

Natural Product Libraries

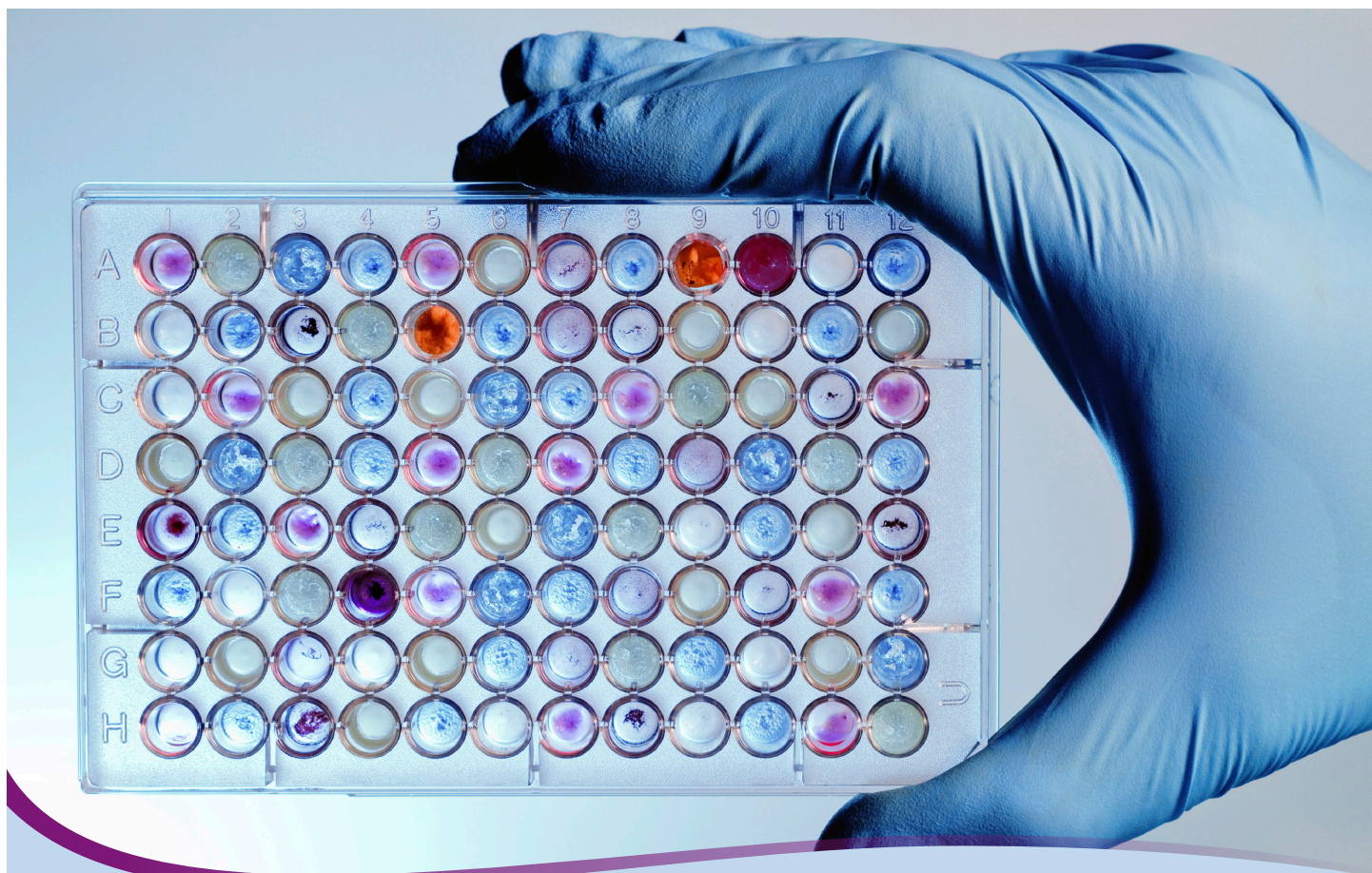
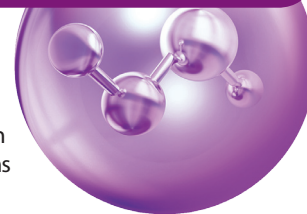
Natural product samples provide broad chemical diversity not typically found in synthetic chemical libraries. As the only contract research organization with the complete team of natural-product discovery and development experts, we have assembled one of the world's most unique and genetically diverse natural product collections comprised of microbial and botanical extracts, coupled with the extensive supporting scientific infrastructure to rapidly identify and develop hits

Natural Product Libraries Characteristics include:

- Extensive biological and genetic diversity (>190,000 biological isolates)
- Lead-finding resource of approximately 300,000 screening wells of crude extracts, pre-fractionated, and purified natural product samples
- Custom library development from previously untapped organisms and plants
- Full natural product support including fermentation optimization and scale-up, isolation, structure determination, characterization
- Full spectrum of medicinal chemistry capabilities to support synthesis and semi-synthesis of complex and novel molecules
- High throughput natural product screening & high throughput active component identification
- More than a decade of *in vitro* biology and pharmacology experience to characterize compounds isolated and identified from natural product screening programs

The AMRI Advantage:

- Proven track record in natural product discovery programs including execution of over 100 different screening programs leading an excess of 700 metabolites identified; ~30% novel
- Comprehensive platforms for integrated natural products Discovery and Development
- Expertise for deconvolution, structure determination, characterization fermentation optimization and scale-up, downstream development, production, derivatization and semisynthesis,
- Experience and bioprocess development support for synthetic biology and engineered strains
- Screening programs and collections include the availability of high throughput, absolute potency, lead optimization biology & selectivity screening services
- Deep understanding of issues unique to screening natural product samples
- Support of both large scale screens of client or AMRI sample collections



For inquiries, email us at: clientservice@amriglobal.com

As part of our comprehensive natural products services offering, we also provide a diverse offering of screening programs and collections, as well as technologies in metabolism and biotransformation. These include proprietary combinatorial biocatalysis technology and extensive fermentation capabilities.


Biocatalysis & Fermentation

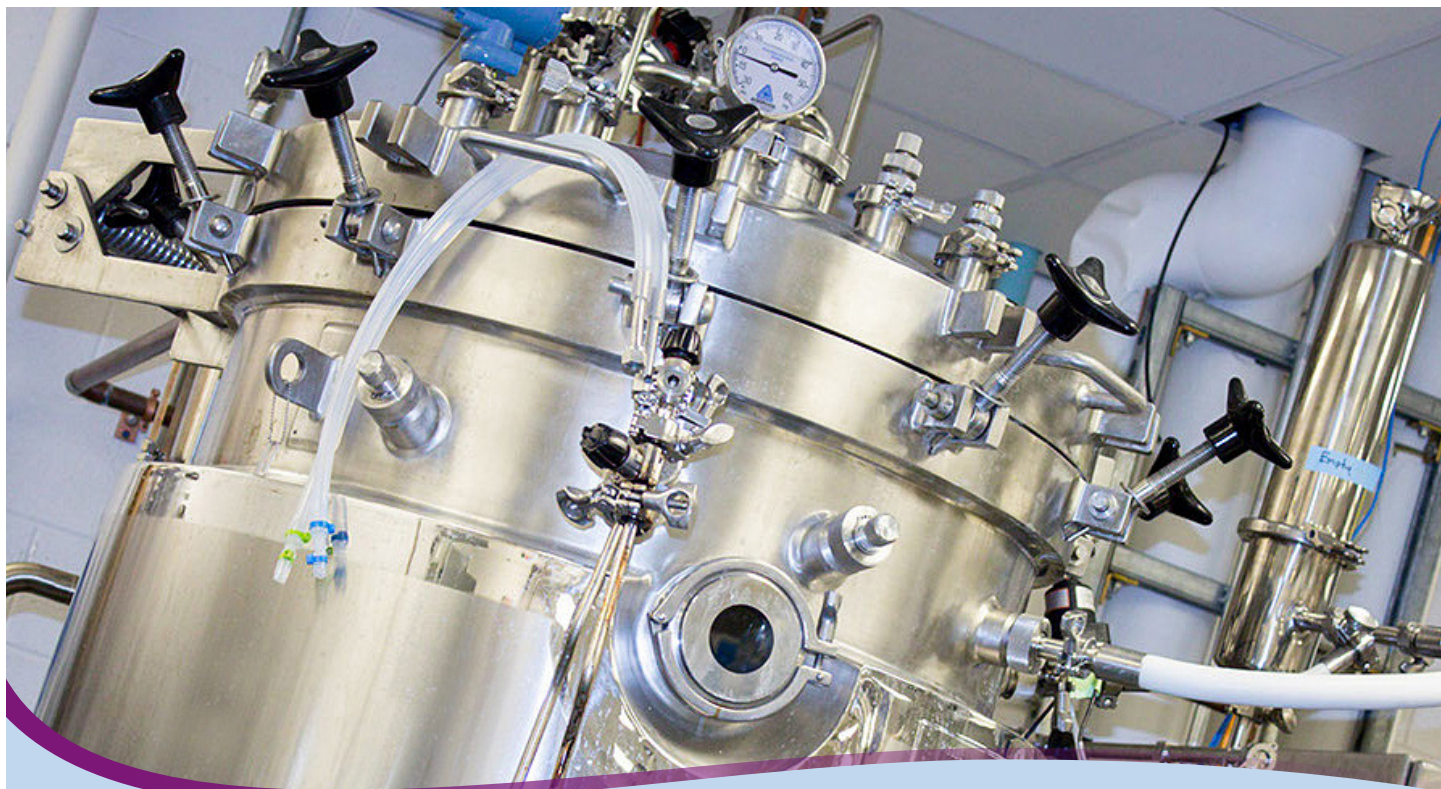
Biocatalysis can expand chemical diversity and enable unique routes for lead optimization. Our technology incorporates stabilized enzymatic and microbial systems into a high throughput platform. A large library of biocatalysts, supplemented by recombinant catalysts allows for a broad range of biocatalytic chemistries. As a result, we can rapidly prepare novel analogs of the starting compound, designed with the pharmacological goals of your project.

Our unique and efficient fermentation processes speed supply of natural product leads and analogs for practical, scalable processes. Typical applications include natural products production, a wide variety of biotransformations to complement classical chemistry, as well as practical bioprocess development and improvement, including synthetic biology and engineered strains.

The AMRI Advantage:

- Full Fermentation, Semi-Synthesis & Biocatalysis Process Development
 - Collection of > 40,000 purified biocatalysts & strains
 - Experience with diverse strains, especially with eubacteria, fungi & yeasts

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- Experience with numerous biocatalyst classes (e.g. hydroxylating, redox, transamination, halogenating)
 - Predetermined phylogenetic and biotransformation capabilities of biocatalysts
 - Proprietary parallel mini-fermentors and bioreactors with D.O.E.
 - High throughput analytical systems (including LC/MS/MS and chiral HPLC)
 - Proven technology-transfer procedures
 - A dedicated server for complete process batch records
 - Extensive downstream separations & chemistry integration
 - Biocatalysis
 - Natural products optimization – broad variety of transformations to complement classical chemistry
 - Hydroxylations & halogenations to enable new chemical “handles”
 - Regioselective modifications to refine structure activity relationships (SAR)
 - Prodrug design
 - Metabolite Synthesis
 - Chemo- and Regio-Selective Labeling, Biomarker & Probe Synthesis
 - Asymmetric synthesis (chiral alcohols, amines, acids, etc.)
 - Medicinal Chemistry: Wide
 - Broad array of Selective modifications to refine structure activity relationships (SAR)
 - Hydroxylations and halogenations to enable new chemical “handles”
 - Natural products optimization
 - Prodrug design



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