

Chemical Synthesis

When you need a customized chemical solution to support your research, turn to MRIGlobal.

MRIGlobal has been supplying government and industrial clients with high-purity, reference-grade chemicals for more than 40 years. We specialize in complex chemical services such as novel synthesis route design and process development, radiolabeled and stable isotope-labeled compound synthesis, comprehensive analytical support services for confirmation of product identity and assessment of product purity, impurity profiling, commercial supply, and technology transfer packages.

Expertise in many chemical types and quantities

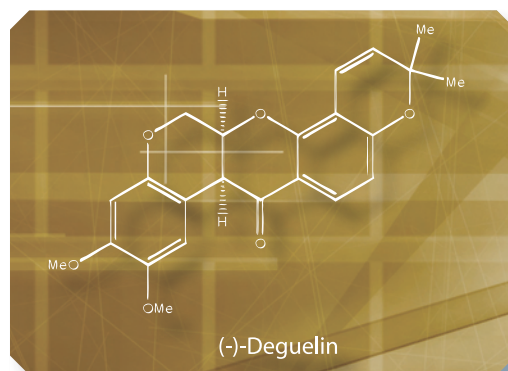
MRIGlobal's Chemical Synthesis Section offers high-quality custom synthesis of compounds in sample sizes ranging from milligrams to hundreds of grams. We unambiguously confirm the purity and structural identity of our compounds, which we can fully characterize by physical criteria, chromatographic analyses, and molecular spectroscopic methods. We also assure complete confidentiality and provide compound data sheets and synthesis reports as needed.

We also specialize in designing approaches and procedures that meet a client's particular synthesis needs, for example, optimizing a product yield to a specific reaction scale or avoiding the use of an expensive or hard-to-obtain material. Additionally, we have the expertise and resources to synthesize previously unknown compounds and substances with no known preparations.

MRIGlobal's many capabilities cover a host of disciplines, allowing our chemists to provide services that smaller labs cannot match, such as coordinating both the synthesis and the testing (stability/solubility, toxicology, ADME, etc.) of a product. We pride ourselves on the caliber of our chemists and the quality of our work.

Radiolabeled and stable isotope-labeled compounds

MRIGlobal also offers custom synthesis of both radiolabeled and stable isotope-labeled compounds, often needed in pharmacokinetic studies and drug development. We are expert in identifying the best labeling location and strategy to ensure metabolic stability as well as economic feasibility.



— MRIGlobal has synthesized a number of chemotherapeutic agents of interest in cancer research.



MRIGlobal

MRIGlobal is a not-for-profit organization that performs contract research for clients in business, industry, and government. Founded in 1944, MRIGlobal is one of the nation's leading independent research institutes. We conduct programs in the areas of life sciences, agriculture and food safety, national security and defense, engineering, and energy research.

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Compound classes and reactions

▲ Compound Classes

- Small molecules
- Steroids
- Heterocycles
- PAHs
- Chiral compounds
- Metabolites, conjugates
- Asymmetric synthesis
- Resolution of enantiomers/diastereomers
- Peptides

▲ Palladium, Nickel Catalyzed Coupling Chemistry

- Suzuki
- Heck
- Sonagashira

▲ Organometallic Chemistry

- Grignards
- Lithium alkyls, aryls
- Organocuprates

▲ Classical Organic Chemistry

- Bond-forming, bond-scission reactions
- Functional group transformations
- Protecting group placement or removal

▲ Chemical Optimization

- Analogues of lead compounds
- Building block/library synthesis
- *In silico* (computational chemistry, SYBYL®)

Novelty, responsiveness, flexibility

MRIGlobal's chemical synthesis services range from the development of routes where no synthetic procedures exist to production using protocols supplied by our customers. With decades of custom synthesis experience, we can accommodate synthesis projects that range from simple small molecules to the most challenging and complex compounds.

Our facilities allow us to handle projects from gram to kilogram scale, reaction temperatures from -80° to 250°C, and pressures up to 5,000 psi.

We routinely work with air- or moisture-sensitive organometallic reagents and handle high-potency, carcinogenic, and other complex reagents.

Quality and confidentiality always come first

MRIGlobal's staff treat project work with strict confidentiality, so important in the sensitive arena of chemical synthesis. MRIGlobal's Quality Assurance Unit ensures objective scrutiny of all project work, and regulated work is performed in strict accordance with GLP, GMP, and cGMP regulations. MRIGlobal's Kansas City facility is ISO 9001:2008 certified.

