

NATURAL INGREDIENT IDENTIFICATION

QUALITY AND REGULATORY COMPLIANCE TESTING SERVICES

Your Natural Ingredient Quality and Regulatory Testing Partner

- Industry leader with global regulatory from consulting to analytical testing
- Over 15 years of in-depth expertise in natural botanical ingredients tests in various products
- ISO-17025 and cGMP111, 210/211 complied state-of-the-art laboratory analytical capabilities



Natural nutraceutical ingredients are very complex in composition and known to vary from genus, species and regional difference. Identification and authentication are important and required under the DSHEA law and FDA regulation for dietary supplement manufacturing and distribution under cGMP to ensure product potency, purity and safety. Regulatory agencies in other countries also have similar regulations. You can count on the in-depth expertise and capability of Intertek Champaign Laboratories to ensure your regulatory compliance on ingredient identification testing.

The Challenge

Identification of botanical ingredients is a unique challenge for manufacturers of natural nutraceutical and functional foods due in part to its complexity of original botanical materials and processing of ingredient composition. Under the DSHEA law, manufacturers of botanical nutraceuticals and products containing botanical ingredients must ensure the identity, potency and purity requirements. Identification of botanical ingredients requires not only in-depth knowledge of the taxonomy and chemical composition of a botanical ingredient, but also a suite

of analytical techniques and availability of authenticated reference standards. With the increasing regulatory and consumer demand for quality and transparency of supplement products, manufacturers and distributors are turning to the in-depth knowledge and analytical capability of dedicated external laboratories for their needs in botanical ingredient identification.

Our Solutions

Intertek can provide you identification, potency, purity and safety testing for natural ingredients and products based on our breadth of expertise from over 15 years of focused analytical work and our state-of-the-art cGMP and ISO-17025 certified laboratories equipped with a broad range of platform technologies required for botanical ingredient identification. We can provide botanical ingredient identification from raw materials, semi-processed ingredients/ extracts to highly processed extracts with scientifically appropriate techniques and validated methodologies (e.g., USP and AOAC) with complementing technologies to arrive at scientifically valid identification. Our highly experienced scientific and technical staff (many with

Ph.D. and M.S. in the botanical chemistry fields) can provide close support to ensure your needs are met.

CASE STUDY

Identification of aerial parts and roots of *Echinaceae purpurea*:

Echinaceae purpurea is native to North America. Extract of its aerial parts and root has been used in various natural supplements. Its known complex constituents include signature phytochemicals, polysaccharides, caffeic acid derivatives, alkaloids and glycoproteins. Identification can be achieved by HPTLC profiling of the caftaric acid and chicoric acid in raw plant materials. Intertek Champaign Labs provided the HPTLC analysis of caftaric and chicoric acids as major markers for identification of raw materials of aerial parts and roots. However, knowing that inappropriate extraction of phytochemicals may easily lead to errors in profiling the critical ingredient marker compounds and thus erroneous identification, our laboratory developed an HPLC method specifically suitable for the extraction process that led to an extremely low level of the marker compounds, thus positively identified the blended *Echinaceae purpurea* extract. This example highlights the expertise and technical resources that Intertek can provide for botanical ingredient identification to achieved quality and regulatory compliance.



Our Services

Intertek Champaign Laboratories, an Intertek Center of Excellence in botanical chemicals analysis, offers a wealth of expertise and technical capability for botanical ingredient identification, potency and purity tests in our state-of-the-art laboratories equipped with analytical technologies such as HPTLC, HPLC, GC/GC-MS, LC-MS/MS, ICP, FT-IR, RT-PCR, wet chemistry, biochemical and microbiological analysis for both raw ingredients and finished products. Appropriate techniques are chosen to ensure critical ingredient markers are analyzed while interference by complex botanical matrix is addressed. Our laboratories can provide the analytical testing using either published (e.g., USP, AOAC) or cGMP validated methods in compliance with regulatory and client requirements.

The following are examples of botanical identification of ingredients at various forms:

- **Identification and quantitation of semi to highly processed ingredients** – HPLC, GC, LC/MS, TOF-MS of identification of signature chemical markers in conjunction of reference standard markers
- **Confirmatory identification of blended processed ingredients** – HPLC, GC, LC/MS, TOF-MS of identification of signature chemical markers in conjunction of reference standard markers

We provide these services with our dedicated client services team and consultation with senior scientific and technical staff for consultation when required.

The Intertek Advantage

Intertek is a leading Total Quality Assurance provider to industries worldwide. Through our network of more than 1,000 laboratories and offices and over 42,000 people in more than 100 countries, the Group is re-defining the industry with our Total Quality Assurance proposition.

We go beyond physical quality control to provide total peace of mind through our innovative and bespoke Assurance, Testing, Inspection and Certification solutions for our customers' operations and supply chains. Intertek Total Quality Assurance expertise, delivered consistently, with precision, pace and passion, enabling our customers to power ahead safely.

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