



Technical Services

ChromaDex is pleased to offer a wide range of technical services “from Biomass to Bottle”:

Analytical Services

Identity testing
Analytical testing
Contaminant screening
Stability studies

Contract Research Services

Method development and implementation
Method validation
Target compound isolation
Compound synthesis
Fermentation
Process development

Consulting Services

Litigation support
Raw material selection
GMP compliance
QC/QA program development

ChromaDex is a Natural Products company. Established in 1999 to supply phytochemical reference standards for the dietary supplements industry, we now list over 4000 items in our phytochemical catalog. ChromaDex is the leading provider of high purity phytochemical reference standards and reference materials to the pharmaceutical, nutraceutical, dietary supplement, food and beverage, and cosmetic industries.

Over the past five years, ChromaDex has built a world-class team of scientists, covering every aspect of natural products chemistry. To provide the best possible service to our clients, ChromaDex has concentrated its capabilities into one modern laboratory located in Boulder, Colorado. ChromaDex is a Life Science business that is publicly traded. (OTC stock symbol CDXC.OB)

ChromaDex has the staff and equipment resources to provide a wide range of contract services for our clients as well as support internal research and manufacturing activities.

Analytical Services

ChromaDex provides a wide range of Contract Analysis. These Contract Services are ideal for companies, teams, and individuals requiring testing of everything from a single raw material to a complex finished product. The work is performed using the latest analytical techniques in our 13,000 square foot Boulder Colorado Laboratory.

Identity Testing

Provide confirmation of identity utilizing high performance thin layer chromatography (HP-TLC), nuclear magnetic resonance imaging (NMR) or liquid chromatography (HPLC) of:

- Plant species
- Raw material
- Active compounds
- Marker compounds
- Constituents in finished products

Analytical Testing

Perform complete analytical testing of raw materials or finished products using mass spectrometry, gas or liquid chromatography and/or HP-TLC for:

- Quantification of active compounds
- Verification of label claims
- Product homogeneity

Contaminant Testing

Offer unique analytical techniques to identify:

- Adulterants
- Analogs
- Microbiological contamination
 - Total aerobic plate count
 - Yeast and mold
 - Listeria
 - Salmonella
 - Pseudomonas
 - Enterobacteriaceae
 - Staphylococcus aureus
- Pesticides
- Metals

Stability Studies

Measure short and/or long term stability of a product using monitored chambers. Duration can be from days to years depending upon client requirements:

- Room temperature
- Accelerated (40° C, 75% relative humidity)
- Custom



Technical Services

Contract Research Services

Method Development and Implementation

Having at your finger tips fast, accurate analytical methods is crucial to the success of a company. For example:

- Create customer specific analytical methods using HP-TLC, HPLC, GC, GC/MS, and/or LC/MS instrumentation
- Consolidate methods to allow faster analysis, reducing costly equipment change over and related downtime
- Refine existing customer methods to yield a more accurate and reliable technique
- Implement customer methods in the Boulder Laboratory

Method Validation

Validating an analytical method is an involved process that is best performed at a qualified laboratory like ChromaDex. Method validation insures the robustness of the method. ChromaDex can:

- Perform a single laboratory validation
- Organize and administer a multiple laboratory validation
- Work with organizations like the Association of Analytical Communities (AOAC) to validate a customer method

Target Compound Isolation

Isolating or extracting a specific chemical compound or family of compounds is a service that ChromaDex has a wealth of experience in performing. For example:

- Isolate a key compound from biomass or a complex matrix
- Identify side stream compounds of interest during the isolation process
- Separate a specific compound from an intermediate or extract product
- Create a library of compounds from an extraction process for use in high throughput screening



Synthetic Chemistry

Synthesizing a specific compound can be a more cost effective means of obtaining a consistent material at the required quantities and purity. ChromaDex is uniquely positioned to provide services such as:

- Perform feasibility studies
- Identify economical synthetic routes to achieve end product
- Synthesize the desired final product using low cost intermediate starting materials
- Take an existing synthetic route and reduce the total number of required steps
- Improve yield from a client's synthetic process

Process Development

Utilizing our years of experience and knowledge gained from isolation and synthesis chemistry, ChromaDex has the ability to scale up processes from milligrams to kilograms of material. ChromaDex can:

- Perform feasibility studies
- Identify the most cost effective scale up approach
- Optimize process yields
- Minimize or eliminate impurities or unwanted side stream compounds
- Define and implement scale up parameters

Fermentation

Employing knowledge and techniques developed as part of a Natural Science Foundation (NSF) funding initiative ChromaDex can now aid clients in exploring fermentation as a high volume production option. For example:

- Has in-house fermentation expertise
- Provide bench scale development capabilities
- Can access large scale fermentation equipment





Consulting Services

Litigation Support

Providing expert testimony for over 10 years such as:

- Preparation of technical briefs
- Perform supporting analytical testing
- Provide expert witness testimony

Raw Material Selection

Using our vast knowledge of natural compounds ChromaDex is uniquely positioned to help our clients get the right raw material at the right price. For example:

- Selecting the best source
- Verifying identity
- Analyzing active compounds
- Accessing a network of raw material suppliers

GMP Compliance

Complying with GMPs can be a daunting task. ChromaDex can assistance companies to insure they meet both the letter and intent of the law. ChromaDex can:

- Provide consultative audits
- Perform analytical testing from biomass to bottle
- Review documentation and procedures

QC/QA Program Development

Having a QC/QA program can be a costly but necessary component of a business. ChromaDex provides consulting services to help companies improve the effectiveness of the QC/QA function such as:

- Perform document review
- Create and review SOPs
- Provide independent QC/QA audits