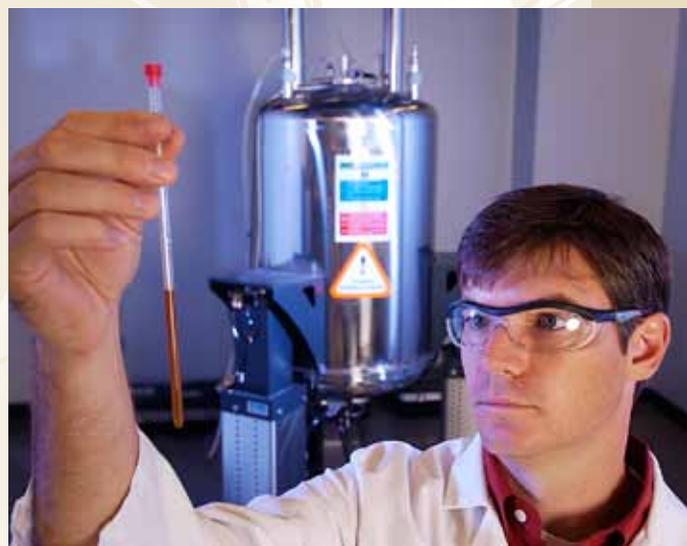
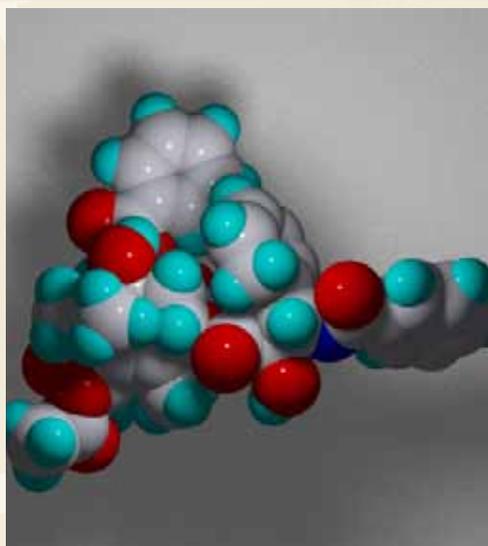


Organic and Medicinal Chemistry



RTI International has provided drug discovery and chemistry support services for the pharmaceutical and biotech sectors for over 50 years. We are fully committed to furnishing quality, expert service to help our clients search for new and better drugs and disease therapies and further scientific progress.

Medicinal Chemistry

- Development and optimization of structure-activity (SAR) and structure-property relationships
- Extensive experience in multiple target classes, including tropanes, opioids, steroids, alkaloids, cannabinoids, retinoids, prostaglandins, peptides, heterocycles, and numerous natural products
- Extensive experience in drug discovery programs in multiple therapeutic areas, especially central nervous system diseases (e.g., Parkinson's, depression), drug addiction therapy, cancer, and contraception
- Computational drug design support, pharmacophore and quantitative structure-activity relationship (QSAR) development, conformational analysis, molecular property prediction, and cheminformatic and database application development

Custom Synthesis

- Radiolabeled compound synthesis, including use of ^3H (tritium), ^{14}C , ^{125}I , ^{32}P , and ^{35}S for ADME, autoradiography, radioimmunoassay, and receptor binding study applications
- Synthesis of analytical reference standards, metabolites, preclinical test materials, stable isotope labeled compounds, degradants/impurities, and industrial/agricultural chemicals
- Analytical support, including extensive multi- and heteronuclear, 1D and 2D, 300 and 500 MHz nuclear magnetic resonance (NMR); preparative and analytical high-performance liquid chromatography (HPLC) and liquid chromatography/mass spectroscopy; and UV-Vis, IR, and polarimetry

Natural Products

- Discovery and isolation of novel bioactive compounds in plants and bacteria through use of our multidisciplinary teams of molecular biologists, natural product and medicinal chemists, and pharmacologists
- Bioactivity-guided fractionation and purification of natural product extracts by multiple chromatographic techniques, including analytical and preparative HPLC
- Characterization of isolated and purified natural product constituents through use of detailed structural elucidation techniques, especially extensive NMR spectroscopic evaluation

Pharmacology

- Development of model organisms and associated plate-based assays based on readouts such as FRET, luminescence, fluorescence intensity, and fluorescence polarization
- In vitro functional assays for G_{ai} -, G_{as} -, and G_{aq} -coupled receptors using [^{35}S]GTP- γ -S binding, measurement of cAMP levels, and Ca^{++} mobilization using calcium-sensitive dyes
- In vitro binding assays for a variety of targets including monoamine transporters, cholinergic receptors, GABA-A, and glutamatergic receptors; assessment of neurotransmitter release from brain slices or synaptosome preparations



More Information

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RTI International is one of the world's leading research institutes, dedicated to improving the human condition by turning knowledge into practice. Our staff of more than 2,800 provides research and technical services to governments and businesses in more than 40 countries in the areas of health and pharmaceuticals, education and training, surveys and statistics, advanced technology, international development, economic and social policy, energy and the environment, and laboratory testing and chemical analysis. For more information, visit www.rti.org.

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