

# *Screening natural products for biological activity*

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A Biorefining Centre of Excellence for Wales

# BEACON



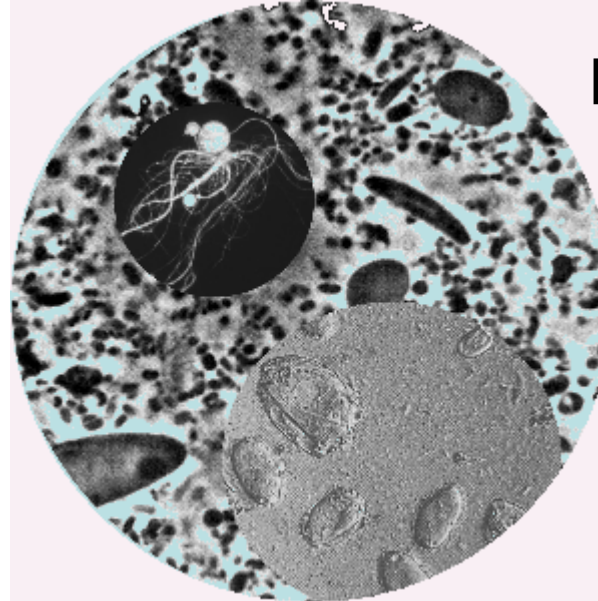
From plants to products  
O blanhigion i gynhyrchion



# IBERS

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Institute of Biological, Environmental and Rural Sciences

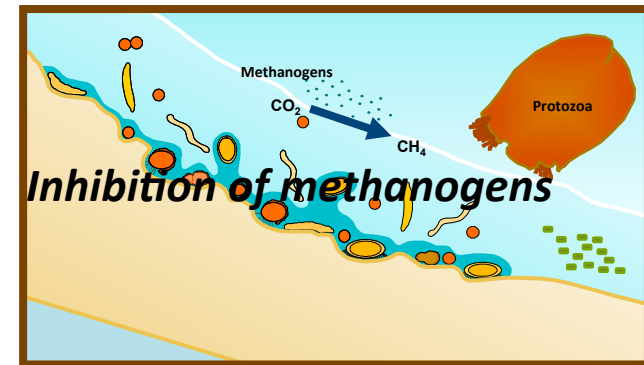
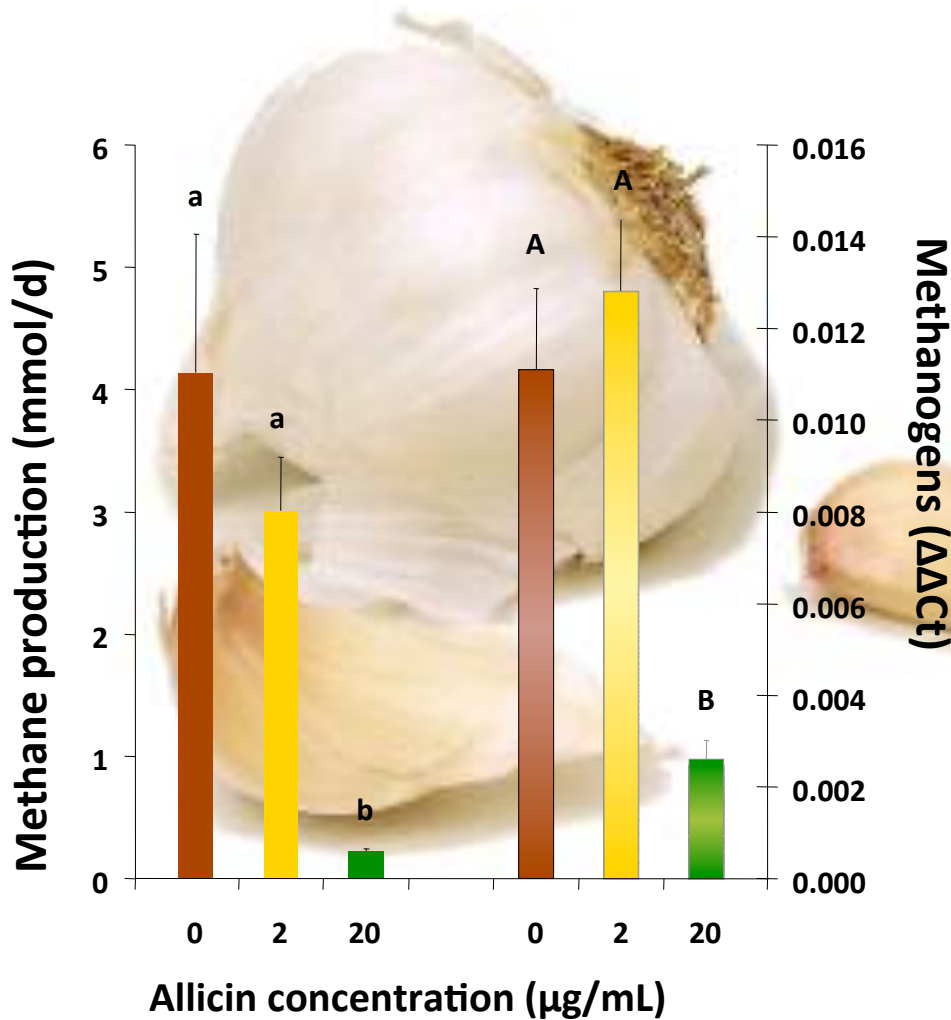
Fungi



Bacteria

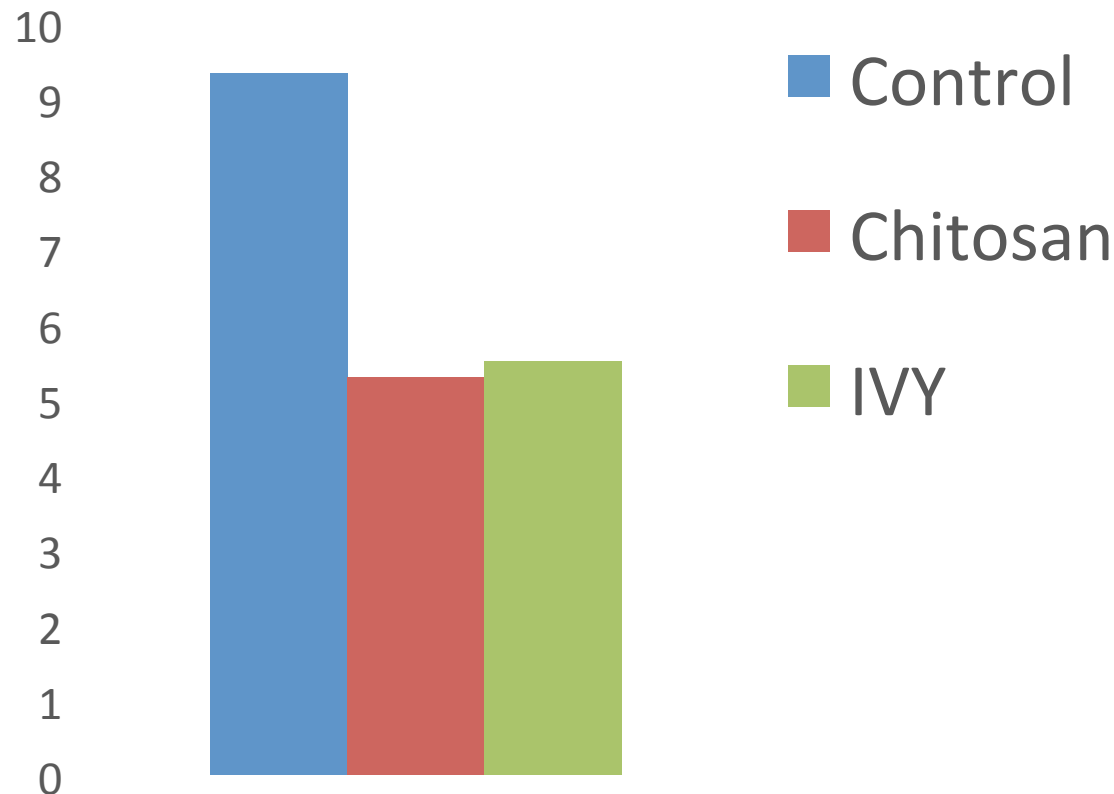
Protozoa

# Plant extracts



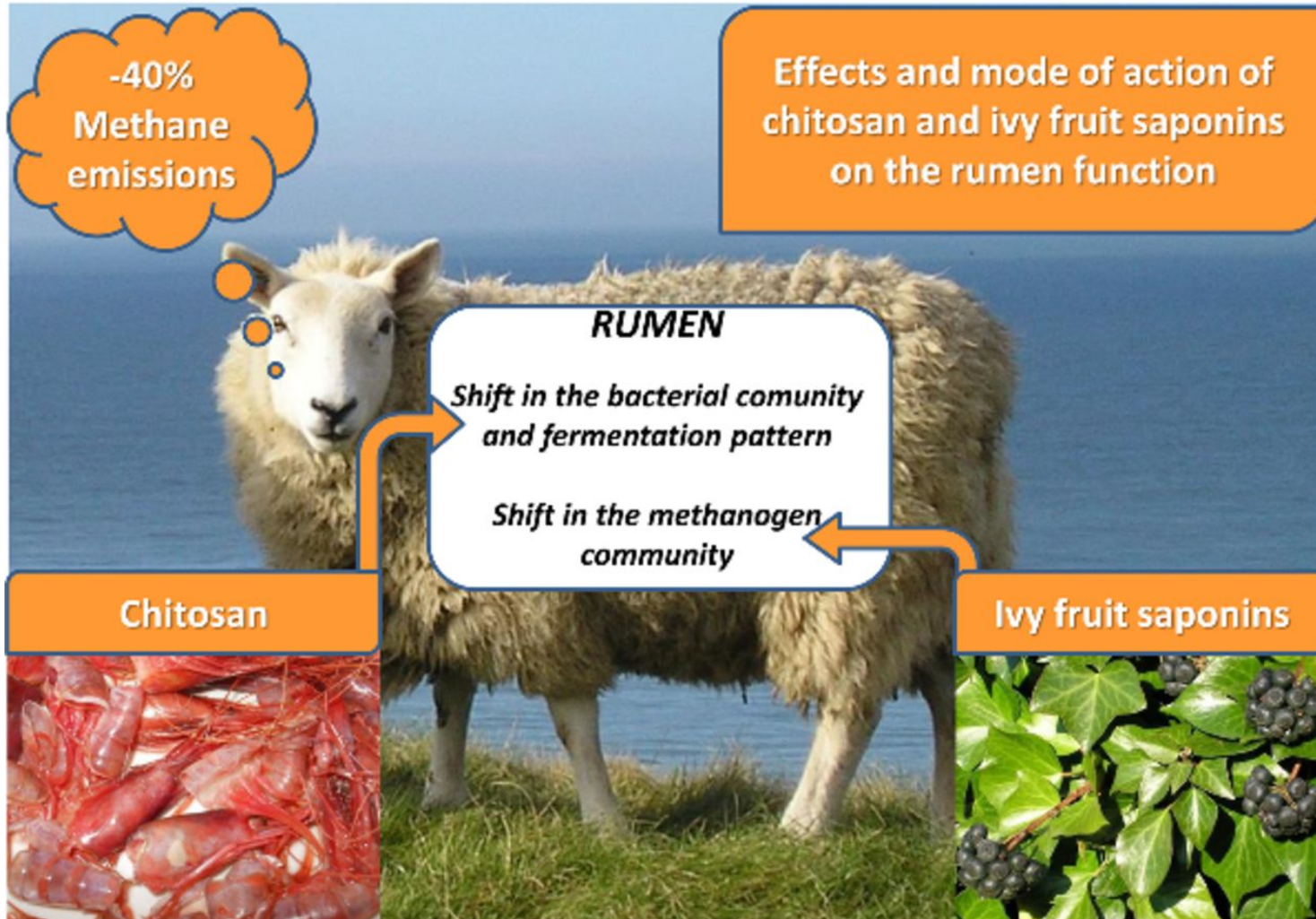


## Methane (mL gDOM<sup>-1</sup>)



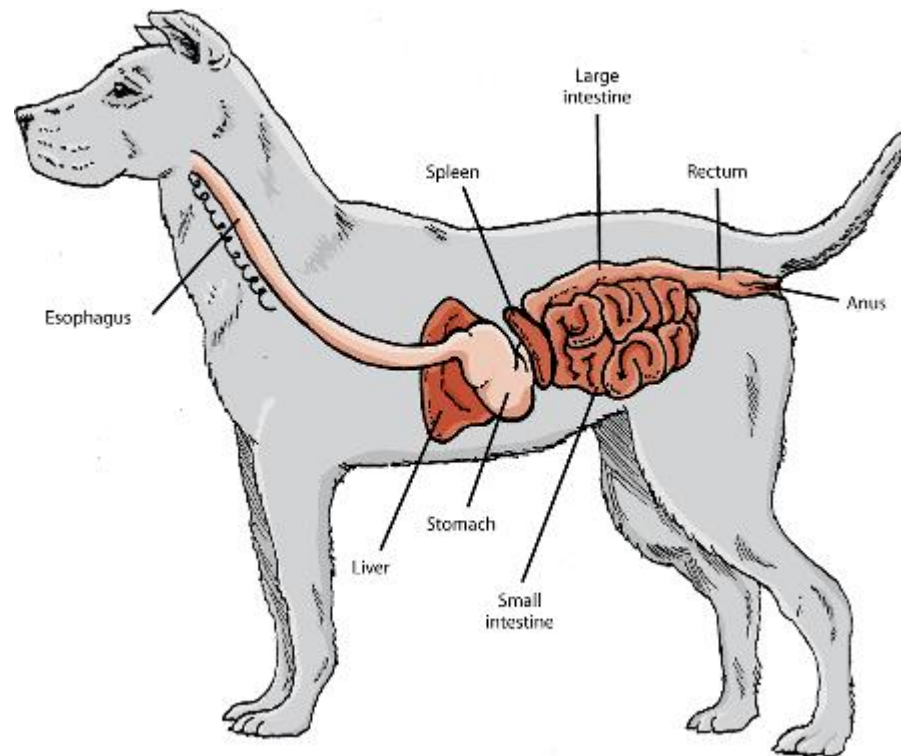
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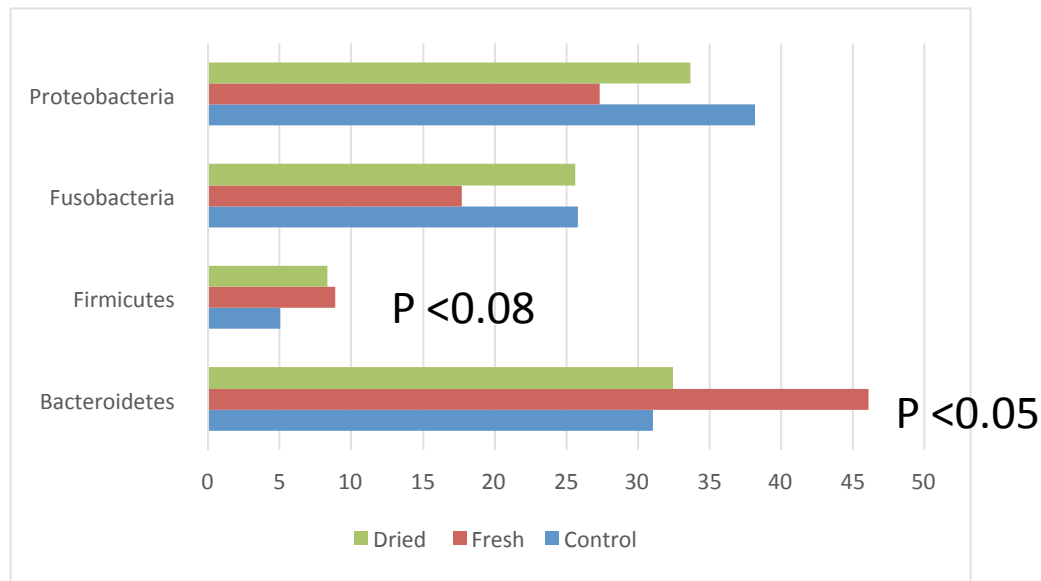


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# Effect on major phyla (molecular data)





# Antimicrobial Drug leads from Natural Products

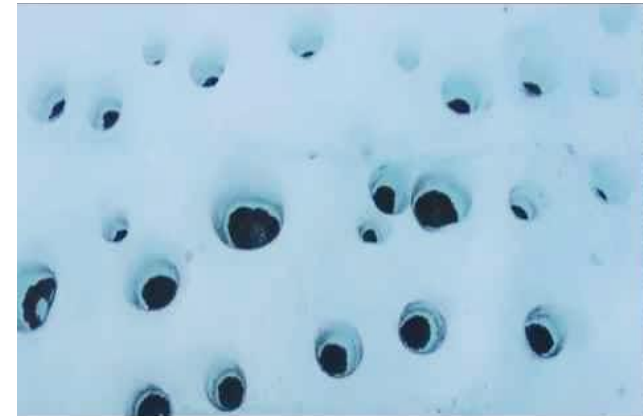


Knotweed



Hops

Himalayan Balsam



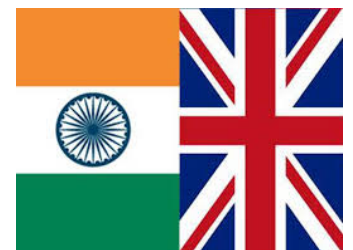
Genome mining microbes from extremophile environments



Morenga - Nigeria



Wild Olive - Pakistan







1. Extraction/  
Separation



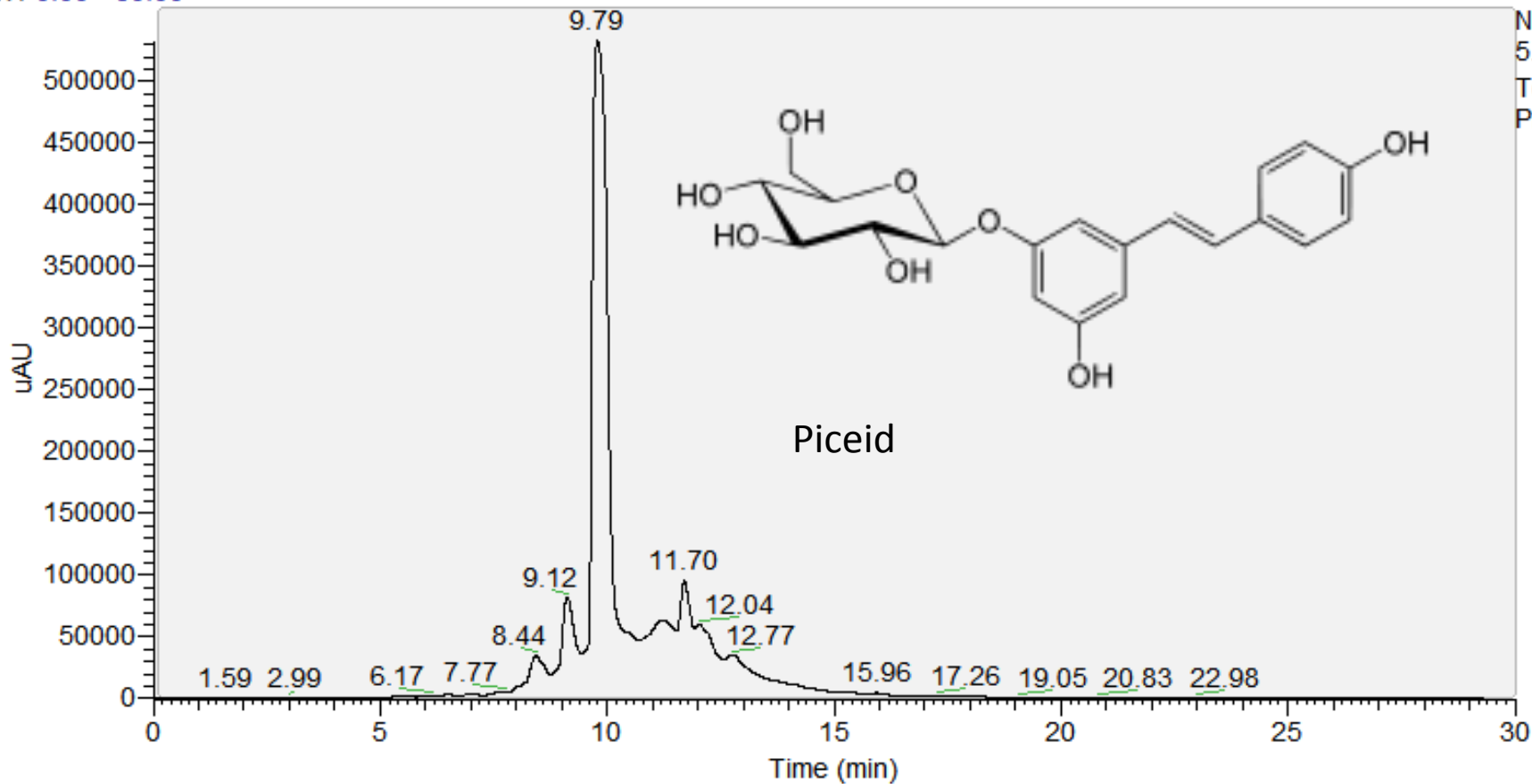
2. 96 well based screens for bioactivity



3 Metabolite identification

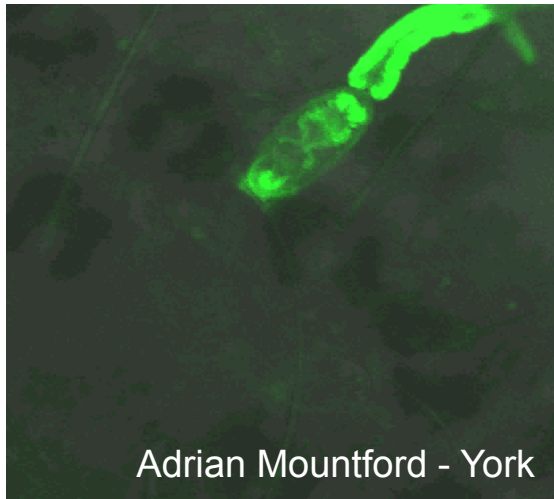
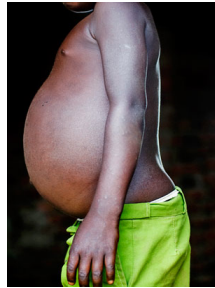


RT: 0.00 - 30.00



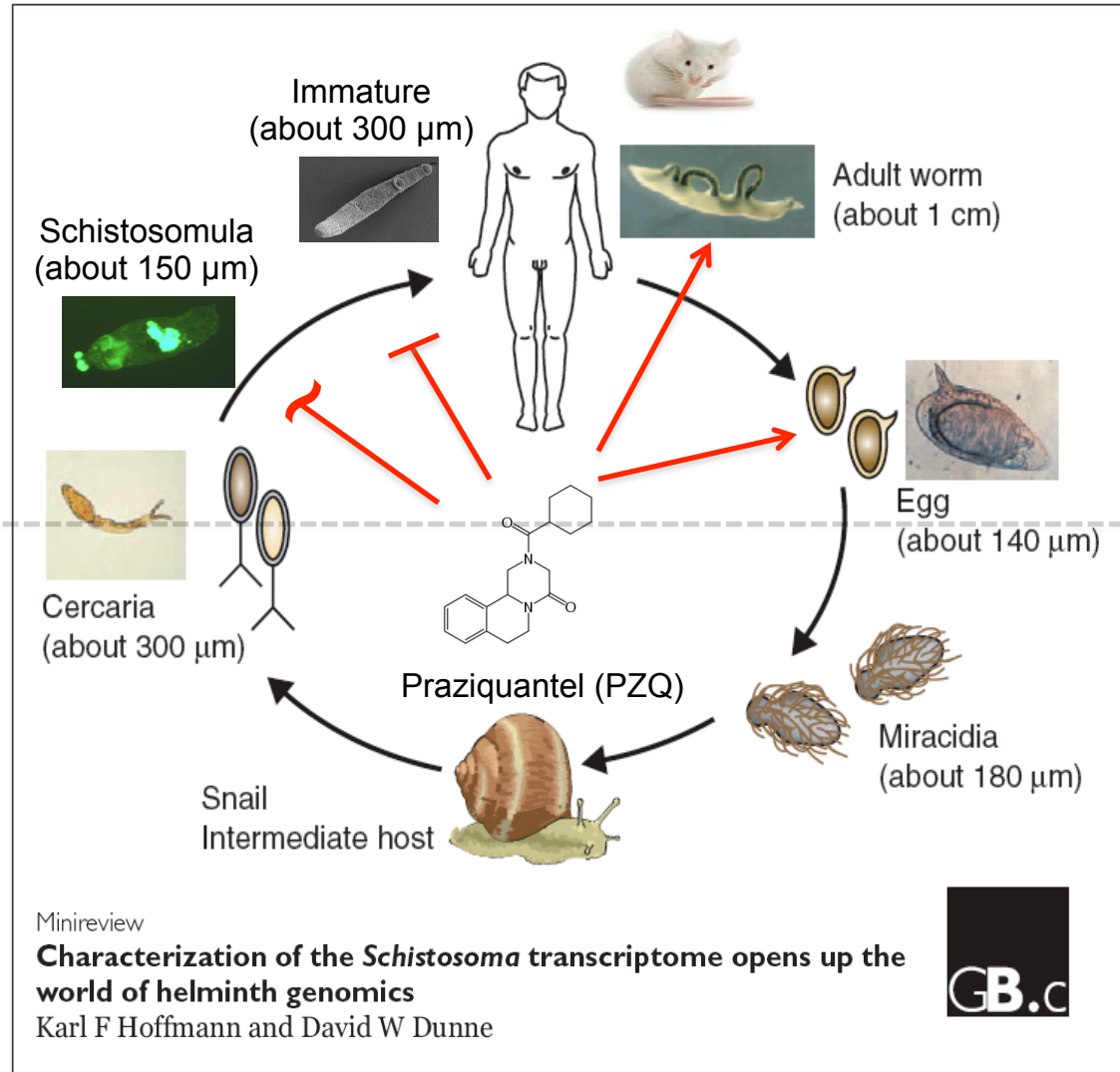
NL:  
5.33E5  
Total Scan  
PDA JK4

# Schistosomiasis (Bilharzia)



Intra-mammalian

Intra-molluscan



## Praziquantel

Safe

Cornerstone of MDA

Cheap

Praziquantel has limitations!

**NPs – ivermectin, artemisinin**

# Moving forward (2) - Roboworm

State of the art HT screening – 100K compounds per annum

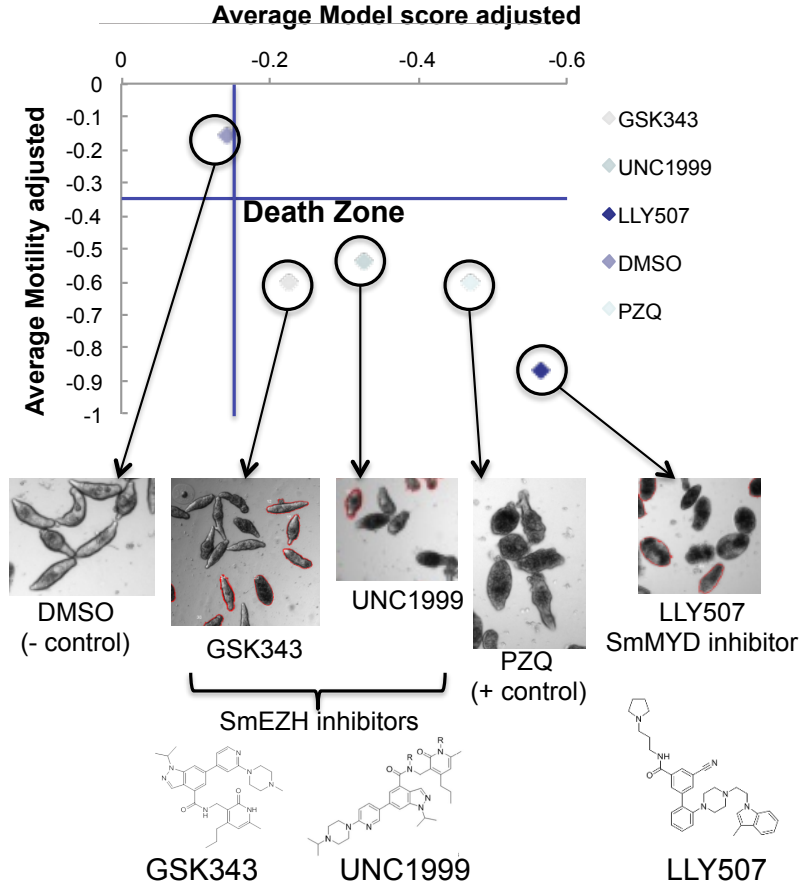
Tip/plate hotel

Workstation



HCI

Parasite culture



Availability of screening plant-derived natural products



# Questions

