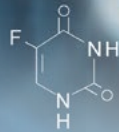
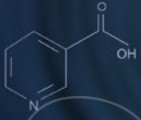
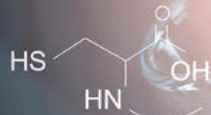
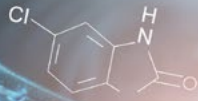


BRAZIL

CPHI WORLDWIDE
BARCELONA 2023



CENTROFLORA
GROUP

Partnerships for a better world.



For companies
looking for profitability and
innovation with purpose,
the future has
already begun.

Centroflora
knows the way.
Come with us!

WHAT ARE BRAZIL'S KEY DIFFERENTIATORS?



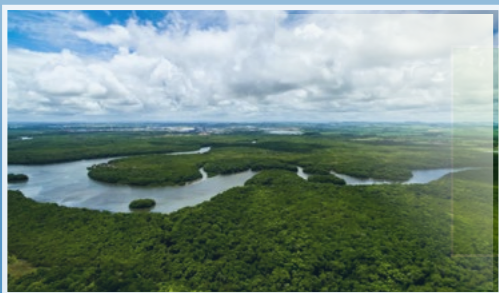
Strategic sourcing of contaminant-free raw materials for your products

Mitigating the risk of pyrrolizidine alkaloids and pesticide residues in your herbal medicine products.



Among leading producers of clean energy in the world and access to inexpensive organic solvents

Brazil's clean energy production represents 87% of its electricity generation (vs. 27% of global average), and is strategically located in one of the most competitive ethanol prices in the world.



Largest Biodiversity on the planet with unrivaled drug-discovery potential

Centroflora's library includes 600 plants, 6,000 fractions and 20,000 unique molecules with drug-discovery potential.



Value creation with purpose: responsible sourcing with a traceable & sustainable supply chain for your business

Four thousand rural families enrolled in farming and wild harvesting of traceable and sustainable ingredients.

WHAT CENTROFLORA GROUP CAN DO FOR YOUR BUSINESS

Centroflora Group has over 65 years of experience in herbal extracts, APIs and pharma-grade essential oils. It is the largest company in its segment in Latin America and a reference worldwide for its sustainable supply chain. It's responsible for 2/3 of the global production of pilocarpine, an API applied in the treatment of presbyopia, xerostomia and glaucoma, and is spearheading the development of innovative phytomedicines by unlocking the untapped potential of Brazilian Biodiversity.

Let us professionally guide you through the largest biodiversity on the planet.



CENTROFLORA'S ECOSYSTEM



Discovery & Innovation

Prospecting opportunities from scientific research, traditional use and Brazilian biodiversity to structure novel botanical extracts and molecular libraries for drug-discovery.



Agricultural Technology & Expertise

Development and establishment of traceable & organic agricultural cultivation chains and agronomic technical support under GACP conditions.



R&D and Industrial Scale-Up

Development of proprietary extracts in bench, pilot and industrial scales under GMP conditions.



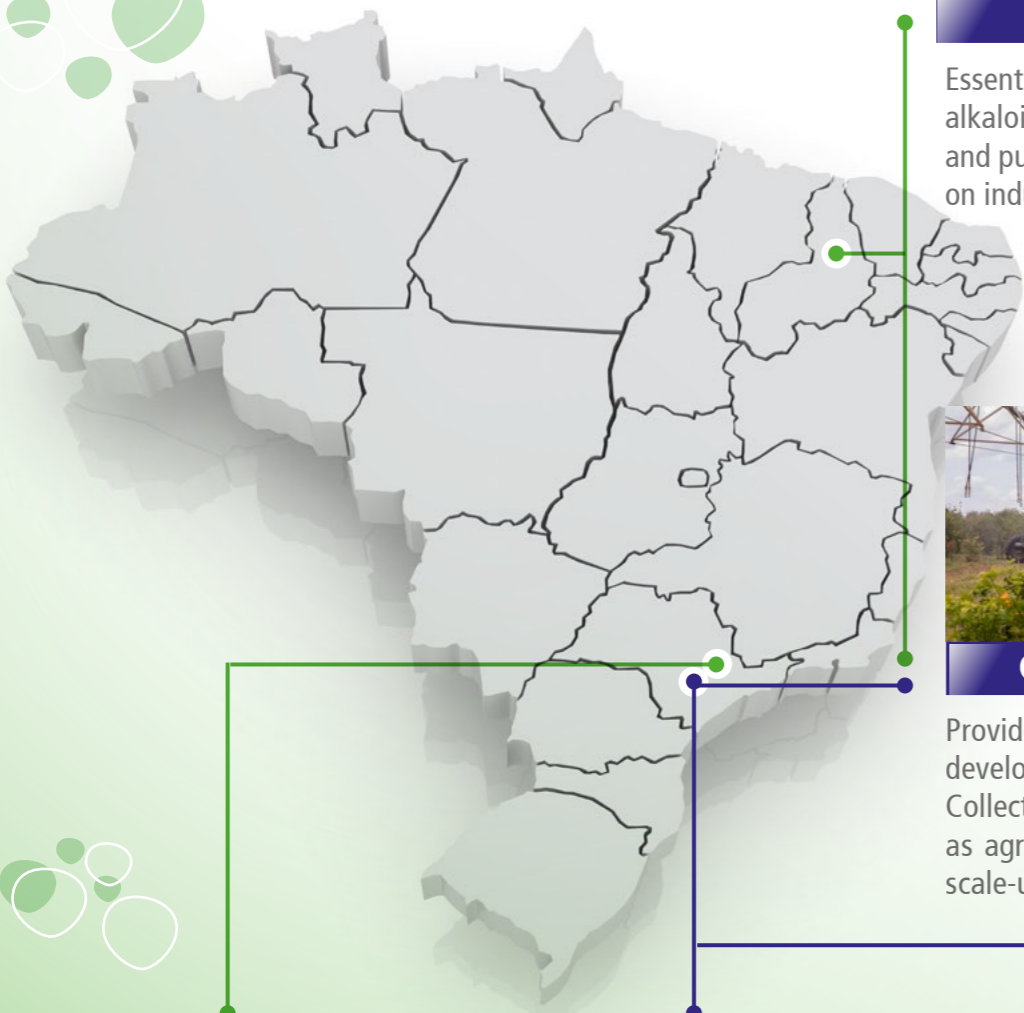
API and Botanical Extracts Manufacturing

Industrial scale manufacturing with GMP Certifications. Technical-regulatory support for dossier or DMFs for new drug registrations.

OUR BUSINESSES

Our solutions provide a robust ecosystem that helps your company innovate, become more efficient, sustainable, socially & environmentally responsible, as well as research & develop proprietary extracts on any scale, and produce herbal preparations that are contaminants-free and GMP-compliant.

WHERE WE ARE



Centroflora IFA

Essential oils extraction, as well as alkaloids and flavonoids extraction and purification, and semisynthesis on industrial scale.



Centroflora Agro

Provides agronomic know-how and development of Good Agricultural Collection Practices (GACP), as well as agronomic R&D and plantation scale-up.



Centroflora Phyto

Botanical extraction and drying services with Industry 4.0 standards. Equipped to perform grinding, extraction, concentration, isolation, purification, crystallization, drying, chromatography and semisynthesis operations.



Centroflora Inova

35 dedicated researchers (15 PhDs) with an ample network of scientific & technology institutions, partnerships with world-class pharmaceutical and biotechnology companies to unlock your business innovation.



Brazbio

Social-environmental management and implementation of projects with responsible sourcing of natural ingredients within principles of ethical biotrade. Over 4,000 families enrolled in farming and wild harvesting of traceable and sustainable ingredients.

OUR SOLUTIONS

Discovery & Innovation

- Access to Brazilian biodiversity, in compliance with local regulations, and bioprospection with expertise in structuring botanical extract libraries
- Technical-regulatory support for the preparation of dossier and/or DMF for registration of new drugs and traditional knowledge of medicinal plants

Agricultural Technology & Expertise

- **Responsible sourcing:** technical assistance, contracted harvests, traceability control
- **Botanical R&D:** bioprospection, quality improvements and ABS support
- **Certifications:** technical support for organic production, good agricultural practices and/or sustainability standards (Fair for Life, UEBT, RA, among others)
- **ESG compliance:** Environmental (E) and Social (S) projects for your business' supply chain
- Cultivation of food and medicinal plants compliant with Good Agricultural Collection Practices
- Agronomical R&D
- Plantation scale-up

R&D and Industrial Scale-Up

- Research & Development of proprietary extracts in test bench, pilot or industrial scale in GMP-certified facility
- Extraction, isolation, and purification process development
- Analytical development and validation
- Pharmacotechnical support & prototype development of drug-delivery vehicles
- Establishment and/or development of traceable agricultural supply chain

API and Botanical Extracts Manufacturing

- Pharma-grade API alkaloid extraction and purification of up to 15 tons/year
- Pharma-grade essential oil extraction with capacity of 5 ton/year
- Toll drying of food, cosmetic, veterinary fields, among others, with capacity for 2,000 tons/year
- Quality Control testing of in-process materials
- Dedicated QA unit



OUR PORTFOLIO

Passionflower

Passiflora incarnata



Liquid/Dry extract (DER 1:1) extraction solvent ethanol 25%

- THMP Monograph EMA/HMPC/669740/2013

Sleep aid and relief of mild symptoms of **mental stress**, such as nervousness, worrying or irritability.

Hedera

Ivy Hedera helix



Dry extract (DER 4-8:1), extraction solvent ethanol 24-30%

Liquid extract (DER 1:1), extraction solvent ethanol 70%

- WEU Monograph (EMA/HMPC/325716/2017)

Herbal medicinal product used as an **expectorant** in case of productive cough.

Comfrey

Symphytum officinale L.



Liquid extract (DER 2:1), extraction solvent ethanol 65%

- THMP Monograph EMA/HMPC/572846/2009

Traditional herbal medicinal product used for the symptomatic relief of **minor sprains and bruises**.

Devil's claw

Harpagophytum procumbens DC.



Dry Extract (DER 2.6-4:1), extraction solvent ethanol 30%

- THMP Monograph EMA/HMPC/627058/2015

Traditional herbal medicinal product for relief of **minor articular pain**.

Artichoke

Cynara cardunculus L.
(syn. *Cynara scolymus L.*)



Dry extract (DER 2-7.5:1), extraction solvent water

- THMP Monograph EMA/HMPC/194014/2017

Traditional herbal medicinal product for the symptomatic relief of **digestive disorders** such as dyspepsia with a **sensation of fullness, bloating and flatulence**.

Boldo

Peumus boldus Molina



Dry extract (DER 5:1), extraction solvent water

- THMP Monograph EMA/HMPC/453725/2016

Traditional herbal medicinal product used for symptomatic relief of **dyspepsia and mild spasmodic disorders** of the gastrointestinal tract.

Pelargonium

Pelargonium sidoides DC



Liquid extract (DER 1:8-10), extraction solvent ethanol 11%

Dry extract (DER 4-25:1), extraction solvent ethanol 11%

- THMP Monograph EMA/HMPC/444244/2015

Traditional herbal medicinal product for the symptomatic treatment of **common cold**.

Salix

Salix alba



Dry extract (8-14:1) extraction solvent ethanol 70%

- WEU Monograph EMA/HMPC/80630/2016

Herbal medicinal product used for the short-term treatment of **low back pain**.

Echinacea

Echinacea purpurea
(compliant with
EMA, USP)



Dry extract

Traditional herbal medicinal product for the relief of symptoms of **common cold**.

Hammamelis

Hammamelis virginiana
(compliant with USP)



Hydrolat

Astringent, purifies and hydrates the skin, tones the skin with **anti-aging effect**.

Chamomile

Matricaria recutita L.



Dry and Liquid Extracts

Traditional herbal medicinal product used for the relief of symptoms of **common cold and for the treatment of minor ulcers and inflammations of the mouth and throat**. Also a traditional product used for the treatment of minor **inflammation of the skin** (sunburn), superficial wounds and small boils (furuncles).

GET TO KNOW SOME OF OUR PROJECTS

PASSIFLORA PROJECT

Centroflora Group has established the sustainable cultivation of Passiflora in the South of Brazil, following Good Agricultural Practices, with a strong social-environmental footprint through income generation, tools and due training to hundreds of small and mid-sized farmers, while delivering organic, traceable and contaminant-free botanical extracts to our clients. Through its agronomic R&D team, Centroflora has improved the plant's chemical marker and productivity cost efficiency of the botanical extract, both of which are manufactured in its GMP-certified facility in Botucatu, state of São Paulo, following Industry 4.0 standards with highly automated processes.



PASSIFLORA

Watch on YouTube ▶



JABORANDI

◀ Watch on YouTube



JABORANDI PROJECT

Centroflora Group has developed a partnership with cooperatives in the northeastern states of Brazil, encompassing over 30,000 wild harvest collectors to identify harvesting locations for the Jaborandi plant, training local collectors on forest management and best practices for wild harvesting, while providing technical assistance, on field, to ensure a sustainable, efficient & traceable ecosystem. The dried leaves are processed in its Northeastern facility, Centroflora IFA, which is responsible for servicing 2/3 of the world's global demand for the API pilocarpine, used in important medications such as dry-mouth disease (xerostomia), glaucoma and, more recently, presbyopia.

MOLECULAR POWER HOUSE (MPH) PROJECT

The MPH aims to increase partnerships and talent sharing between innovators and companies, seeking untapped opportunities from biodiversity and natural compounds, while leveraging its state-of-the-art analytical power to shorten the time-to-market of novel drugs. The MPH project, in collaboration with CNPEM – a private, non-profit organization overseen by the Ministry of Science, Technology, and Innovation (MCTI) in Brazil and home to Sirius, the most complex project in Brazilian science and one of the world's most advanced synchrotron light sources, detects and characterizes new bioactive natural products, reducing costs and development time of these molecules and overcoming classic bottlenecks in natural products research. The project positions Brazil as one of the most relevant players for discovering innovative drugs in the world, and currently has 7 Drug Discovery projects in the pipeline, 2 of which have already finished their hit to lead phase and are moving to the out-licensing phase.



MOLECULAR POWER HOUSE

Watch on YouTube ▶



Ready to Make
a Change?

Let's Talk
Solutions
Today!



**CENTROFLORA
GROUP**

Partnerships for a better world.

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