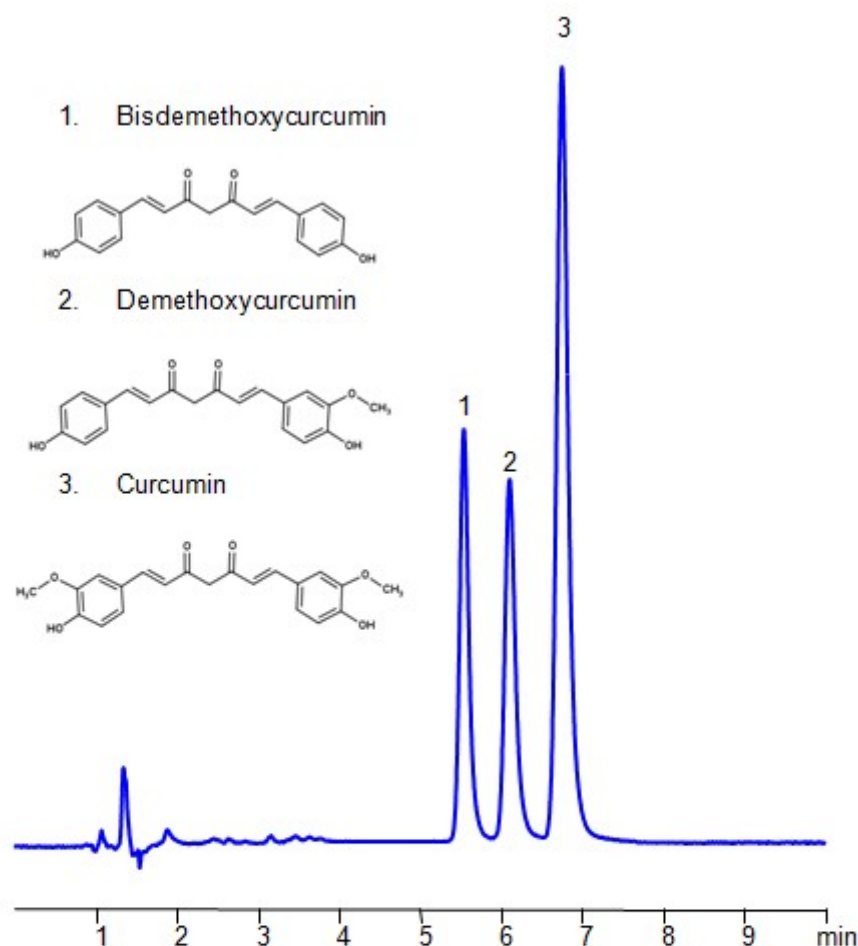


HPLC Method for Analysis of Curcuminoids in Turmeric Capsules on Newcrom R1 Column

<https://sielc.com/hplc-determination-of-curcuminoids>

Chromatogram



Column:	Newcrom R1
Column size:	4.6 × 150 mm, 5 µm
Column part number:	NR1 - 46.150.0510
Mobile phase:	MeCN/H ₂ O - 50/50%
Buffer:	H ₂ SO ₄ – 0.1 %
Flow rate:	1.0 mL/min
Detection:	Vis 425 nm

Description

HPLC Method for Analysis of Curcumin , Bisdemethoxycurcumin , Demethoxycurcumin on Newcrom R1 Column by SIELC Technologies

Turmeric is a yellow spice derived from the rhizomes of the plant *Curcuma longa*. It has been used for centuries in culinary and medicinal traditions, especially in Indian and Southeast Asian cultures. One of the main bioactive components responsible for many of turmeric's potential health benefits is curcumin.

The curcumin content in turmeric varies depending on the source and preparation, but typically, dried turmeric powder contains about 2-5% curcumin by weight. This relatively low percentage is one reason why many curcumin supplements are made using extracts to provide a concentrated dose.

Curcuminoids are a group of polyphenolic compounds found in turmeric (*Curcuma longa*). They are responsible for the yellow color of the turmeric spice and are also the main bioactive components believed to be responsible for many of the potential health benefits of turmeric.

Curcumin, also known as diferuloylmethane, is the primary and most studied component with the chemical formula $C_{21}H_{20}O_6$. It accounts for 60-70% of the curcuminoids in turmeric. Due to being unstable and poorly bioavailable, research into its potential medical uses has been limited. It has a wide variety of uses outside of the medical, however. It is commonly used as a dietary supplement, in cosmetics, and as food flavoring. You can find detailed UV spectra of Curcumin and information about its various lambda maxima by visiting the following link.

Demethoxycurcumin is a compound that constitutes about 20-27% of the curcuminoids. It has the chemical formula $C_{20}H_{18}O_5$. It is considered to be more stable than curcumin and is said to have anti-inflammatory and antioxidant properties. You can find detailed UV spectra of Demethoxycurcumin and information about its various lambda maxima by visiting the following link.

Bisdemethoxycurcumin makes up around 10-15% of the curcuminoids. It has the chemical formula $C_{19}H_{16}O_4$. Unlike some other curcuminoids, it is absent in Javanese turmeric. It is used primarily as a pigment, but it is said to have nutraceutical, antimutagenic, and antioxidant properties. You can find detailed UV spectra of Bisdemethoxycurcumin and information about its various lambda maxima by visiting the following link. These compounds have been studied for their potential anti-inflammatory, antioxidant, anticancer, and neuroprotective properties, among others. Due to their low bioavailability, many formulations, such as those combined with piperine (from black pepper), have been developed to enhance absorption in the body.

Method Parameters

Mobile Phase	MeCN/H ₂ O – 50/50%,
Buffer	H ₂ SO ₄ – 0.2%
Flow Rate	1.0 ml/min
Detection	Vis 425 nm
Class of Compounds	Polyphenols
Analyzing Compounds	Curcumin, Bisdemethoxycurcumin, Demethoxycurcumin

HPLC Column Used

Newcrom R1, 0.5 x 150 mm, 5 µm, 100 Å, dual ended

[Order this column at hplc-shop.de →](#)