

Rummaging Through Pharma's Attic: DNDi's model and patent pools



Robert Don
DNDi



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DNDi Vision

A collaborative, patients' needs-driven, virtual, non-profit drug R&D organisation to develop new treatments against the most neglected communicable diseases



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A Solid and Global Foundation

7 Founding Partners



- Indian Council for Medical Research (ICMR)
- Kenya Medical Research Institute (KEMRI)
- Malaysian MOH
- Oswaldo Cruz Foundation Brazil
- Medecins Sans Frontieres (MSF)
- Institut Pasteur France
- WHO/TDR (permanent observer)

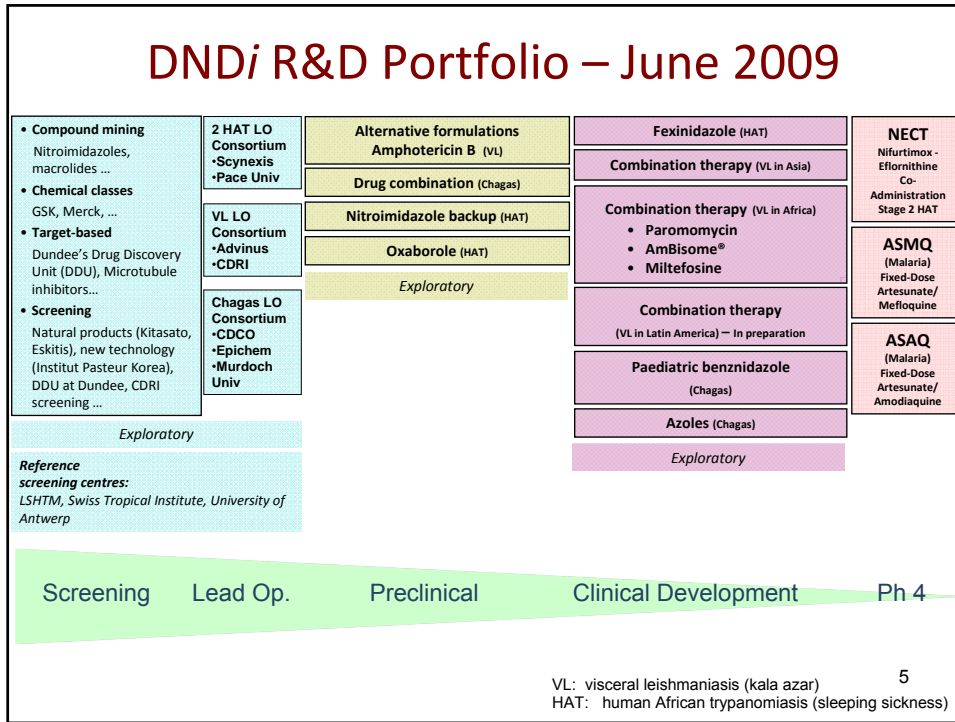
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DNDi Objectives

- Primary:
 - **Deliver 6 - 8 new treatments by 2014** for leishmaniasis, sleeping sickness, Chagas disease, & malaria
 - **Establish a robust portfolio** for new generation of treatments
- Secondary:
 - **Use and strengthen existing capacity in Disease Endemic countries**
 - **Raise awareness and advocate for increased public responsibility**

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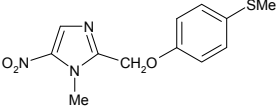
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DNDi Pharma Partnerships

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Fexinidazole

CN1C=CN(C1COC2=CC=C(C=C2)S)N=O

Clinical Candidate for Treatment of African Trypanosomiasis – Currently in Phase I

Originally developed by Hoechst
Partnered with Sanofi-aventis

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Ravuconazole

C14 α demethylase inhibitor
To enter clinical development for treatment of Chagas' Disease

Licensed from Eisai Co.

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Pediatric Benznidazole

Standard therapy for treatment of Chagas' Disease

Co-development with Lafepe (Brazil)

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Oxaboroles for HAT

Under development as clinical candidates for treatment of Stage 2 African Trypanosomiasis

Licensed from ANACOR Inc.

Lead Optimization with SCYNEXIS Inc.

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Access to Compound Libraries

GSK
Merck & Co., Inc.
Scynexis Inc.
Pfizer
Genomics Institute of the Novartis
Research Foundation
Novartis Institute for Tropical Diseases
Basilea

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Patent Pools

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Patent Pooling

- March 2009
 - GSK initiates patent pool for Neglected Tropical diseases 80+ families
- July 2009
 - Alnylam joins the pool with RNAi technology

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Patent Pool

In patent law, a **patent pool** is a consortium of at least two companies agreeing to cross-license patents relating to a particular technology.

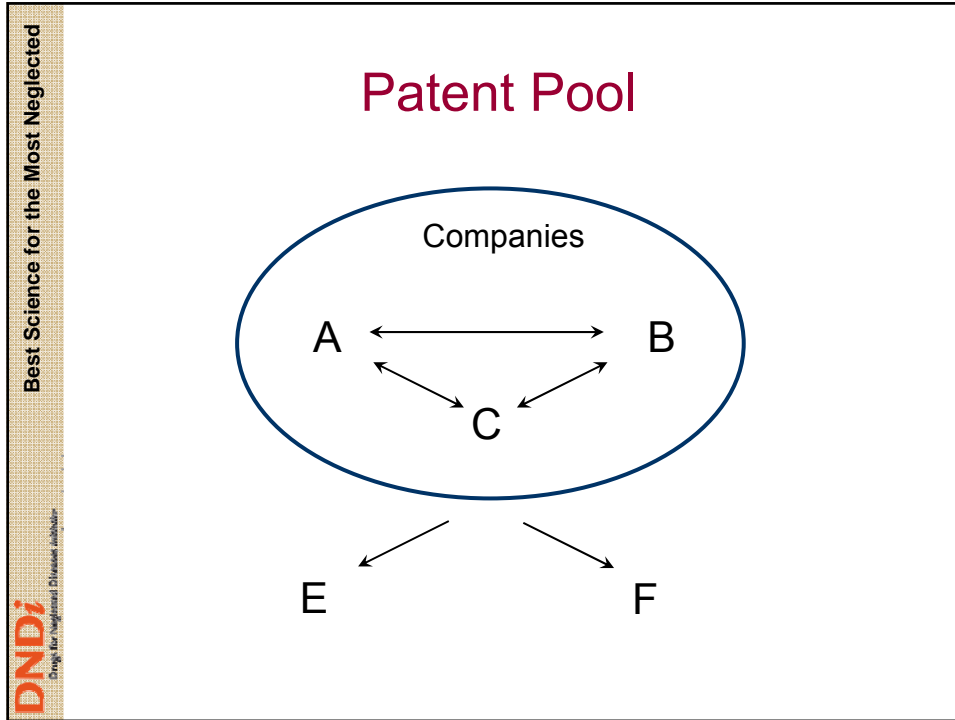
The consortium may also license the patents to third parties

Pools usually have standardized licensing terms between partners and with third parties

Examples:

- The Radio Frequency Identification Domain RFID Consortium picked Via Licensing to administer its patent pool in September 2006 (20 companies)
- DVD Six Licensing Group – DVD Formats (9 Companies)

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Pharma Patents

US Patent
“Antibacterial Agents”

A compound according to formula (I)

R1 and R1a are independently hydrogen; hydroxy; (C1-6)alkoxy unsubstituted or substituted by (C1-6)alkoxy, amino, piperidyl, guanidino or amidino any of which is optionally N-substituted by one or two (C1-6)alkyl, acyl or (C1-6)alkylsulphonyl groups, CONH2, hydroxy, (C1-6)alkylthio, heterocyclithio, heterocycloxy, arylthio, aryloxy, acylthio, acyloxy or (C1-6)alkylsulphonyloxy; (C1-6)alkoxy-substituted(C1-6)alkyl; halogen; (C1-6)alkyl; (C1-6)alkylthio; trifluoromethyl; trifluoromethoxy; nitro; cyano; azido; acyl; acyloxy; acylthio; (C1-6)alkylsulphonyl; (C1-6)alkylsulphoxide; arylsulphonyl; arylsulphoxide or an amino, piperidyl, guanidino or amidino group optionally N-substituted by one or two (C1-6)alkyl, acyl or (C1-6)alkylsulphonyl groups; provided that when Z1, Z2, Z3, Z4 and Z5 are CR1a or CH, then R1 is not hydrogen;

A is a substituted or unsubstituted 5 membered aromatic heterocyclic ring of formula (C);

wherein:

W1 and W2 are each independently selected from N, O, S, and CR8;

W3 is N or C;

W4 is N, O, S, or CR8;

each R8 is independently selected from hydrogen; hydroxy; halogen; trifluoromethyl; trifluoromethoxy; cyano; nitro; azido; acyl; acyloxy; acylthio; amino, mono- and di-(C1-6)alkylamino; and substituted and unsubstituted (C1-6)alkoxy, (C1-6)alkyl, (C3-7)cycloalkyl, aminocarbonyl, (C1-6)alkylthio, (C1-6)alkylsulphonyl, and (C1-6)alkylsulphoxide;

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Pharma patents

Pharma patents cover chemical space
They do not usually divulge useful SAR
What can a neglected diseases patent pool offer ?

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Patent Pool Opportunities

Standardized license agreements

- Between patent holders
- With development partners
- Value current IP and improvements

“Throw it in the pool”

Access to “Intellectual Capital”
A mechanism to deal with IP contamination
Access to compounds/representative libraries

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Patent Pool

The model is evolving

GSK Seeks partners and suggestions

Coordination by an independent third party is anticipated

An Opportunity exists to build a new collaborative model

Thank you!

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