SUMMARY DESCRIPTION OF THE STRUCTURE AND ACTIVITIES OF THE
CHILEAN NATIONAL COMMITTEE FOR BIOTECHNOLOGY

The Chilean National Committee for Biotechnology (NCB) was constituted in 1983 under the sponsorship of CONICYT *. Since that time this Committee has been working in the study and preparation of scientific research and training activities in the area of biotechnology.

The NCB has also been active in the field of international technical cooperation, serving as the Chilean focal point for regional and international activities of the UNDP/UNESCO/UNIDO Regional Latin American Biotechnology Program, for the Organization of American States initiatives in biotechnology and for the participation of CHILE in the ICGB.

On August 12, 1987, by the official resolution No. 378, the President of CONICYT formally established this Committee and appointed the officers to serve in it.

OBJECTIVES OF THE NCB

- To promote the development of biotechnology in the country;
- To stimulate the development of sciences and technologies related to biotechnology;
- To coordinate the different institutes or laboratories existing in the country in a national network to improve joint efforts and to concentrate resources;
- To promote the elaboration of interdisciplinary and interinstitutional research projects in the main priority areas;
- To stimulate the training of young scientists in areas of special relevance for biotechnology;
- To channel the international and regional contacts in biotechnology;
- To prepare a National Program of Biotechnology.

* CONICYT, created in 1967, is the official institution of the Chilean Government with the responsibility for the promotion of science and technology in the country.
STRUCTURE AND MEMBERSHIP OF THE NATIONAL COMMITTEE

Executive Committee:
President:
Dr. Jorge E. Allende
Department of Biochemistry
Faculty of Medicine
University of Chile
Casilla 70086
Santiago 7, Chile
Tel. and Fax (56 2) 376320 Telex 340258 UNESCO CH

Vice President:
Dr. Ing. Fernando Acevedo
School of Biochemical Engineering
Catholic University of Valparaiso
Casilla 4059
Valparaiso, Chile
Tel. (56 32) 257331 ext. 425 Telex 230389

Directors:
Dr. Lionel Gil - Universidad de Chile
Dr. Rafael Yicina - Pontificia Univ. Católica de Chile
Dr. Manuel Krauskopf - Universidad Austral de Chile

Executive Secretary:
Ms. Elisabeth Wicha
CONICYT
Casilla 297-Y
Santiago, Chile
Tel. (56 2) 744537 Telex 340191 CNCT CH

These working groups are structured as follows:

a. Bacterial Mineral Leaching
Coordinator: Dr. Ricardo Badilla Universidad de Chile
Assistant Coordinator: Dr. Manuel Rodriguez P. Univ. Católica de Chile

Members:
Dr. Fernando Acevedo U. Católica de Valparaiso
Dr. Jorge E. Allende U. de Chile
Dr. Erwin Carrasco INTEC/Chile
Dr. Carlos Jerez U. de Chile
Dr. Alejandro Yenegas P. Univ. Católica de Chile
Dr. Guillermo Ugarte CIMM

b. Biological Nitrogen Fixation
Coordinator: Dr. Horacio Urzúa P. Univ. Católica de Chile
Assistant Coordinator: Dr. Luigi Ciampi U. Austral de Chile

Members:
Dr. Luis Longeri U. de Concepción
Dr. Alfonso Herrera U. de Concepción
Dr. Pedro Bacher INIA
Dr. Manuel Pinto U. de Chile
Dr. Fernando Borie U. de La Frontera
Dr. Oscar Babucho U. Austral de Chile
Sra. Maria Elena Torres INTEC/Chile

c. Plant Tissue Culture
Coordinator: Dr. Miguel Jordán P. Universidad Católica de Chile
Assistant Coordinator: Dr. Carlos Muñoz INIA

Members:
Dra. Claudia Botti U. de Chile
Dr. Luis Mosella BIOPLANT
Dr. Luis Meza-Basso U. Austral de Chile
Dr. Peter Seeman U. Austral de Chile
Ing. Aurelio Villalobos U. Católica de Valparaiso
Ing. Hugo Escobar U. de Tarapacá

The NCB is structured in 9 working groups that include 83 senior scientists, each of whom heads a research group. The Executive Committee of the NCB is composed of the officers and the coordinators of each working group.
d. Anaerobic Degradation of Biological Residues

Coordinator: Dr. Daniel Alkalaj
Assistant Coordinator: Dr. Sebastián Videla
Members:
- M.Sc. Jorge Retamal
- Ing. Quim. M. T. Varnera
- Ing. Quim. Estrella Aspée
- Dr. Pablo Espinosa
- Dr. Alejandro Sáez
- Dr. José Tohé
- Ing. José Arenales
- Ing. José Valderrama

U. Técnica F. Santa María
U. de Chile
U. de Concepción
U. de La Serena
U. Técnica F. Santa María
U. de Chile
U. de Chile
U. del Norte

U. Católica de Valparaíso
U. de Chile
U. de Concepción
U. Católica de Valparaíso

e. Diagnostic Reagents for Human, Animal and Plant Diseases

Coordinator: Dr. Arturo Yudovich
Assistant Coordinator: Dr. Alejandro Venegas
Members:
- Dr. Eugenio Spencer
- Dr. Manuel Krauskopf
- Dr. Luis Burzio
- Dr. José Manuel Ojeda
- Dr. Alido Solari
- Dr. Carlos Arula
- Dr. Gustavo Kalthasser

P. Univ. Católica de Chile
P. Univ. Católica de Chile
U. de Chile
U. Austral de Chile
U. Austral de Chile
U. de Chile
U. Austral de Chile
P. Universidad Católica de Chile

f. Lignocellulosic Agricultural and Forestry Residues

Coordinator: M.Sc. Gmo. Schaefeld
Assistant Coordinator: Dr. Rafael Vichuña
Members:
- Ing. Juan Carlos Gentile
- Ing. Rolando Chamu
- Ing. Sebastián Videla
- Lic. Inés Contreras
- Lic. Jeannette Steiner
- Ing. Andrés Hohberg
- Ing. Eduardo Agosín
- Dr. Raúl Cabrera
- Dr. Guido Pincheira

U. Católica de Valparaíso
U. de la Frontera
U. de la Frontera
U. de Chile
U. de Chile
P. Univ. Católica de Chile
INTA - U. de Chile
INTA - U. de Chile
U. de Chile

U. Católica de Valparaíso
U. Católica de Valparaíso

h. Biotechnology of Industrial Enzymes

Coordinator: Dr. Andrés Illanes
Assistant Coordinator: Dr. Eduardo Agosín
Members:
- Dr. Manuel Young
- Dr. Guido Pincheira
- Dr. Nelson Carvajal
- Dra. Erika Heritz
- Dr. Alido Solari
- Dr. Mario Pérez
- Dr. Gustavo González

U. de Chile
U. de Chile
U. de Concepción
U. de Chile
U. de Concepción
U. de Chile
U. Católica de Valparaíso

i. Biotechnology of Animal Embryo Manipulation

Coordinator: Dr. Jorge Correa
Assistant Coordinator: Dr. Renato Gatica
Members:
- Dr. Marcelo del Campo
- Dr. Carlos del Campo
- Dr. Claudio Haemmann
- Dr. Adolfo Hube
- Dr. Francisco J. Cox

U. Austral de Chile
U. Austral de Chile
U. Austral de Chile
U. Austral de Chile
U. de Concepción

U. Católica de Valparaíso
P. Univ. Católica de Chile

Ing. Marlene Speck
Ing. Pedro Hulse
Ing. Pedro Hulse
Ing. Pedro Hulse

INSTITUTIONAL SUPPORT

The working groups of the NCB include researchers from 12 universities and research institutes. These institutions include the major centers of Chile and give full support to the activities of the NCB.

Estimated Annual Budget of the Research Groups and Projects sponsored by NCB for 1987 was approximately US$ 3,000,000.

MAIN RESEARCH ACTIVITIES

a. Working Group in Bacterial Mineral Leaching

- "Development of biological processes and their industrial application to the bacterial leaching of Chilean copper ores". Funded through UNDP/UNIDO

- The bacterial leaching activities have also received support from the National Fund for Scientific and Technological Research (FONDECYT), OAS and UNESCO.

- As a complement of the group activities, two international workshops have been held in 1985.

b. Working Group in Biological Nitrogen Fixation

- "Biotechnological application of the Biological Nitrogen Fixation in Legumes". Funded by FONDECYT.

c. Working Group in Plant Tissue Culture

- The group has obtained funds from different sources, to carry out projects for In vitro Plant Culture with the purpose of solving problems such as massive propagation of selected materials, elimination of pathogens, improvement of varieties, obtention of hybrids and maintenance of germ plasm banks.

d. Working Group in Anaerobic Degradation of Biological Residues

- The group has obtained financing support for the following projects:
  - "Anaerobic Fermentation using Solar Energy"
  - "Integrated Energy Systems with Biogas"
  - "Water decontamination from Agroindustrial Wastes"
  - "Landfill Studies and Operation"
  - "Industrial and Sewage Waste Studies"
  - "Biogas operated Internal Combustion (Thermophytic) Engines" and for other projects on the utilization of biogas.

e. Working Group in Diagnostic Reagents for Human, Animal and Plant Diseases

- Projects currently in progress include:
  - "Diagnosis of Chagas Disease: Use of RNA Probes"
  - "Diagnosis of Enteric Bacterial or Viral Enteropathogens with Oligonucleotide Probes"
  - "Diagnosis of Erythematous Lupus"
  - "Diagnosis of Plant Viruses"
  - "Salmonella Typhi Outer Membrane Proteins and their use for Diagnosis and a Potential Vaccine"

- Members of the group are also participating in two research projects for the Regional Latin American Biotechnology Programme RLA/UNDP/UNESCO/UNIDO.

f. Working Group of Lignocellulosic Agricultural and Forestry Residues

- Projects currently in progress include:
  - "Biological Processes Applied to the Pulp and paper Industry and to the utilization of Forestry Residues" Funded through UNDP/UNESCO
  - "Ethanol production from Lignocellulosic Materials" Regional Project carried out under the sponsorship of CYTED-D
  - The lignocellulosic activities have also received funds from different national sources (as FONDECYT).

g. Working Group in Massive Culture of Microalgae
  - Projects currently in progress include:
    - "Massive Culture of Microalgae Dunaliella and Spirulina". Funded through FONDECYT, OAS and UNDP.

h. Working Group in Biotechnology of Industrial Enzymes
  - Projects currently in progress include:
    - "Enzymatic degradation of Agroindustrial Residues"
    - "Production of Microbial Lactase and its utilization in the Hydrolysis of Milk and Whey"
  - Both projects are funded by the Regional Latin American Biotechnology Programme (RLA/UNDP/UNESCO/UNIDO).
  - Other projects are being funded by FONDECYT.

i. Working Group in Biotechnology of Animal Embryo Manipulation
  - The group has obtained funds from J.I.C.A. for projects and international courses.

TRAINING ACTIVITIES

Chilean institutions and biotechnology research groups are organizing a number of short training courses designed to teach young Latin American researchers modern techniques in biotechnology such as:

- International Course in Techniques of Molecular Biology. University of Chile, Santiago (January 1988)
- Latin American Course in Biotechnology. Catholic University of Valparaiso, Valparaiso (July 1988)
- Recombinant DNA Techniques. Pontifical Catholic University of Chile, Santiago (November 1988)

In addition there are regular Masters and Doctoral level courses in Biochemistry, Cell Biology, Biotechnology, Genetics, Microbiology.

PARTICIPATION IN INTERNATIONAL PROGRAMS

- UNDP/UNESCO/UNIDO Regional Latin American Biotechnology Programme
- Organization of American States. Regional Program in Biotechnology
- CYTED-D of the Spanish Government - Programs in Biotechnology and Biocompost
- COBIOTECH - Committee on the International Council of Scientific Unions
- ICGEB - International Centre for Genetic Engineering and Biotechnology

NEW ACTIVITIES

The Committee is presently studying the creation of working groups in Marine Biotechnology and Food Biotechnology. In addition the Committee will organize a special encounter with the Industrial Sector.