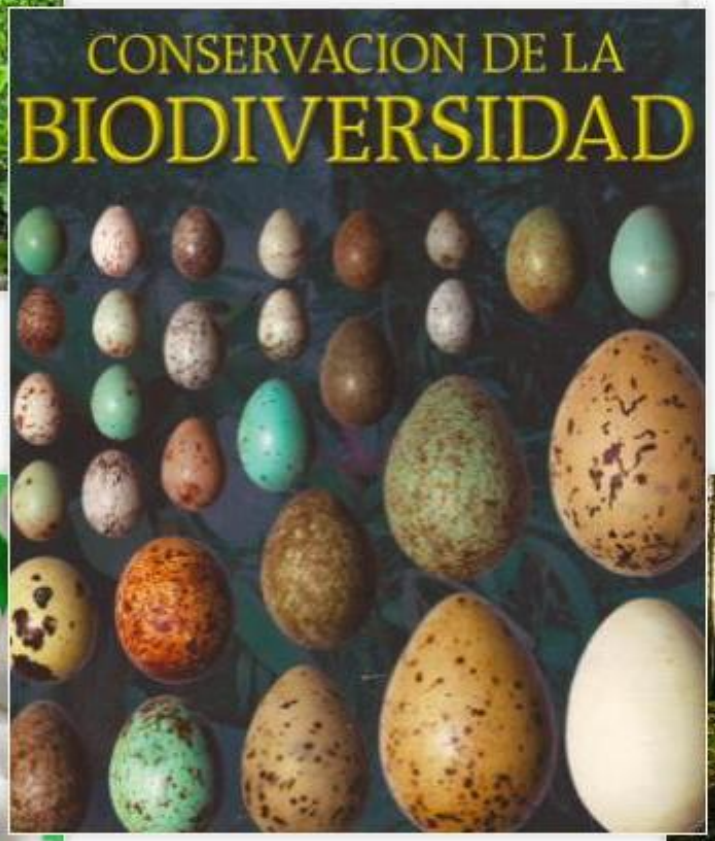
EXPLORING BIODIVERSITY FOR HEALTH



EXPLORING BIODIVERSITY FOR HEALTH

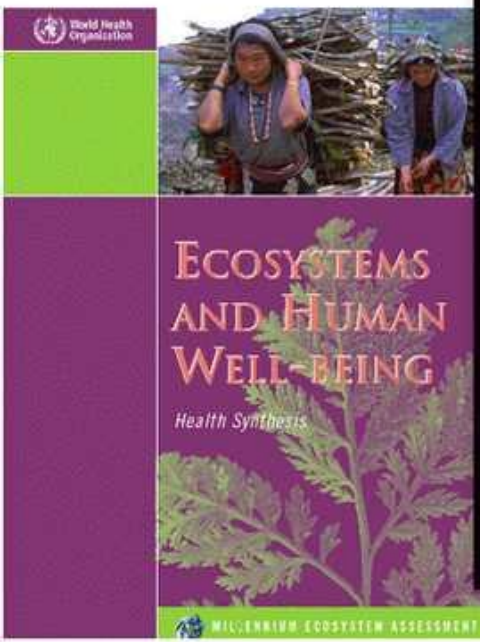
NORTE

Países Pobres en Biodiversidad

Informe Millennium 2000
WHO/UN/BM

SUR

Países Ricos en Biodiversidad



Exploración de la Biodiversidad

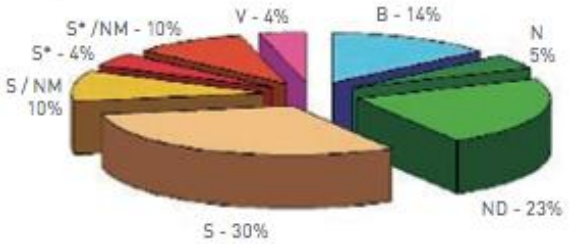
Obtención de medicamentos

Los productos naturales han sido consistentemente la fuente más productiva de medicamentos

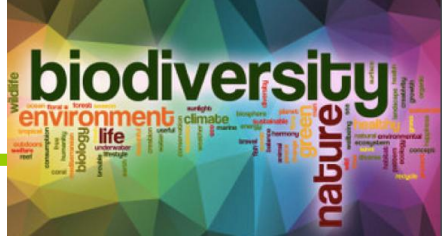
Entre 1983 y 1997

- el 43% de los antibioticos y antitumorales
- el 39% de todos los medicamentos aprobados fueron derivados de productos naturales.

All new chemical entities, 01/1981-06/2006, by source (N) 1184).



B ..... Biological
N ..... Natural product
ND .... Derived from a natural product and is usually a semisysnthetic modification
S ..... Totally synthetic drug, often found by random screening, modification of an existing agent
S* ..... Made by total synthesis, but the pharmacophore is/ was from a natural product
V ..... Vaccine
NM .... Natural product mimic



NORTE

Países Ricos en Tecnología

2500 medicamentos derivados de la biodiversidad (100 años)

Medicamentos de la biodiversidad

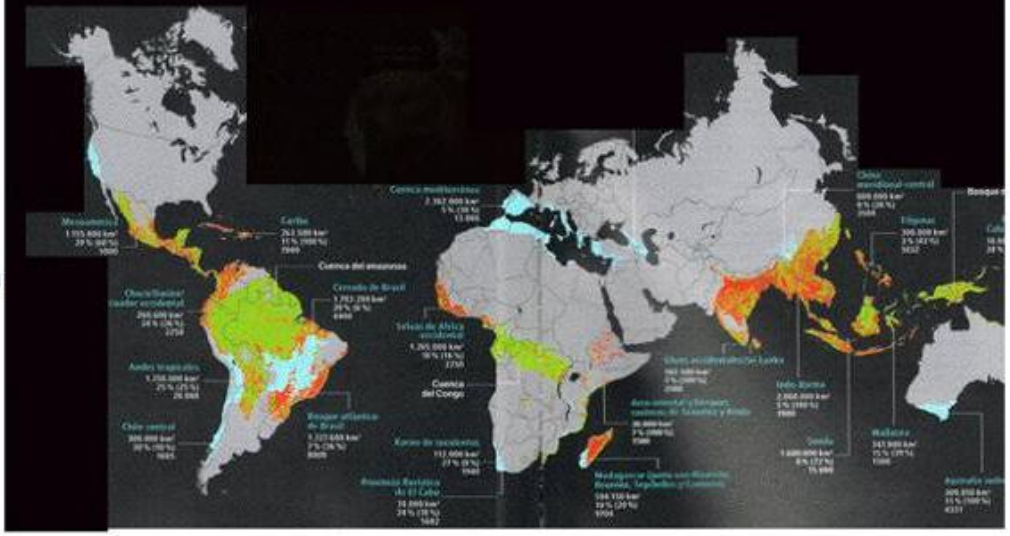
PARADIGMA NORTE/SUR

SUR

Países Ricos en Biodiversidad

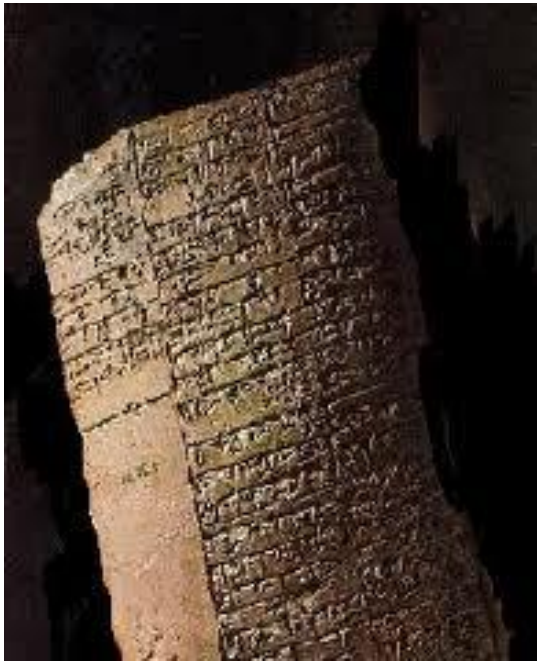
Ningún medicamento

10 Trillones USD: 100 PIB mundial



PRIMER NEGOCIO MUNDIAL

- 26 empresas top 100
- 15 US y 11 EU
- NINGUNA DEL SUR
- 3,5 Trillones de USD capitalización
- 15 millones de puestos de trabajo



Exploración de la Biodiversidad

Tablillas de Nippur 4.000 a.C.

Observación de animales

Cultura popular

Revelaciones místicas

Chamanes, Brujos, Curanderos

Extractos, Lociones, Elixires

Efecto Terapéutico

PLACEBO

REAL

Exploración de la Biodiversidad

Hasta 1800

EXPLORING BIODIVERSITY FOR HEALTH

Cultura popular

Casualidad

Laboratorios Farmacéuticos

Exploración de la Biodiversidad
Hasta 1980

Extractos Plantas

Principios Activos

Síntesis química

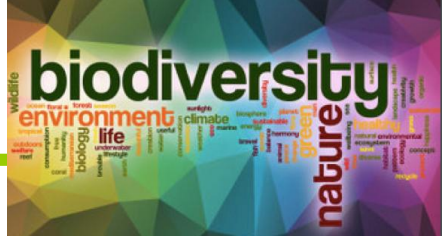
Me-too

Principios Activos Sintéticos

Efecto Terapéutico

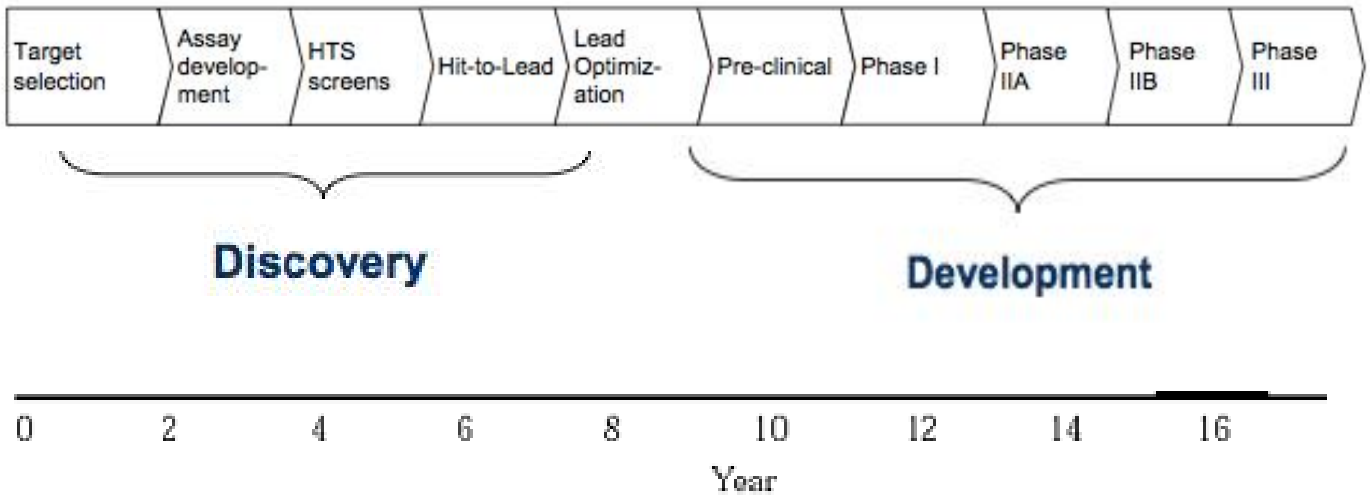
Experimentos animales in vivo

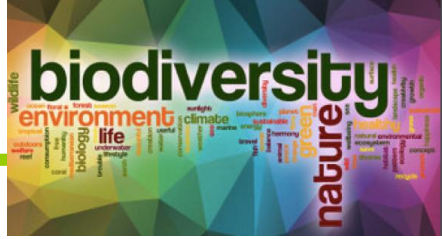
REAL



Drug Discovery
Desarrollo de nuevos medicamentos

- Muy lento (15 años)
- Muy complicado (Fases)
- Muy costoso ($ 100 M)
- Muchos pacientes (1000)





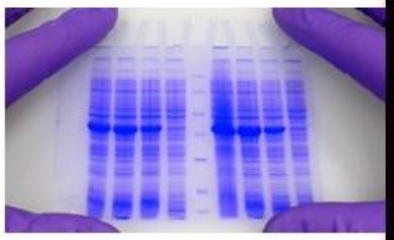
REVOLUCION GENOMICA

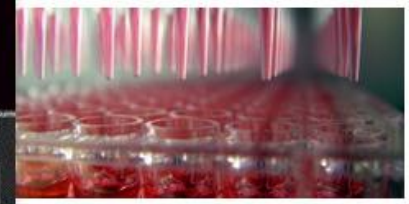
OGM
Proteínas recombinantes
Recursos Genéticos

Exploración de la Biodiversidad
Revolución Biotecnológica

REVOLUCION HTS

Screening masivo farmacológico

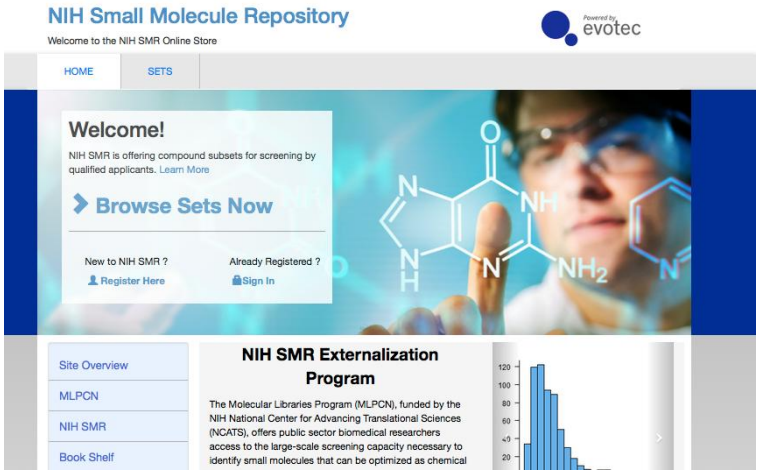





biodiversity
environment
life
nature
climate
biology
green
wildlife

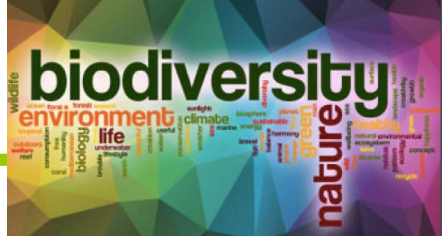
2010


EXPLORING BIODIVERSITY
The Search for New Medicines


NIH Small Molecule Repository
Welcome to the NIH SMR Online Store
Powered by evotec
HOME
SETS
Welcome!
NIH SMR is offering compound subsets for screening by qualified applicants. Learn More
Browse Sets Now
New to NIH SMR ?
Register Here
Already Registered ?
Sign In
Site Overview
MLPCN
NIH SMR
Book Shelf
NIH SMR Externalization Program
The Molecular Libraries Program (MLPCN), funded by the NIH National Center for Advancing Translational Sciences (NCATS), offers public sector biomedical researchers access to the large-scale screening capacity necessary to identify small molecules that can be optimized as chemical


Exploring Biodiversity in the Philippines
By RICH MOOI MAY 25, 2011 5:52 PM

EXPLORING BIODIVERSITY FOR HEALTH



NIH Fogarty International Center
Advancing Science for Global Health

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- Chronic Diseases Research Training
- eCapacity
- Ecology and Evolution of Infectious Diseases (EEID)
- Emerging Global Leader
- Emerging Epidemic Virus Research Training (Guinea, Liberia, Sierra Leone)
- Environmental and Occup Health (ITREOH)
- Framework Innovations
- Fulbright-Fogarty Fellows and Scholars
- GEOHealth
- Global Health Fellows and Scholars

International Cooperative Biodiversity Groups (ICBG)

Status: Closed

Announcement(s)

- Expired announcement: Limited Competition: International Cooperative Biodiversity Groups (U19) (RFA-TW-13-001)

Eligibility

- Individuals with expertise in any area relevant to the RFA from U.S. institutions of higher education or other U.S. nonprofit institutions are invited to apply.
- Interdisciplinary teams should be assembled and must include collaborators from institutions in biodiverse LMICs. See the RFA for more information on these partnerships.

Program Overview

NIH and the National Science Foundation (NSF) support to **International Cooperative Biodiversity Groups (ICBG)** program to address the interdependence of biodiversity exploration for potential applications in health, with investments in research capacity that support sustainable use of these resources, the knowledge to conserve them, and equitable partnership frameworks among research organizations in the U.S. and low- and middle-income-countries (LMICs). LMICs are defined as low or middle income countries in the World Bank list of economies.

Biodiversity project receives Nagoya funding

An NIH-supported biodiversity project in Panama will receive $1 million as the first award under the Nagoya Protocol Implementation Fund

Learn More

Related News

- Grantee news: Foes can become friends on the coral reef
Georgia Tech news,

ICBG

- FAS (NSF y el NIH-Fogarty International Center
- 7 subproyectos en 11 paises (regiones tropicales)
- Proyectos de 400.000 USD-700.000 USD, 5 años
- Control total del conocimiento generado, en custodia en Universidades de los USA
- Las muestras son entregadas a empresas privadas biofarmaceuticas para que realicen los estudios

The International Cooperative Biodiversity Groups (ICBG) Program

A U.S. Government funded effort to promote equitable sharing of biodiversity benefits in the context of integrated research and development toward drug discovery, biodiversity conservation and economic development.

Figure 2. Agreement Structure - Suriname ICBG

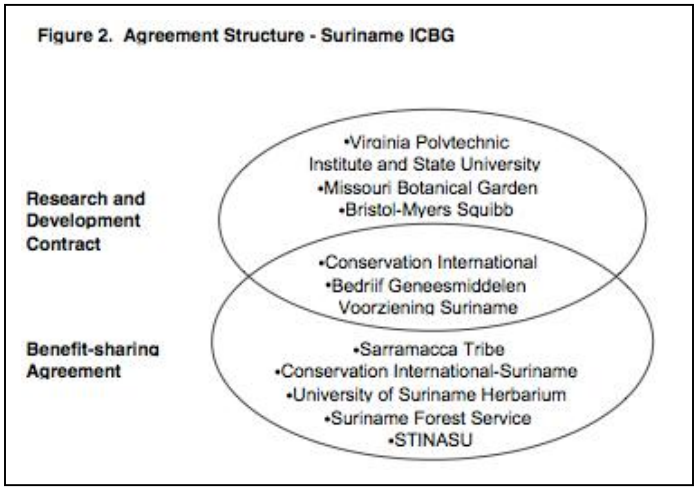
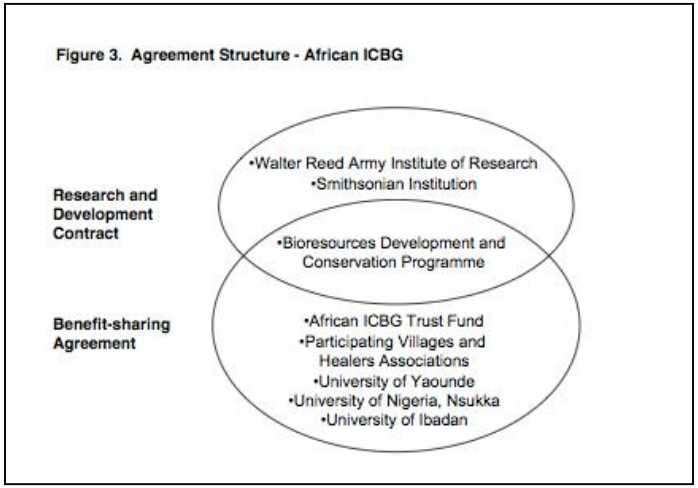


Figure 3. Agreement Structure - African ICBG



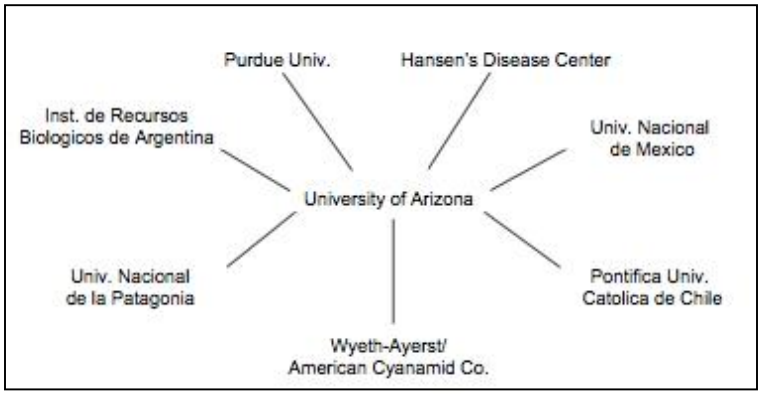
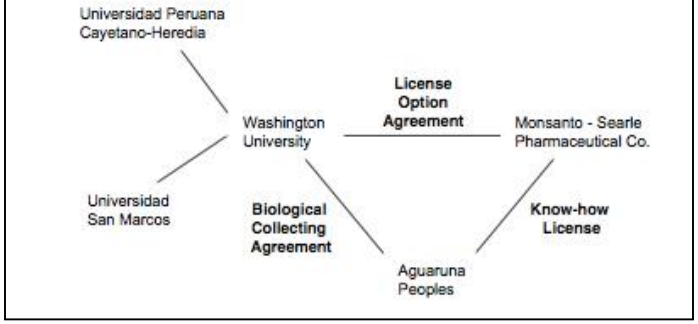


Figure 4. Agreement Structure - Peru ICBG



Box 1. **Types of Benefits to Source Country Partners from Bioprospecting Agreements**

Royalties - A percentage of earnings from commercial sales by the licensing partner may be agreed upon in the initial agreement, or the agreement can specify a range and require the parties to negotiate the final rate on a case by case basis. Some issues to consider in royalty structures include: a) relative contribution of partners to invention and development; b) information provided with samples; c) novelty or rarity of sample organisms.

Advance payments - Access fees may take the form of lump-sum or milestone payments, per sample fees, payment for re-supply of samples, or in-kind contributions of equipment, training, medicines, etc.. Advance payments are valuable for establishing trust funds that can provide immediate benefits to stakeholders.

Equipment, training and infrastructure - Commercial partners or non-profit funding organisations may provide resources to help build the capacity of source country partners to execute current or future needs for bioprospecting research, medical care, biodiversity management, etc..

Priority research areas - Agreements can require that locally important, but understudied, diseases and indigenous therapies will be investigated by commercial and other scientific partners. Additionally, they can focus specimen collections and identification on geographical areas or biological groups that are high priorities for conservation needs.

5 años de duración

11 regiones con 15 países (organismos)

10.000 muestras cada país

30 subproductos por muestra

50 resintesis por subproducto

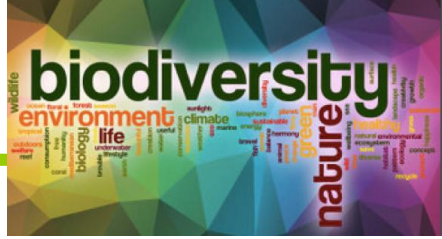
TOTAL LIBRERIA : 225.000.000 compuestos/5 años

Total pagos : 500.000 USD por organismo/5 años

Total por compuesto : 30 USD

Screening por día: 125.000 compuestos

EXPLORING BIODIVERSITY FOR HEALTH



SEVENTH FRAMEWORK PROGRAMME

VENOMICS, A European project supported through the Seventh Framework Program (FP7 HEALTH), 2011-2015

2011

2 Francesas

1 Alemana

2 Inglesas

2 Españolas

1 Holandesa

22 EL PAÍS — Domingo 12 de julio de 2015

CIENCIA Y TECNOLOGÍA

Un consorcio extrae 5.700 proteínas de ponzoñas de 203 animales para fabricar medicamentos contra el dolor, la diabetes o el cáncer

Se busca veneno que cure

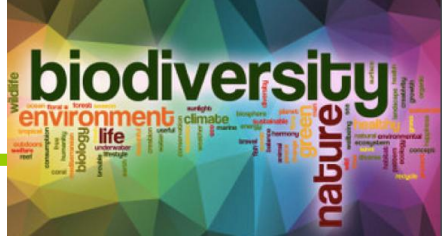
No es fácil dar con nuevas moléculas para convertir en fármacos

Las muestras proceden de las selvas de la Guayana y la Polinesia francesas

JAIME PRATS. Valencia

Una de las tarántulas de las que se ha extraído veneno.

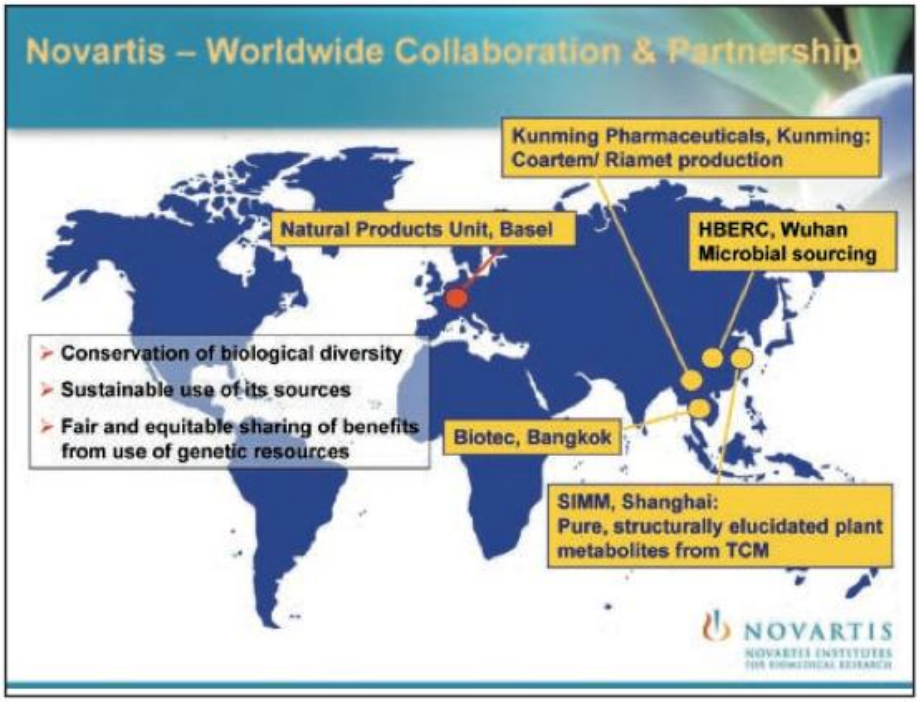
Un sofisticado cóctel



efpia
European Federation of Pharmaceutical Industries and Associations

GOOD BUSINESS & PRACTICE
CASE STUDIES ON BIODIVERSITY

EXPLORING BIODIVERSITY FOR HEALTH



4.3 | CASE STUDY 1
ASTRAZENECA AND GRIFFITH UNIVERSITY, BRISBANE, QUEENSLAND, AUSTRALIA

AstraZeneca is one of the world's leading pharmaceutical companies with over 12,000 people working on the Research and Development of new medicines for treating human health. AstraZeneca scientists investigate new treatments for cancer, infection, pain and cardiovascular, respiratory, inflammation, gastro-intestinal and central nervous system diseases as well as others.

Griffith University, Brisbane and the Queensland State Government entered into an agreement with AstraZeneca in 1993. This set up a Natural Product Discovery laboratory in Brisbane; specifically located to take advantage of the intellectual strength in Brisbane and the proximity to the unique natural environment of Queensland - the rainforest and reef. Australia is one of the twelve mega-diverse countries and is a party to the Convention on Biodiversity.

The agreement was set up in compliance with the Biodiversity laws of the State of Queensland and the Australian Federal Government[18]. These laws encourage the Conservation of Biodiversity and the sustainable use of natural products, and they further encourage Access and Benefit Sharing. Some general principles include:

- Give effect to CBD & other international obligations
- Facilitate ecologically sustainable access and use
- Enable fair and equitable sharing of benefits
- Ensure use of traditional knowledge undertaken with cooperation and approval of holders of such knowledge
- Enhance biodiversity conservation and value
- Facilitate continued non-commercial research
- Integrated into biotechnological development policies and strategies

Under the agreement, Griffith University retains intellectual property rights with AstraZeneca having the active ingredient(s) and identify the chemical structure(s).

The active ingredient is usually not suitable to develop as a medicine but is a lead for creating different chemical structures for extensive pharmacological investigation.

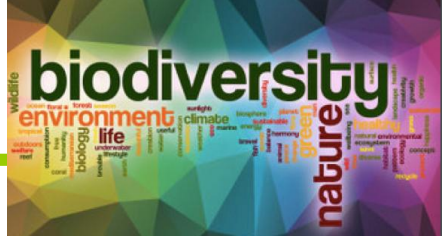
Since the collaboration commenced, the Natural Product Discovery laboratory has tested over 35,000 specimens from plant and marine environments. These specimens have been collected via contracts with the Queensland Herbarium and with the Queensland Museum as well as from other sources.

Benefits for Griffith University, Queensland and Australia

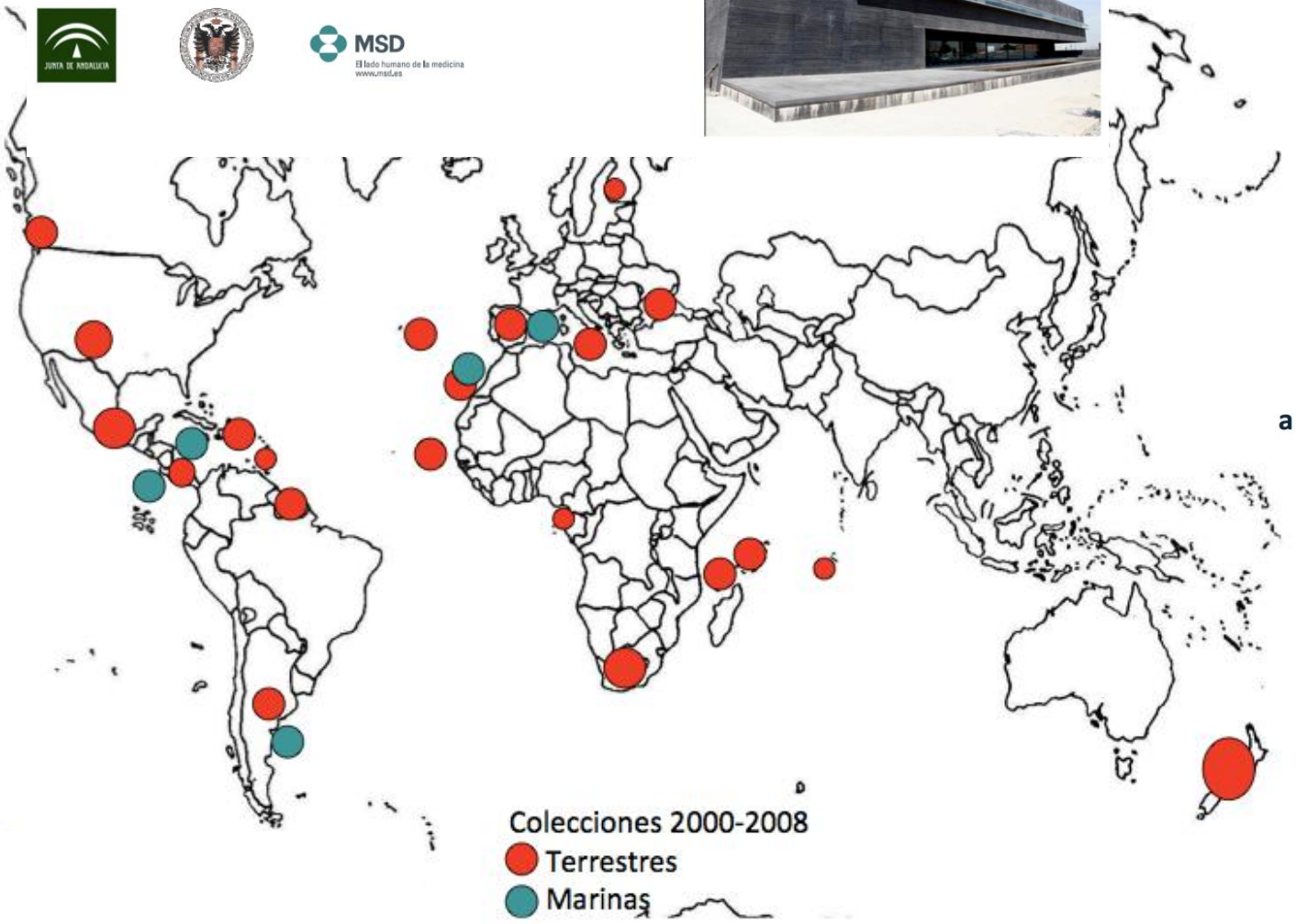
The agreement and associated funding has established a world-leading research facility in the area of natural product discovery. This facility has lured several leading Australian researchers back to their homeland.

Natural Product Research Institute, Brisbane.

EXPLORING BIODIVERSITY FOR HEALTH



Centro de Excelencia en Investigación de Medicamentos Innovadores en Andalucía



MSD

Medicamentos Innovadores a partir de Productos Naturales de origen microbiano

EXPLORING BIODIVERSITY FOR HEALTH

EXPLORING BIODIVERSITY FOR HEALTH

MMV Discovery Portfolio 2008 – Fourth Quarter

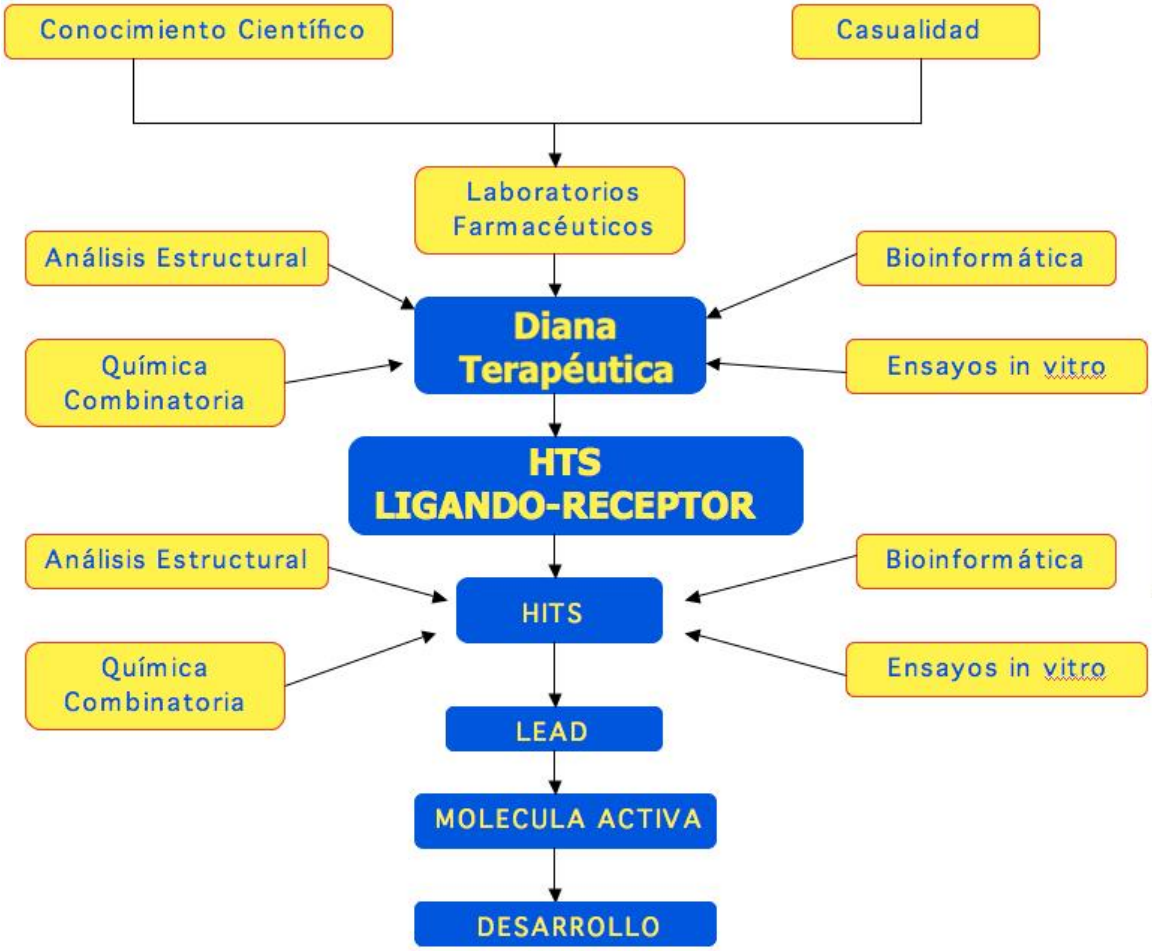
LEAD GENERATION

- HTS Workup, *GSK*
- HTS Workup, *Broad/Genzyme*
- Natural Products, *Broad/Genzyme*
- GNF Screening, *Novartis*
- Liver Assays, *Novartis*
- Natural Products, *Eskitis*
- Gametocyte Screen, *Eskitis*
- Natural Products Screen, *Eskitis/DPI*
- SF Library Screen, *Eskitis*
- Liver Assays, *SBRI*
- Kinase Screen, *Dundee*
- Natural Products, *USF*
- DHODH, *GSK*
- HSP90, *Broad/Genzyme*
- DHODH, *Broad/Genzyme*
- HDAC, *Broad/Genzyme*
- Kinase Hits, *Novartis*
- Heterocyclic Hit-to-Lead, *TDR/Pharmacopoeia*
- Immucillins, *Albert Einstein*
- Quinolones, *USF*

LEAD OPTIMIZATION

- THIQ, *GSK*
- Aminoindoles, *Broad/Genzyme*
- Whole Cell Leads, *Novartis*
- DHODH, *USTW/UW/Monash*
- Falcipains, *GSK*
- IPT Pyridones, *GSK*
- Macrolides, *GSK*
- DHFR, *BIOTEC/Monash/LSHTM*
- Ozonides, *Monash/UNMC/STI*
- KAC776, *Novartis*

EXPLORING BIODIVERSITY FOR HEALTH

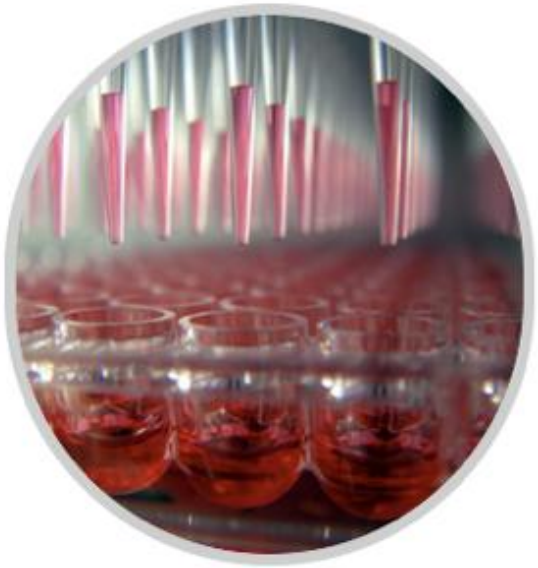


Exploración de la Biodiversidad

Revolución

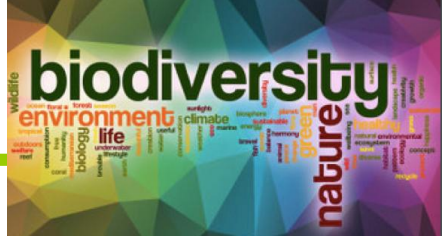
High-Throughput Screening

High Throughtput Screening Drug Discovery Technology

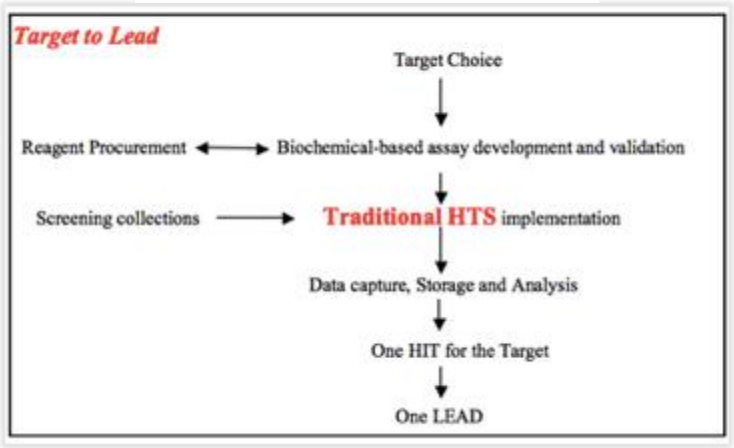


In the 20 years since High Throughput Screening Drug Discovery Technology (HTS-DD) has been implemented it has become universal within the pharmaceutical and biotech industries as the major approach to identify novel prototype molecules for new targets.

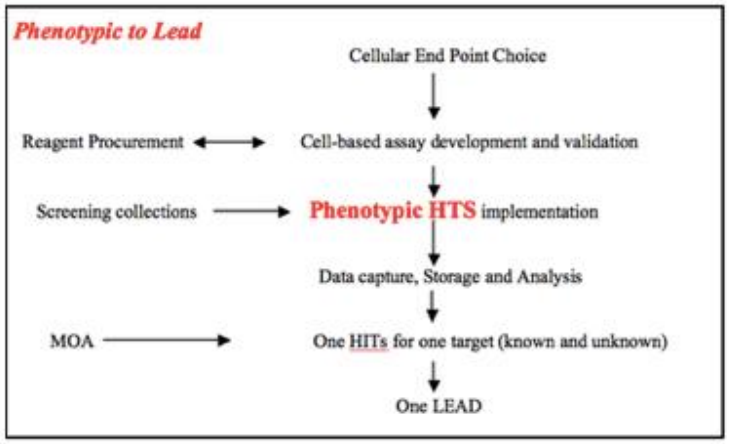
It has also spawned a billion dollar industry that supports the increasing demands for speed, capacity, efficiency and cost effective screening of vast libraries of compounds.

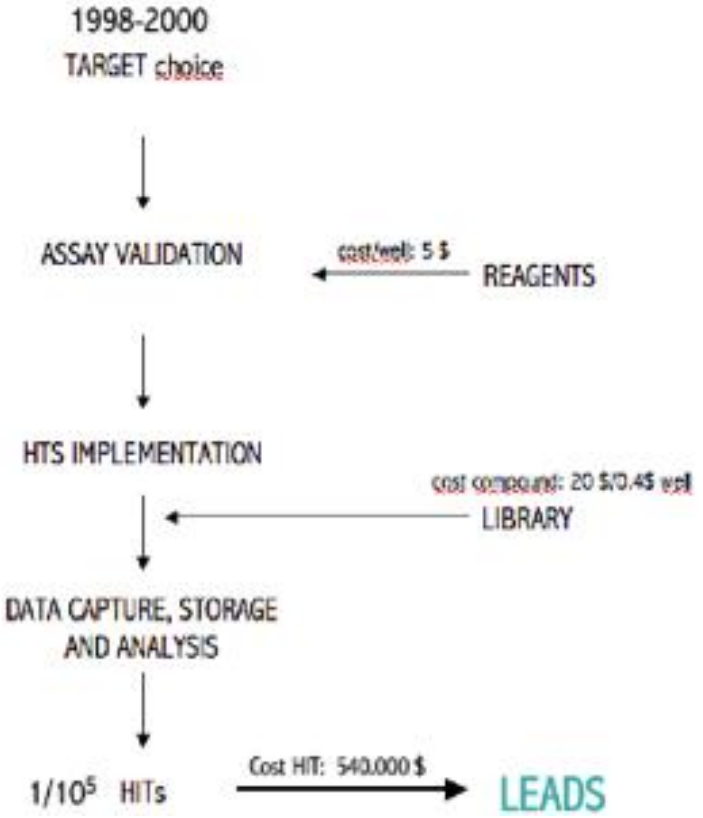


Traditional HTS



Phenotypic HTS





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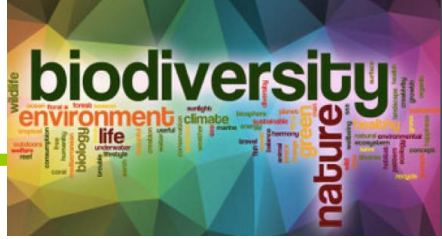


Facility Name	Institution
Biomolecular Screening Facility	EPFL, Ecole Polytechnique Fédérale de Lausanne
Broad Institute Chemical Biology Platform	Broad Institute Chemical Biology Platform
HT-Technology Development Studio	Max Planck Institute of Molecular Cell Biology and Genetics (MPI-CBG)
Vanderbilt Screening Center for GPCRs, Ion Channels, and Transporters	VANDERBILT UNIVERSITY
University of Cincinnati HTS	University of Cincinnati
ECCR@NCSU	North Carolina State University
High Throughput and High Content Screening Core Facility	University of Colorado Anschutz Medical Campus
Berkeley Screening Center	University of California, Berkeley
Michigan High Throughput Screening Center	Community College
Discovery	Boston University
Center for Predictive Medicine HT Biology Core Facility	University of Louisville
High-Throughput Screening Resource Center	The Rockefeller University
Yale Small Molecule Discovery Center	Yale University
Institute for Tuberculosis Research	University of Illinois at Chicago
High Content Screening Core Facility	University of Miami Miller School of Medicine
Experimental Therapeutics Programme, HTS	Spanish National Cancer Research Centre (CNIO)
Center for Bio-Active Molecules Screening (Centre de Criblage pour Molecules Bio-Actives (CMBA))	Commissariat à l'Energie atomique, departement des Sciences du Vivant (CEA/DSV) CNRS
Genomics Resource - High-Throughput Screening Facility	Fred Hutchinson Cancer Research Center
Drug Screening Resource	University of Utah
Chemical Genetics Screening Core	Washington University

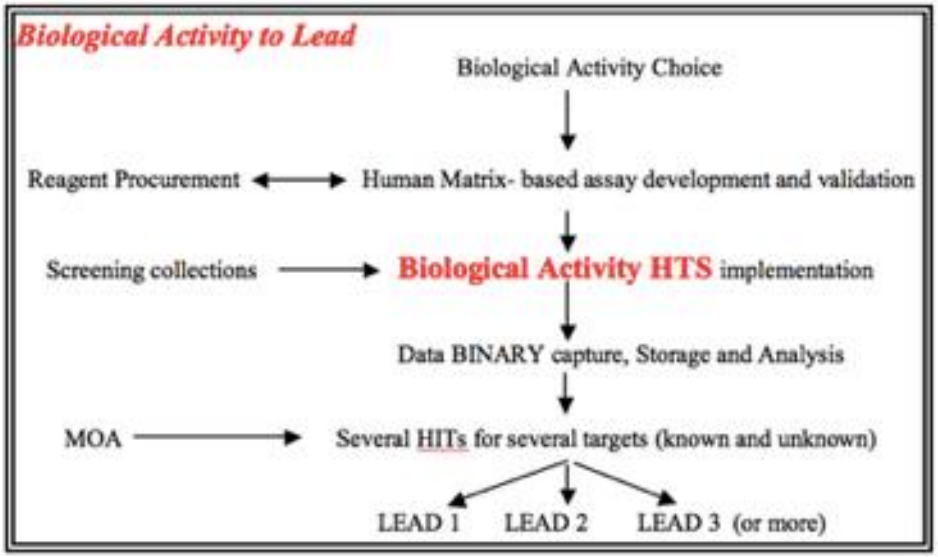
> 150 Centros de Screening en el mundo

125 en los USA

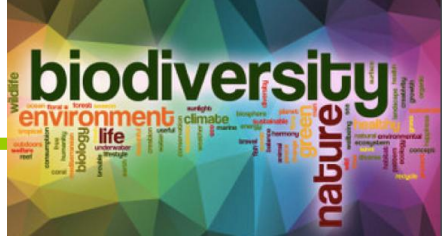
Coste medio : $ USD 300 M

Biological Activity High Throughput Screening Drug Discovery Technology

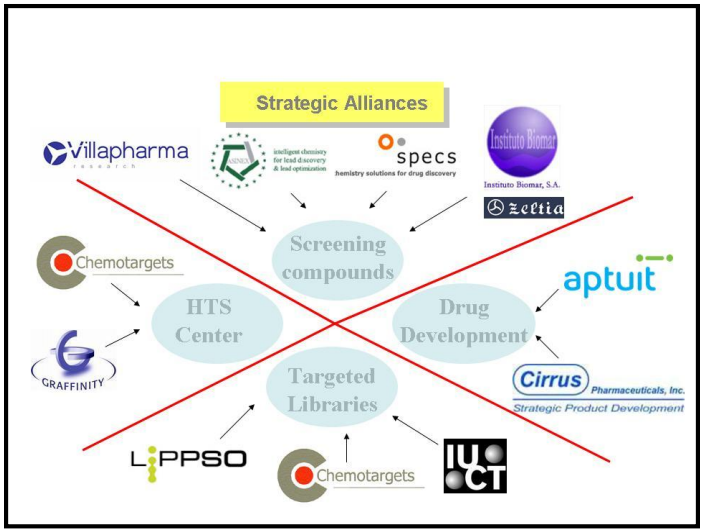
2006



Biological Activity HTS-DD enables the direct assessment of compound action simultaneously on a several and specific pathways in a specific human matrix, either than a defined target or a defined end point.



A partir de 48.500 productos (small molecules, péptidos, extractos de plantas) procedentes de librerías de organismos públicos y privados :



ASINEX (Rusia)
SPECS (Holanda)
MAGELLAN (USA)
BIOMAR-ZELTIA (España)
LIPPSO (España)
UIC (España)
Universidad de Sofia (Bulgaria)
Universidad de Plovdiv (Bulgaria)
BAS (Academia Búlgara de Ciencias)

Se descubrieron 218 nuevos HITS de areas de la Trombosis, hemostasia, oxidación y cáncer. Rindiendo 13 leads

Competitive advantages comparison

HTS METHOD	BASED IN	TYPE OF INTERACTION	CAPACITY TO DISCOVER NEW TARGETS	CORRELATION in vivo conditions	PROVIDES DATA TO DRIVE CLINICAL PHASES	MOA	TYPE OF RESULT	IT PERSONNEL REQUIRED	HIGH INVESTEMENT IN HTS FACILITIES	COST (reagent/ well)	EFFICIENCY (HITS per 100.000 compounds)	COST PER NEW HIT
Traditional or Biochemical (ligand binding)	Known Target	Artificial environment (buffers)	NO	NO	NO	Known	Numeric	YES (large datasets)	YES HTS with nanotech	$1.00 ($0.30 nanotech)	1 HIT	$540.000 ($40.000 nanotech)
Phenotypic	Known cellular pathway	Artificial environment (cell culture)	NO/YES	NO/YES	NO	Un known	Numeric and/or Binary	NO/YES	YES HTS with nanotech	$2.00 ($0.30 nanotech)	1 HIT	$540.000 ($40.000 nanotech)
Biological Activity	**Known activity**	**Natural environment (blood, plasma, LCR)**	**YES**	**YES**	**YES**	**Un known**	**Binary**	**NO**	**NO HTS w/o nanotech**	**$0.05**	**450 HITs**	**$100.00**

EXPLORING BIODIVERSITY FOR HEALTH

Entrevista con el Dr. Javier Pedreño, Presidente de Thrombotargets Group

Revolucionaria tecnología para la industria farmacéutica

La facturación prevista para el primer fármaco supera los 1.500 millones de euros

Thrombotargets Group unió a varios científicos españoles con experiencia en investigación, docencia, y trabajo en laboratorios farmacéuticos para desarrollar una biotecnología única en el mundo: *Bioplataformas*.

Esta tecnología permite la identificación de nuevos candidatos a fármacos en áreas terapéuticas tradicionalmente privadas de nuevos medicamentos, como la hemostasia, trombosis, aterosclerosis... Mediante el uso de esta tecnología Thrombotargets ha obtenido, en tan sólo dos años de existencia, una colección de candidatos a nuevos fármacos en desarrollo (*pipeline*) innovadores y competitivos. Thrombotargets ha financiado su crecimiento con capital de inversores particulares (*business angels*), con el objetivo de priorizar la creación de valor en la etapa inicial de la compañía. El Dr. Javier Pedreño, Presidente de Thrombotargets Group, explica las novedades que aporta la tecnología patentada por la empresa y los principios sobre los que crece este proyecto innovador. Pag 7

El Dr. Javier Pedreño, de pie en el centro de la imagen, Presidente de Thrombotargets Group, junto a Juan Ramón Rodríguez, a la derecha, director de I+D

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

Food and Drug Administration
5600 Fishers Lane
Rockville, MD 20857

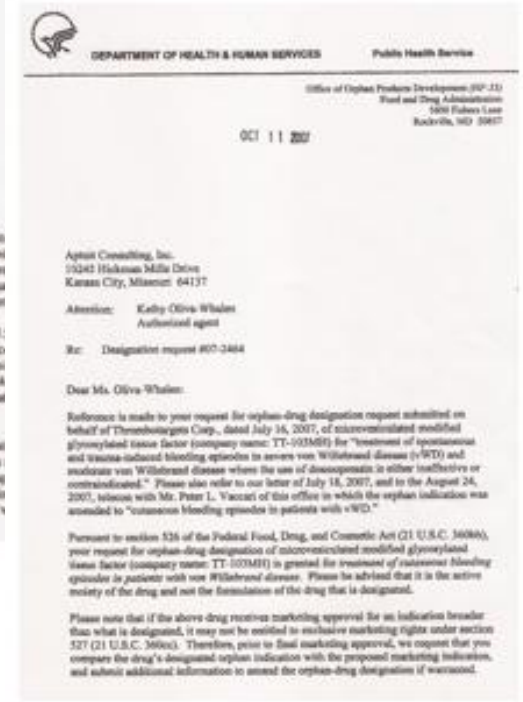
January 29, 2007

Apsuit Consulting, Inc.
10245 Hickman Mills Drive
Kansas City, Missouri 64137

Attention: Kathy Olivia-Whalen
Principal Consultant

Re: Designation request # 06-2347

Dear Ms. Olivia-Whalen:



DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

Food and Drug Administration
5600 Fishers Lane
Rockville, MD 20857

OCT 11 2007

Apsuit Consulting, Inc.
10245 Hickman Mills Drive
Kansas City, Missouri 64137

Attention: Kathy Olivia-Whalen
Authorized agent

Re: Designation request #07-2464

Dear Ms. Olivia-Whalen:

Reference is made to your request for orphan-drug designation request submitted on behalf of Thrombotargets Corp., dated July 16, 2007, of microencisulated modified glycosylated tissue factor (company name: TT-103MH) for "treatment of spontaneous and trauma-induced bleeding episodes in severe von Willebrand disease (vWD) and moderate von Willebrand disease where the use of desmopressin is either ineffective or contraindicated." Please also refer to our letter of July 18, 2007, and to the August 24, 2007, telecon with Mr. Peter L. Vaccari of this office in which the orphan indication was amended to "cutaneous bleeding episodes in patients with vWD."

Pursuant to section 526 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 360bb), your request for orphan-drug designation of microencisulated modified glycosylated tissue factor (company name: TT-103MH) is granted for *treatment of cutaneous bleeding episodes in patients with von Willebrand disease*. Please be advised that it is the active moiety of the drug and not the formulation of the drug that is designated.

Please note that if the above drug receives marketing approval for an indication broader than what is designated, it may not be entitled to exclusive marketing rights under section 527 (21 U.S.C. 360cc). Therefore, prior to final marketing approval, we request that you compare the drug's designated orphan indication with the proposed marketing indication, and submit additional information to amend the orphan-drug designations if warranted.

Investigació tecnològica

PER FRANCESC XAVIER GIL

ASALS, JOSEP CASANOVAS, JOSEP MIQUEL PIQUÉ, MITAT ATORGAR EL PREMI NOLÒGICA A

Thrombotargets Europe, perquè ha creat una plataforma tecnològica que permet el descobriment de nous fàrmacs en l'àmbit cardiovascular, que aporten solucions a l'hemofília i altres malalties hemorràgiques. El Jurat vol destacar que, des d'una recerca científica d'excel·lència i un conjunt de patents internacionals, s'ha creat una empresa a Barcelona que atén una necessitat sanitària mundial.

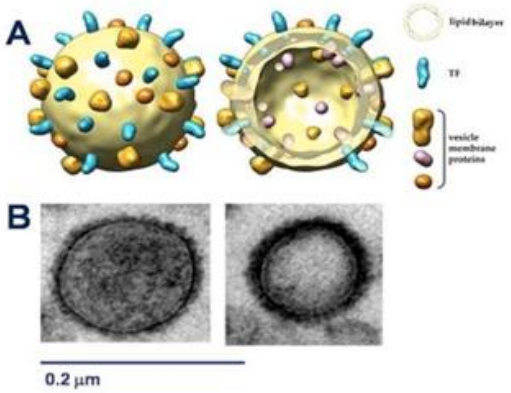
El Jurat atorga una menció especial al **Grup de Recerca en Òptica Aplicada i Processament d'Imatge de la UPC, dirigit per la Dra. Maria S. Millán**, pel desenvolupament d'un sistema de seguretat basat en la identificació òptica de senyals biomètrics i multifactorials.

High-Throughput Screening Drug Discovery

Obtención de medicamentos

TT-173

Primera proteína humana recombinante de Factor Tisular Activo Geneticamente Modificado



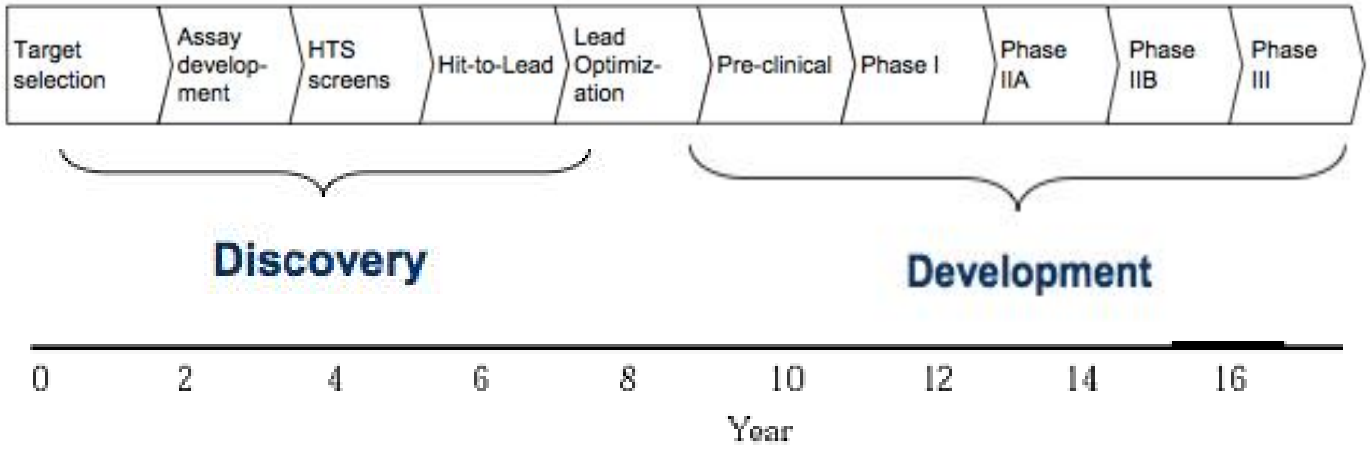
25 M USD investment (public and private)

10 years from inception and 5 after product patent

Preclinical, PhI and PhIIa finished

Protocol of PhIIb/III approved

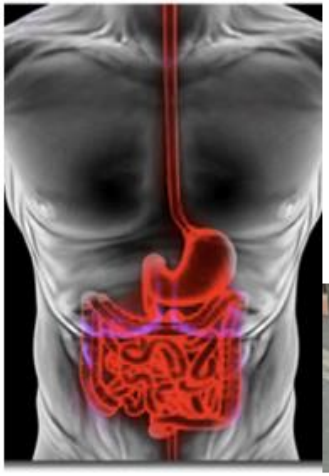
→ Out-licensing of TT-173 (2015-2016)



40 x return in 10 years for private investors

TT-173

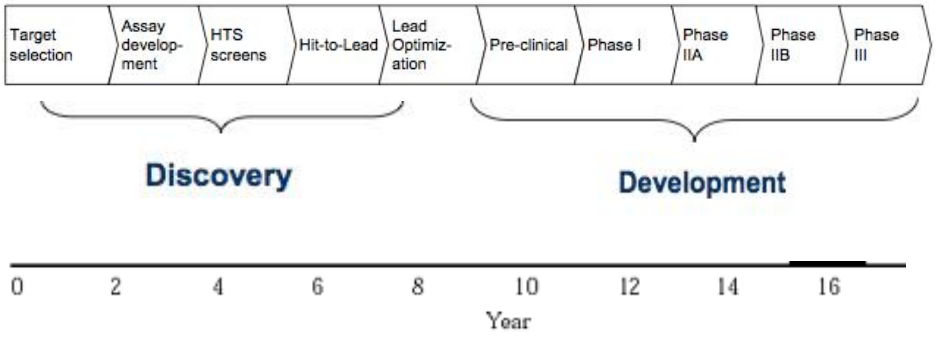
Antihemorrágico tópico universal

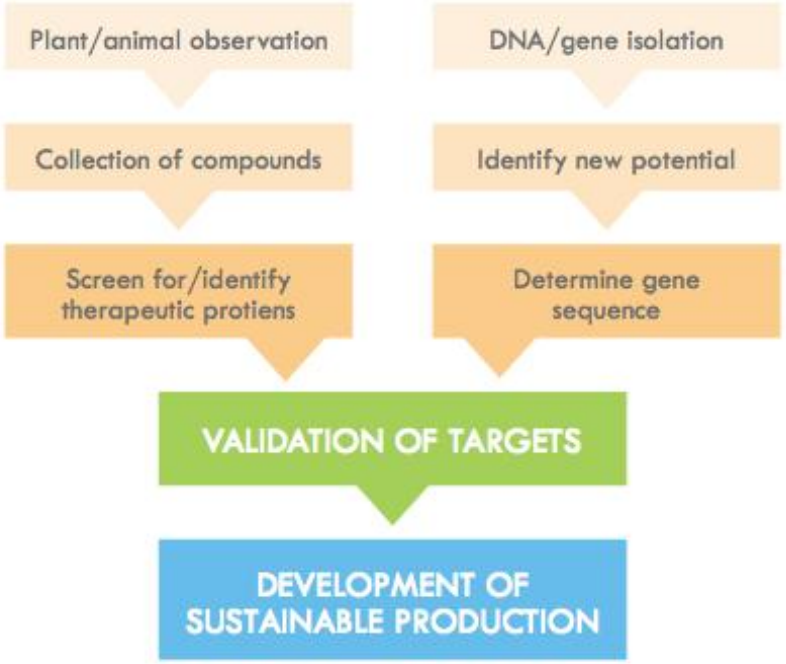


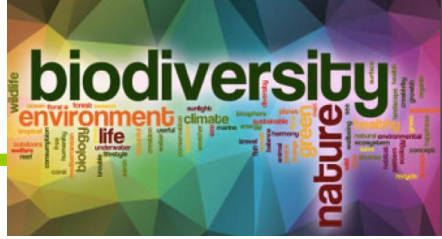
Reto Tecnológico del Siglo XXI

Drug Discovery
Desarrollo de nuevos medicamentos

- Muy lento (15 años)
- Muy complicado (Fases)
- Muy costoso ($ 100 M)
- Muchos pacientes (1000)







Reto Tecnológico del Siglo XXI

Plant/animal observation

DNA/gene isolation

Collection of compounds

Identify new potential

Screen for/identify therapeutic protiens

Determine gene sequence

VALIDATION OF TARGETS

DEVELOPMENT OF SUSTAINABLE PRODUCTION

Plant/Animal Observation

EXPLORING BIODIVERSITY FOR HEALTH

FAUBA

Facultad de Agronomía de la UBA

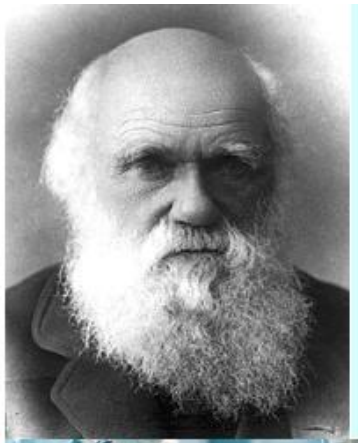
Departamento de Bioeconomía , Políticas Públicas y Prospectiva del Programa de Agronegocios y Alimentos.

LTI Biopharma S.A.

Empresa Biotecnológica Argentina especializada en las tecnologías del High-Throughput Screening Drug Discovery (HTS-DD)

Actividades Académicas y Empresariales

- Cursos de postgrado en Bionegocios
- Programa de Becarios y Tesis Doctorales
- Proyectos de I+D
- Proyecto Darwin



PROJECT DARWIN

EXPLORING BIODIVERSITY WITH HIGH-THROUGHPUT SCREENING DRUG DISCOVERY TECHNOLOGIES FOR HEALTH

Management

LTI Biotech-Biopharma is a private biotech company specialized in HTS-DD and has a two-tier management structure consisting of the Consulting Board of Scientific Directors and Executive Management.

The Consulting Board of Scientific Directors is composed by Prof. Dr. Fernando Goldbaum (former President of Agencia Nacional de Promoción Científica y Tecnológica del Ministerio de Ciencia y Tecnología of Argentina) and Prof Dr. Fernando Vilella (Professor of Agronomy Faculty of Buenos Aires University, Dept of Bionegocios).

Executive Management, in turn, has responsibility for the company's daily operations. The two bodies are separate, and no person serves as a member of both.

Biological Activity High Throughput Screening Drug Discovery Technology

LTI BIOPHARMA's HTS PLATFORMS

"We have created five different families of HTS including thirteen platforms"

Hemostasis Platforms™
Whole Blood FibriCoag™
Plasma FibriCoag™
Assemby ProT Complex™
Platelet Adhesion and Aggregation™

Thrombogenicity TumorPlatforms™
Tumor-associated TF activity™
Tumor-associated Factor X activators™
Tumor Cell-mediated assembly of ProCom™
Tumor-associated Plasmin/MMTs activity™
Tumor cell-mediated PAI-1/uPA/UPAR activity™

SchizoReceptor Platform™
D2/5H1A/mGlu2 receptors platform™

Alzheimer's Disease Platforms™
ßA-FibrinRes™
ßA-Astrogliosis Platforms™

AntioxidantPlatform™
CIO-CD platform™

(Myers et al. Nature 403, 853-858, 2000).

TABLA 1. Especies estimadas e identificadas

Especies	Estimadas	Identificadas	% Iden
Insectos	8.750.000	1.025.000	11,71%
Bacterias y Arqueos	1.000.000	4.000	0,4%
Virus	4.000	1.550	38,75%
Protozoos	200.000	40.000	20%
Nematodos y Gusanos	400.000	25.000	6,25%
Moluscos	200.000	70.000	35%
Crustaceos	150.000	43.000	28,6%
Otros organismos	250.000	110.000	44%
Peces	35.000	27.000	77,14%
Aves	10.000	9.700	97%
Mam'feros	4.809	4.650	97%
Anf'bios	4.780	4.780	100%
Plantas	320.000	270.000	84,3%
Hongos	1.500.000	72.000	4,8%
Algas	400.000	40.000	10%
TOTAL	13.800.000	1.800.000	13%

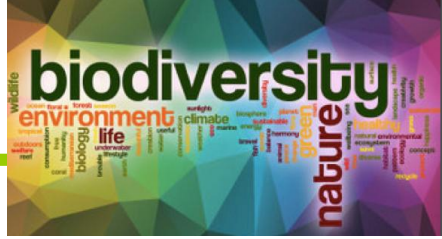
Conflicto Bioquímico

- Enzimas
- Péptidos
- Hormonas
- Neurotransmisores
- Activadores
- Inhibidores
- miRNA
- siRNA
- HRV's

Guerra Bioquímica
Dos organismos vivos

Supervivencia Bioquímica
Un organismo vivo y su medio hostil

EXPLORING BIODIVERSITY FOR HEALTH



EXPLORING BIODIVERSITY FOR HEALTH

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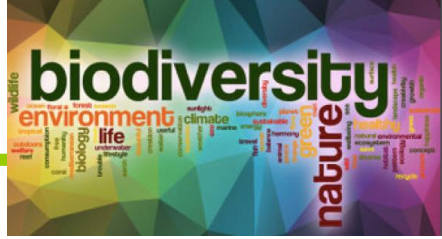
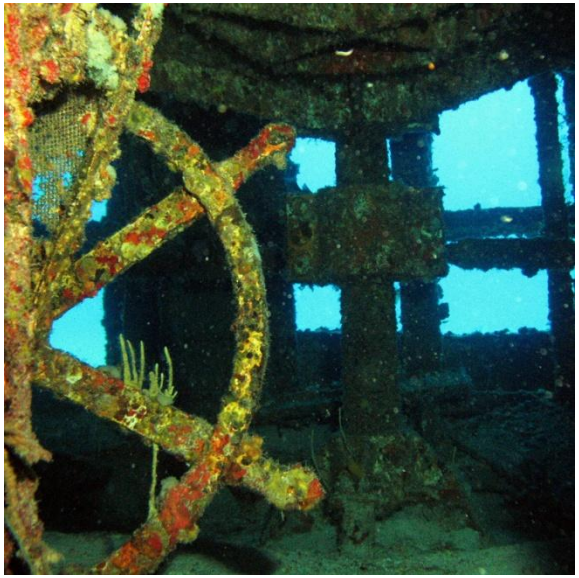
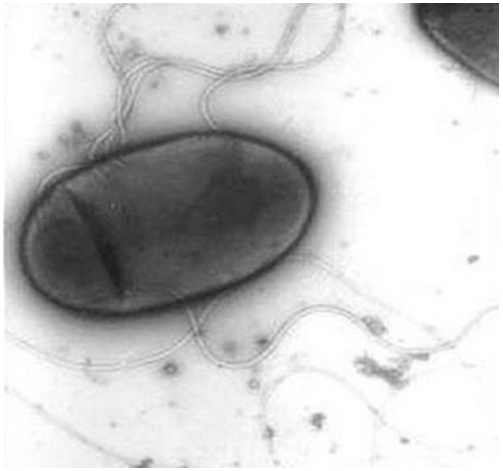


EXPLORING BIODIVERSITY FOR HEALTH





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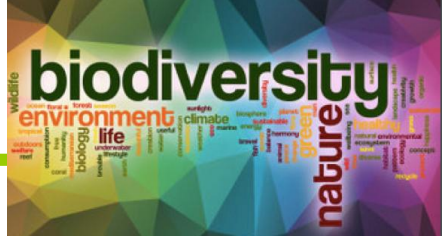

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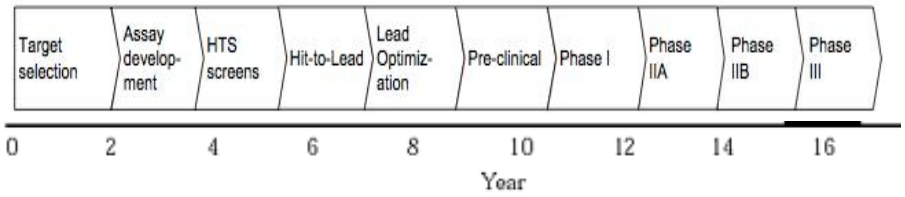

Partnering & Crowdfunding

- Raising funding privado y público
- Campañas de Crowdfunding locales y globales
- Partnering entre países ricos en biodiversidad

Maria Alejandra Pérez Bisbal . *MA*
Global Partnership Development Director

mariabisbal@ltibiotech.com

EXPLORING BIODIVERSITY FOR HEALTH

EXPLORING BIODIVERSITY FOR HEALTH