ICUK Launch Event

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Phytochemical informatics applied to Traditional Chinese Medicine

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UK perspective

Huge increase in use of alternative medicines

Many conventional drugs derived from natural sources

Traditional Chinese Medicine, TCM, is an important part of the sector
Chinese perspective

High priority given to unique cultural heritage of TCM

Desire for internationalisation via commercialisation

Growing sector estimated at - @$18billion

New companies emerging
Not as easy as all that !!

Major barrier in the TCM sector
  regulatory issues
  safety and efficacy

Only way is by good, controlled trials

Huge need for improved standardisation
Centre for Natural Medicines
Research Aims

Working with Chinese academic partners on application of innovative approaches to:

Improve standardisation, leading to clinical trials

Undertake drug discovery

Introduce effective, safe and licensed medicinal products to market
Collaborators in China

Institute of Medicinal Plant Research, Beijing
  Professor Xiao Peigen

Dalian Institute of Chemical Physics
  Professor Liang Xinmiao

Zhejiang University, Hangzhou

Shanghai Institute of Materia Medica
  Professor Hualiang Jiang

Heilongjiang University of TCM, Harbin
  Professor Kwang
Current projects

Innovative methods of standardisation

Metabonomics

Acupuncture

Informatics and drug discovery
Metabonomic standardisation
Acupuncture and PET scanning
Informatics and drug discovery

Self-Organising Maps

Distribution of compounds among the 40 classes visualised separately to show the proportion of compounds of that type found in each category.

Compounds with similar TCM profiles tend to belong to the same phytochemical class.
Current sources of funding

Commercial
- International consumer company
- TCM companies

Charity
- Kidney Research UK

Government / Learned Society
- Chinese Academy of Sciences
- The Royal Society
Most recent achievements

A series of studies on the applications of a different type of informatics

Database
Virtual screening
Prioritisation of putative actives `for development

Virtual screening of traditional Chinese herbs established that a relatively large number of herbs were predicted to inhibit multiple targets, as well as a number which appeared to contain inhibitors of the same target from different phytochemical classes.
Significant commercial interest

Consumer healthcare product companies

Natural product companies (including TCM companies)

Pharmaceutical companies
Benefits that ICUK will bring:

Access to Proof of Concept Fund to develop applications to address barriers in the TCM market

eg, potential projects with Shanghai Institute of Materia Medica include:

Opportunity to develop the database for commercial use

Opportunity to combine and develop docking studies with analytical technologies and services for commercial use

Access to Partnership Grant for staff exchanges and new collaborations will drive innovation
Thank you for your attention

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