Aquapharm Biodiscovery

Commercialising Marine Bioscience – Aquapharm's Experience

Aquapharm BIODISCOVERY

BioEntrepreneur 2008

Aquapharm Biodiscovery

At a Glance

A UK marine biotechnology company
using
new approaches
to bio-prospect and commercialise
novel marine compounds and systems,
to supply
pharmaceutical, nutraceutical,
cosmeceutical and industrial markets

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Strategic Location

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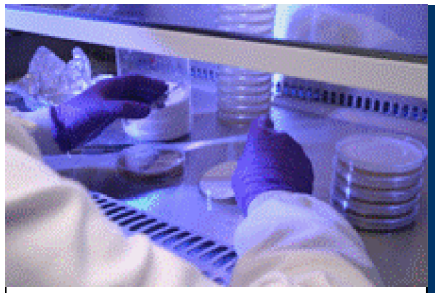

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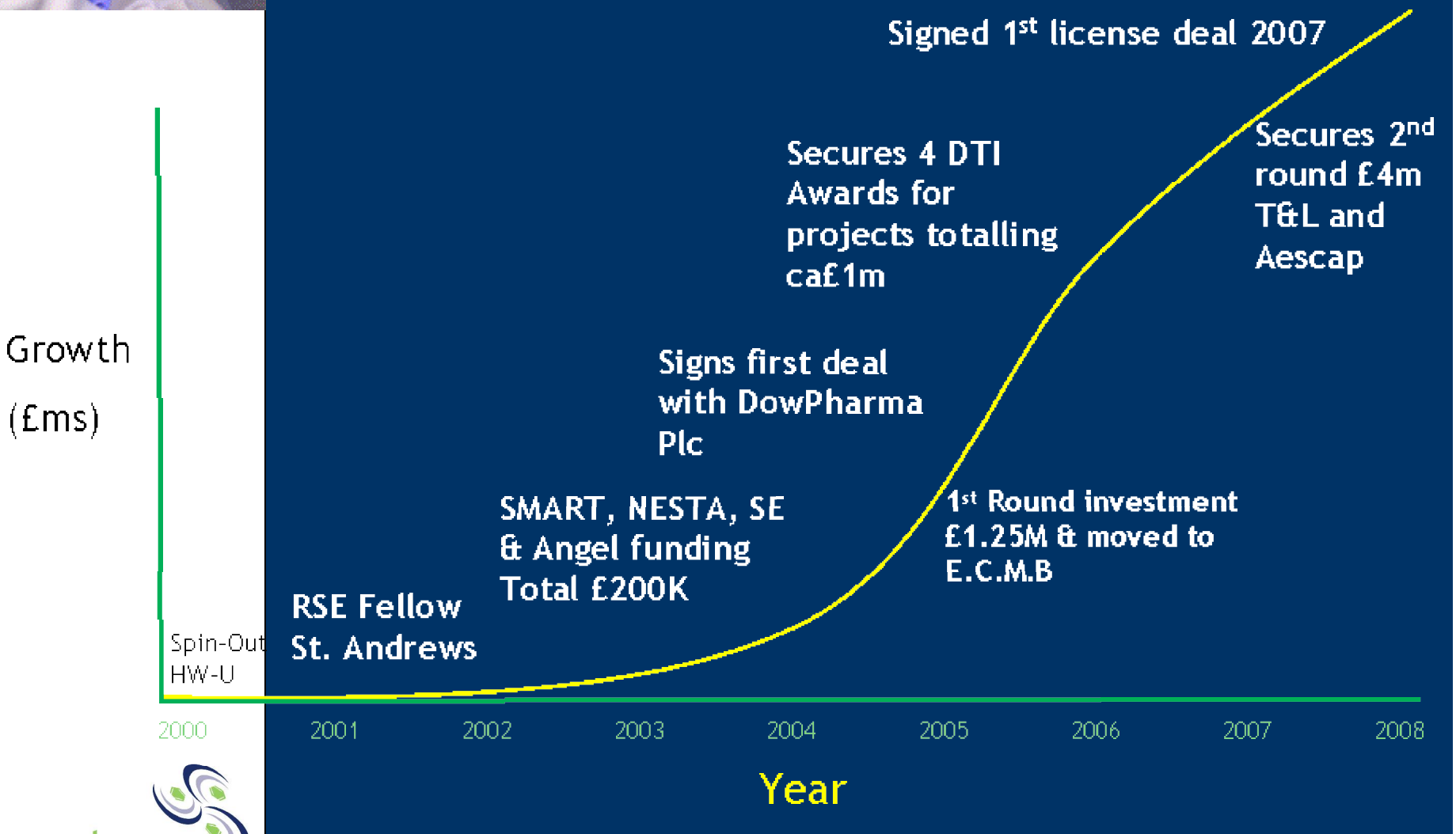
Funding History and Growth



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Government Support

Award	Business Sector	Area	Collaborator	Status
DTI TECHNOLOGY 1	Cosmetic / Food Carotenoid manufacture	Bioprocess scale-up from 20L – 1000L fermentation	CONFIDENTIAL	Awarded
DTI TECHNOLOGY 2	Pharmaceutical	New Enzyme discovery	Exeter University	Awarded
SCORE	Nutraceuticals & Industrial	New fatty acid & oils discovery	NESS Foundation	Awarded
BTP 1	Natural Products Chemistry	Structure elucidation	Aberdeen University	Awarded
BTP 2	Pharmaceutical	In vivo development	Glasgow University	Awarded
NWDA	Pharmaceutical	Protein characterisation and fermentation	Eden Biodesign	Awarded

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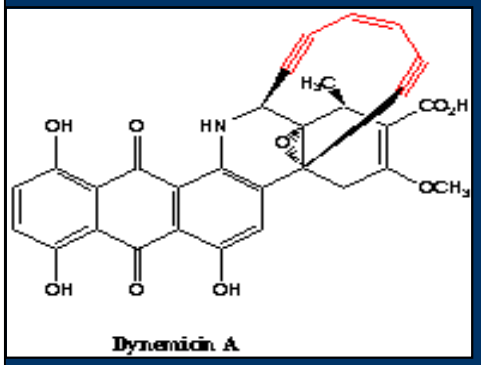
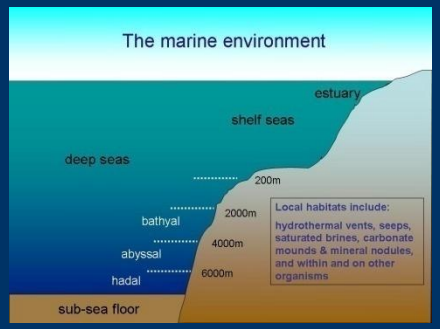
Why Marine Biotechnology
Opportunities for discovery

Natural Products



Very poor record of Combinatorial Chemistry
Return to Natural Products

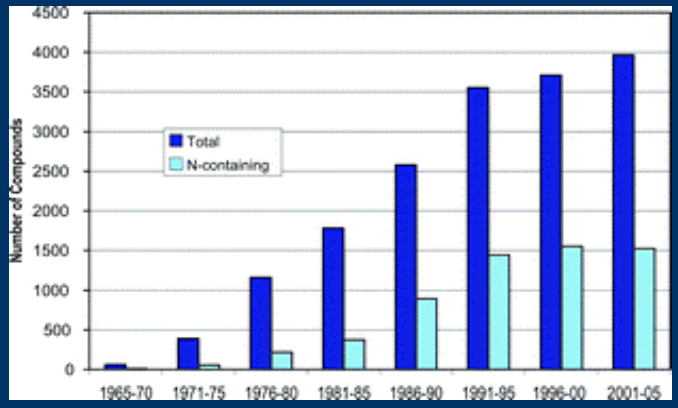
Marine Environment



Focus on under-researched environments

New source of biological diversity

Marine organisms, have unrivalled capacity to produce new natural products



Marine natural products

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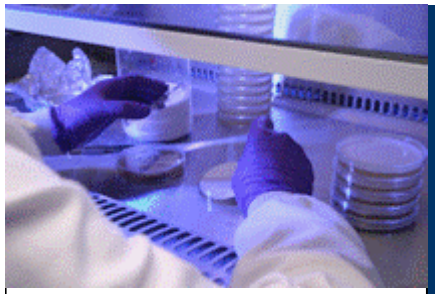
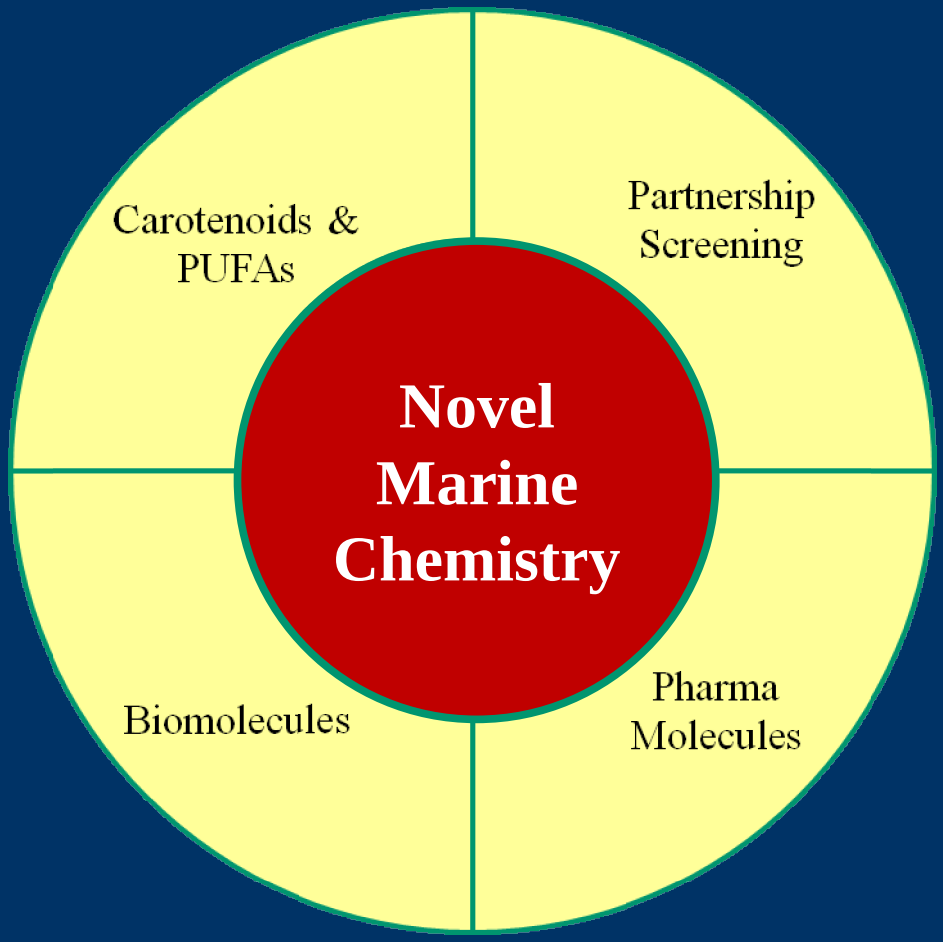


Aquapharm's Business



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Personal Care: AQP1639

A new marine microbe AQP-1639 collected from the deep sea

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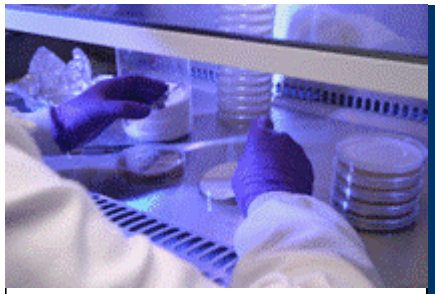
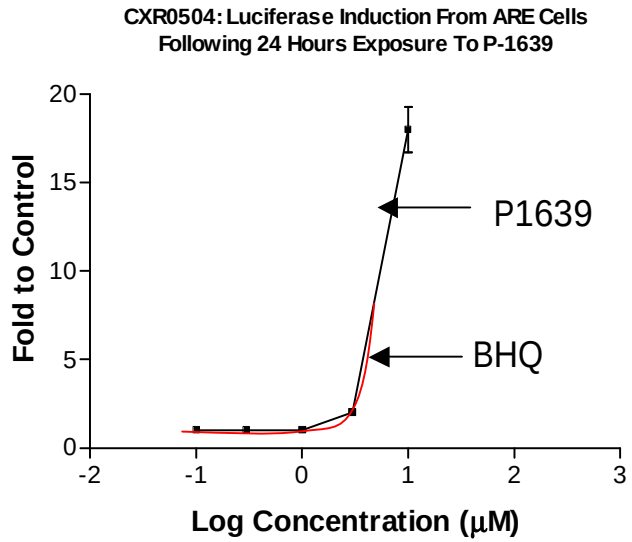


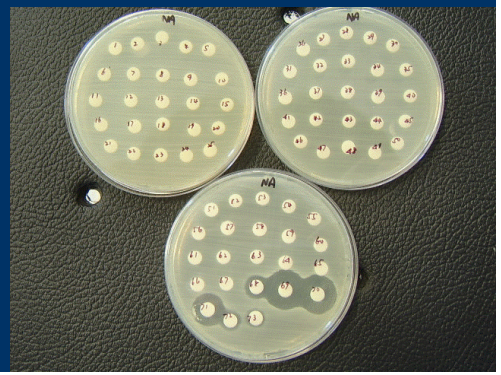
P-1639

The antioxidant response element (ARE) assay

A novel small molecule isolated from a new deep sea micro-organism.



- ü Potent inducer of intracellular glutathione
- ü Strong anti-inflammatory activity
- ü Small molecule
- ü Potent activity against drug resistant fungi
  - *Candida albicans,*
  - *Malassezia furfur*
- ü No *in vitro* toxicity towards human hepatocytes



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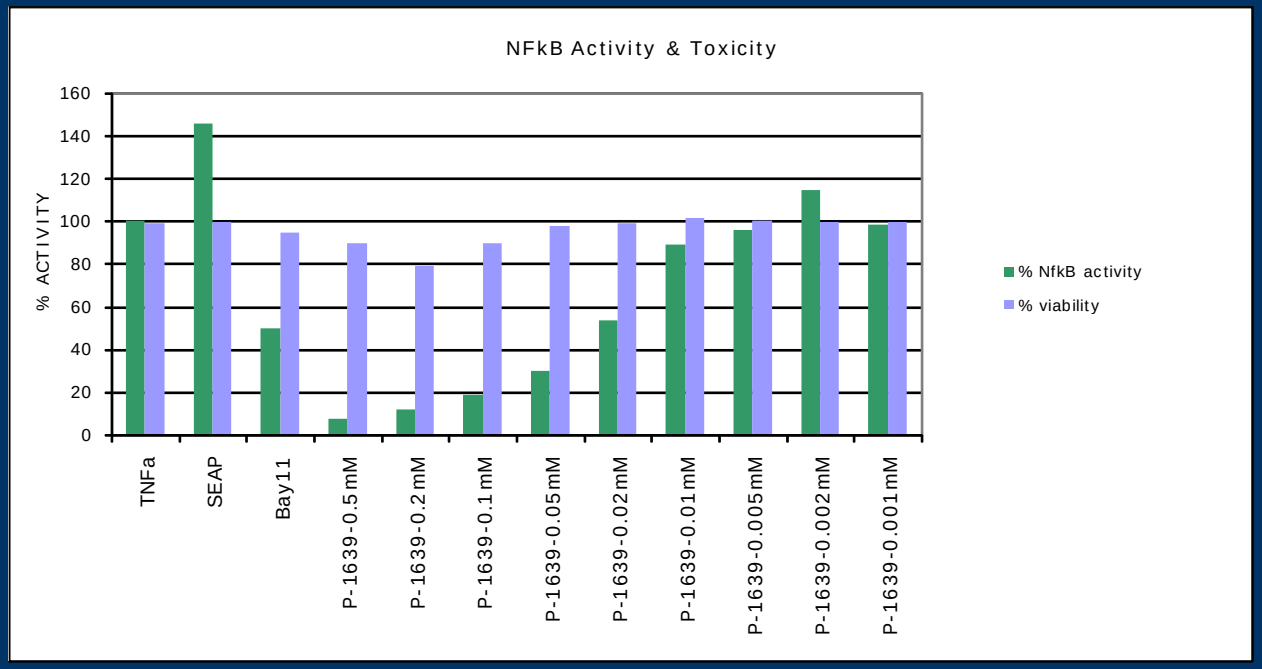
P-1639

Anti-inflammatory screening results P-1639



The effect of P1639C on suppression NF-κB target

1. TNFα involved in the normal inflammation response
2. SEAP is a secreted alkaline phosphatase to enhances anti-inflammatory (NF-κB) activity.
3. Bay11 is a standard inhibitor of NF-κB activity.

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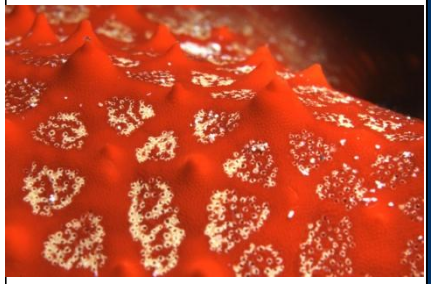
P-216cm

Novel pseudopeptide antibiotic

- New structure (NCE) & activity
- Secure IPR
- Bactericidal
- Active against a range of MRSA & VREs & Anti-Fungal
- Potent activity against drug resistant bacteria
- *In-vivo* POC pre-clinical study completed May '07
- Entered full pre-clinical evaluation in Jan 2008



Compound	MIC_{90} µg/ml
Obicin	2 (average MIC 2 µg/ml against a wide range of MRSAs and VISAs
Daptomycin	0.25 - 2
Linezolid	0.25 - 16

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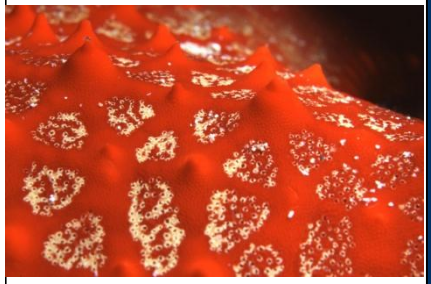

P-216cm
Antifungal activity

Fungal Pathogen Strain	Obicin MIC_{50} µg/ml
Epidermophyton floccosum	2
Trichophyton species	0.2-2
Aspergillus species	1-6
Scytalidium dimidiatum	0.7
Candida albicans	4
Candida krusei	4
Candida tropicalis	4
Cryptococcus neoformans	1.5

P-216cm has demonstrated broad spectrum antifungal activity

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Summary

- Lead compounds moving in to development
- Strong IPR on technology & products
- Strong team in place to drive business
- €6m funding in place to drive business forward
- Out-licensing of technologies and products

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