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ADPEN
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QUALITY AND EXCELLENCE

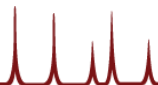


Determination of Polyphenols List of Analytes

Analytes	Analytical Technique	Limit of Quantitation ppm (mg/kg)
CATECHINS		
Gallic Acid	LC-MS/MS	5.0
Catechin	LC-MS/MS	5.0
Catechin Gallate	LC-MS/MS	5.0
Epicatechin	LC-MS/MS	5.0
Epi-catechin gallate	LC-MS/MS	5.0
Epi-gallo-catechin	LC-MS/MS	5.0
Epi-gallo-catechin gallate	LC-MS/MS	5.0
Gallo-catechin	LC-MS/MS	5.0
Gallo-catechin-gallate	LC-MS/MS	5.0
PROCYANIDINS		
Procyanidin A2	LC-MS/MS	5.0
Procyanidin B1	LC-MS/MS	5.0
Procyanidin B2	LC-MS/MS	5.0
Procyanidin C1	LC-MS/MS	5.0

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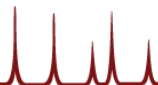


Determination of Polyphenols List of Analytes

Analytes	Analytical Technique	Limit of Quantitation ppm (mg/kg)
ANTHOCYANINS		
Cyanidin 3,5-diglucoside	LC-MS/MS	5.0
Cyanidin 3-arabinoside	LC-MS/MS	5.0
Cyanidin 3-galactoside	LC-MS/MS	5.0
Cyanidin 3-glucoside	LC-MS/MS	5.0
Cyanidin 3-rutinoside	LC-MS/MS	5.0
Cyanidin 3-sambubioside	LC-MS/MS	5.0
Delphinidin 3-glucoside	LC-MS/MS	5.0
Delphinidin 3-sambubioside	LC-MS/MS	5.0
Malvidin 3,5-diglucoside	LC-MS/MS	5.0
Malvidin 3-galactoside	LC-MS/MS	5.0
Malvidin 3-glucoside	LC-MS/MS	5.0
Pelargonidin 3-glucoside	LC-MS/MS	5.0
Peonidin 3-glucoside	LC-MS/MS	5.0
ISOFLAVONOIDS		
Daidzeina	HPLC-DAD	20.0
Glycitein	HPLC-DAD	20.0
Genistein	HPLC-DAD	20.0
Biochanin A	HPLC-DAD	20.0
Formononetin	HPLC-DAD	20.0
Daidzina	HPLC-DAD	20.0
Glycithin	HPLC-DAD	20.0
Genistine	HPLC-DAD	20.0

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Determination of Polyphenols List of Analytes

Analytes	Analytical Technique	Limit of Quantitation ppm (mg/kg)
FLAVONOIDS—INDIVIDUAL DETERMINATIONS		
Rutina	HPLC-DAD	5.0
Hesperidin	HPLC-DAD	5.0
Galangin	HPLC-DAD	5.0
Naringin	HPLC-DAD	5.0
Diosmin	HPLC-DAD	5.0
Quercetin	HPLC-DAD	5.0
Resveratrol	HPLC-DAD	5.0
Troxeutin	HPLC-DAD	5.0
Apigenin	HPLC-DAD	0.05-0.5
Galangin	HPLC-DAD	0.05-0.5



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