

NIH ROADMAP MICAD

Molecular Imaging & Contrast Agent Database



The mission of the MICAD program is to foster research and development in molecular imaging by providing freely accessible online scientific information on *in vivo* molecular imaging and contrast agents to the community working in the field.

MICAD

The MICAD database (<http://micad.nih.gov>) is a freely accessible online source of scientific information on *in vivo* molecular imaging and contrast agents. The MICAD database includes, but is not limited to, agents developed for positron emission tomography (PET), single photon emission computed tomography (SPECT), magnetic resonance imaging (MRI), ultrasound (US), computed tomography (CT), optical imaging, planar radiography, and planar gamma imaging. The MICAD staff focuses on providing critical and timely scientific information to enhance the discovery and availability of molecular imaging and contrast agents. Although many *in vivo* imaging and contrast agents can be identified through an appropriate literature search, they have not been systematically cataloged in a comprehensive, cumulative database that is free and easily accessible to the imaging community. MICAD has been developed as a key component of the National Institutes of Health (NIH) Roadmap (<http://nihroadmap.nih.gov>).

A KEY COMPONENT OF THE NIH ROADMAP

The Molecular Libraries and Imaging (MLI) Program (<http://nihroadmap.nih.gov/molecularlibraries>) is an initiative of the NIH Roadmap that addresses the critical issue of finding new pathways to discovery. MICAD is being developed under the Molecular Imaging Roadmap, a part of the MLI program.

IMPLEMENTATION OF MICAD

The MICAD concept was initially formulated by the MLI Implementation Group (<http://nihroadmap.nih.gov/molecularlibraries/members.asp>). A trans-NIH panel (<http://www.micad.nih.gov>), composed of both NIH staff and extramural experts in molecular imaging, was formed to establish the framework for implementing MICAD. Scientists for MICAD were recruited nationally to implement, develop, promote, and maintain the database with the guidance of the trans-NIH panel. MICAD is jointly developed by the National Center for Biotechnology Information (NCBI) and the National Cancer Institute.

CT
MRI
MRS
Optical
PET
SPECT
US

http://micad.nih.gov

DATABASE STRUCTURE AND PROCESS

The MICAD database is structured as text-based information based on the NLM "books" model, which was developed for the Internet by NCBI in the Entrez cross-database search system. With the use of the NCBI "Bookshelf" structure as the backbone, the information in the MICAD database is organized to present concise, up-to-date information in a printable PDF format. For each agent, MICAD scientists perform a comprehensive biomedical literature search, primarily using the PubMed search engine. The information about the agent is then compiled, analyzed, and translated into a written document in a chapter style. After peer review by one or several scientific reviewers, the chapter is subsequently formatted and edited following standardized processes and in-house style.

KEY COMPONENTS

MICAD is designed to provide concise, up-to-date, key scientific information on molecular imaging and contrast agents in an easy-to-read textual format to the basic and clinical research community. The information is summarized in five major sections: background, synthesis,

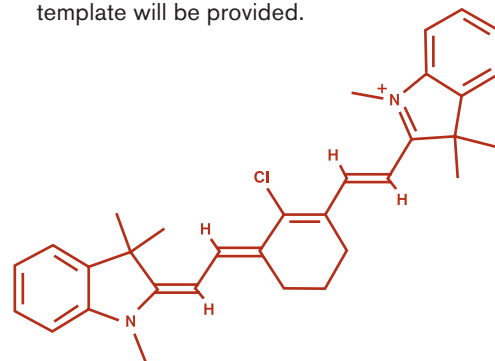
in vitro studies, animal studies (rodents, other non-primate mammals, non-human primates), and human studies. The database is fully indexed and searchable. Literature references are linked to abstracts in MEDLINE/PubMed, and chemical structures are linked to chemical substance abstracts in PubChem.

SUBMISSION OF AGENTS TO MICAD

The MICAD website was officially launched in September 2005. The database is continuously revised and updated. All molecular imaging and contrast agents reported in peer-reviewed literature and for which *in vitro* and/or *in vivo* data are available will eventually be included. MICAD is a dynamic program that actively seeks feedback and recommendations. We are continuing to explore a variety of innovative means to increase the participation of groups and individuals from the imaging community. Submission of agent names/information from the community to the MICAD staff for publication is valued and encouraged (inclusion criteria can be found at the MICAD website).

CONTRIBUTORS FROM THE IMAGING COMMUNITY

A Guest Author Program has been implemented for outside contributors to write and submit chapters to the database for publication. All members of the imaging community are encouraged to consider preparing and submitting chapters of their agents of interest to the MICAD database. The name of the writer(s) submitting the chapter will be included as a guest author in the online entry. Interested members of the imaging community should contact the MICAD staff at micad@ncbi.nlm.nih.gov. The MICAD staff will work with individual authors and provide guidance on chapter preparation. Detailed instructions, style guidelines, and a chapter template will be provided.



The following format is recommended for citation of MICAD chapters:

{Author Name},{Chemical name. Abbreviated name}. In: Molecular Imaging and Contrast Agent Database (MICAD) [database online]. Bethesda (MD): National Library of Medicine (US), NCBI; 2004-{current year}. Available from: <http://micad.nih.gov>.

For more information, please contact:
micad@ncbi.nlm.nih.gov