H3D

PIONEERING WORLD-CLASS
DRUG DISCOVERY IN AFRICA

Drug Discovery in Africa

Susan Winks

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UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Holistic Drug Discovery and Development Centre (H3D)

Founded in 2010 as an accredited research centre within the University of Cape Town

Vision: To be a leading organisation for integrated drug discovery and development

Mission

- Discover and develop innovative, lifesaving medicines for infectious diseases
- Build Africa-specific models to contribute to improving treatment outcomes in African patients
- Develop drug discovery platform technologies
- Train African scientists in drug discovery-related sciences

Rapid growth and impact of H3D

75 staff members (88% with Masters or PhD)

Drug discovery programmes in 3 infectious disease areas

Two preclinical candidates for malaria

First-in-class antimalarial progressed to Phase II clinical trials

Global network of > 30 research partners and eleven funders


Check for updates

comment

Fostering drug discovery and development in Africa

The H3D Centre is a South African-based academic translational research unit that has had many successes and could provide a much-needed model for drug discovery and development in Africa.

Susan Winks, John G. Woodland, Goonaseelan 'Colin' Pillai and Kelly Chibale

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H3D scientific programmes

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Funders

Neville Isdell

MMV Medicines for Malaria Venture

NIH

technology innovation AGE

NRF National Research Foundation

saMRC advancinglife

Gates Foundation

LifeArc

Schmidt Sciences

science & innovation
Department: Science and Innovation
REPUBLIC OF SOUTH AFRICA

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KELLY CHIBALE RESEARCH GROUP · KC · UNIVERSITY OF CAPE TOWN

Malaria programme	TB programme	AMR programme	ARV API synthesis	Technology platforms	KC academic group
H3D malaria project portfolio consisting of hit-to-lead, lead optimisation, late lead optimisation, preclinical, clinical and formulation projects	H3D tuberculosis (TB) project portfolio consisting of hit-to-lead and lead optimisation projects	H3D antimicrobial resistance (AMR) portfolio consisting of hit-validation and hit-to-lead optimisation projects	H3D antiretroviral (ARV) active pharmaceutical ingredient (API) manufacture process optimisation using flow reactor platforms	H3D technology platforms include the DMPK and biology platforms	Kelly Chibale (KC) academic croup focuses on drug discovery (use)-inspired basic science research

H3D technology platforms

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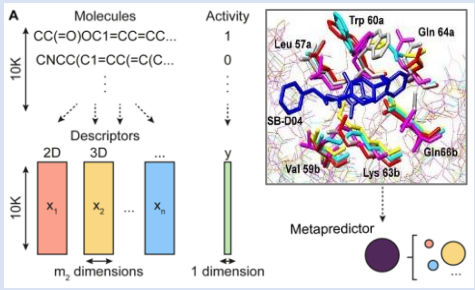
Faculty of Science

Faculty of Health Sciences

Medicinal chemistry

CADD, AI and ML

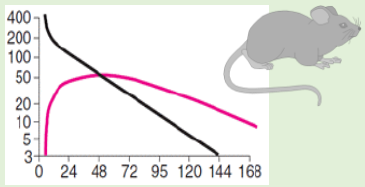


DMPK

In vitro ADME

Physicochemical, metabolism & binding

In vivo PK

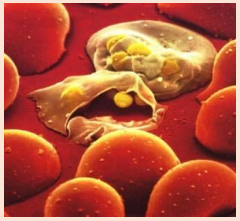


Pharmacometrics

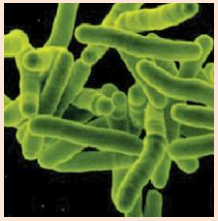
Biology

Malaria biology

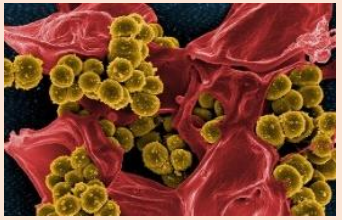
(*in vitro* and *in vivo*)

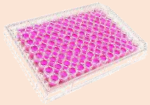


TB biology



AMR biology





Cytotoxicity cross-screening

Enzymology

Data storage and sample management

Centre for Translational AMR Research (CTAR)

- Dec 2024, CTAR Centre officially launched
- To develop new generation antibiotics for treatment of AMR in Africa
- To further build and strengthen the ecosystem of AMR research in Africa

How could IPEA help Drug Discovery Research Centres like CTAR?

- Influence the research agenda by providing clear data to support regionally relevant target product profiles and target candidate profiles
- Influence and advocate for the parallel development of diagnostics relevant for clinical application of new therapeutics
- Influence funding agencies, PDPs, governments to provide support through critical R&D phases so that candidates progress into the clinic
- Ensure effective stewardship of new therapeutics to reduce the development of drug resistance and

Current Collaborators