

EUROPIN

A European Pharmacoinformatics Initiative

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Emerging Field Pharmacoinformatics

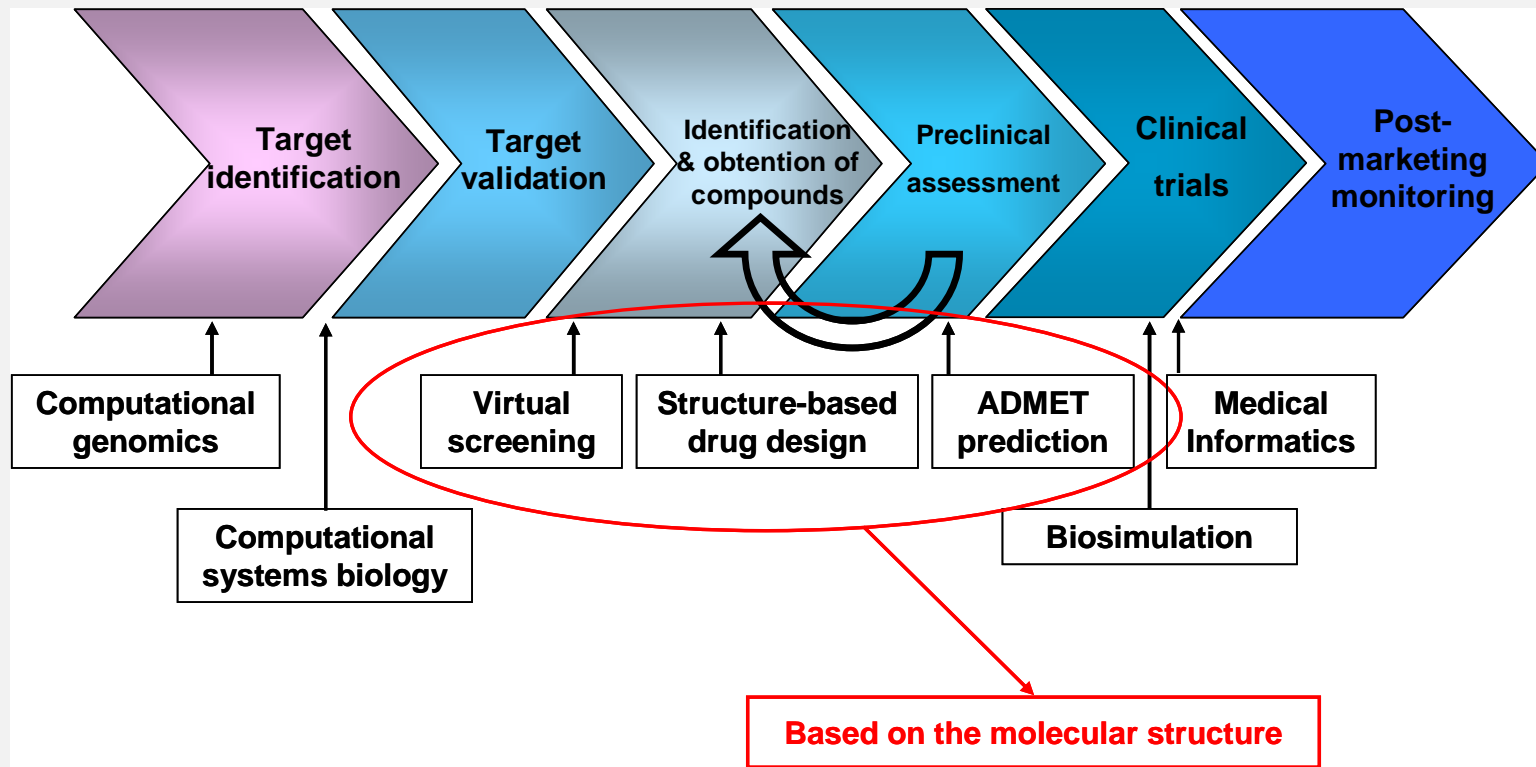
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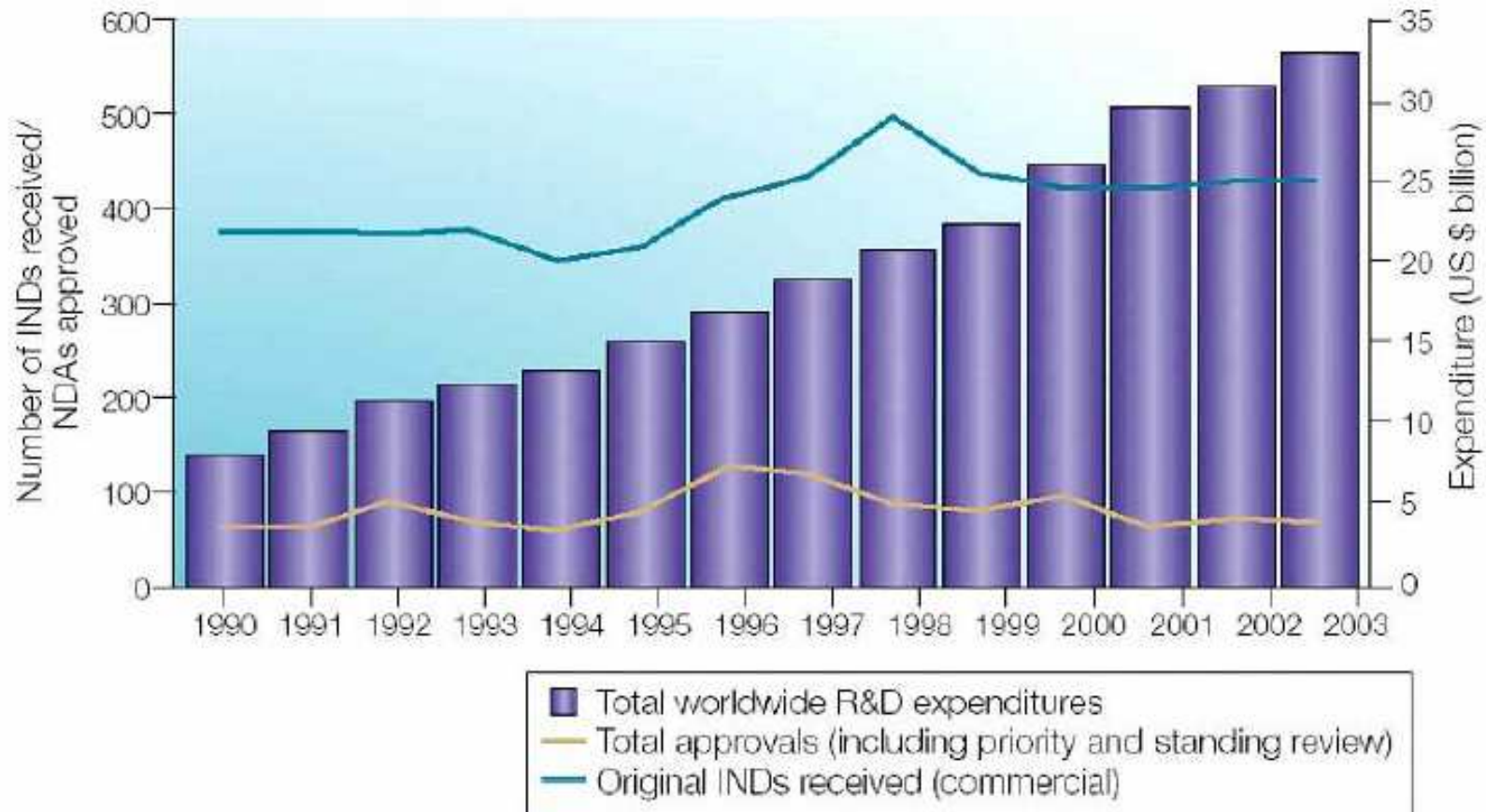
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Pharmacoinformatics

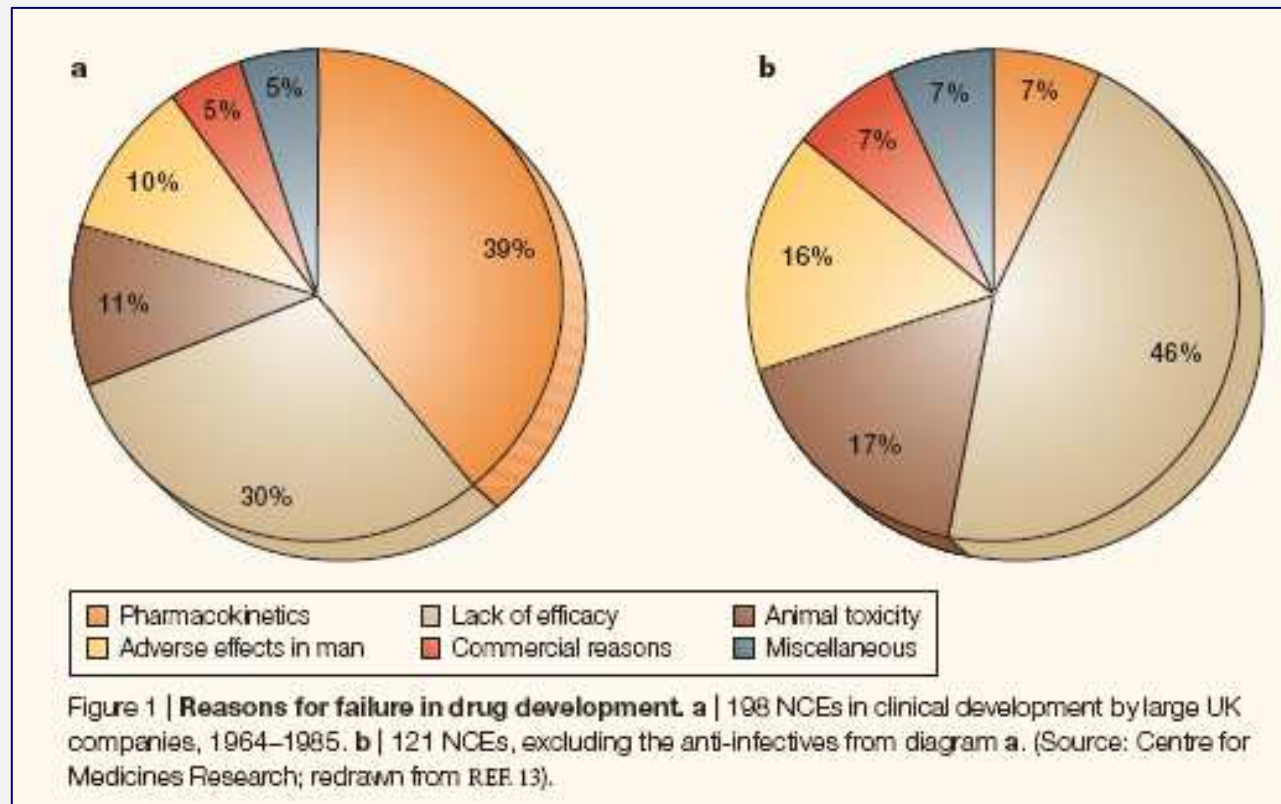


The Productivity Gap in Pharmaceutical Industry



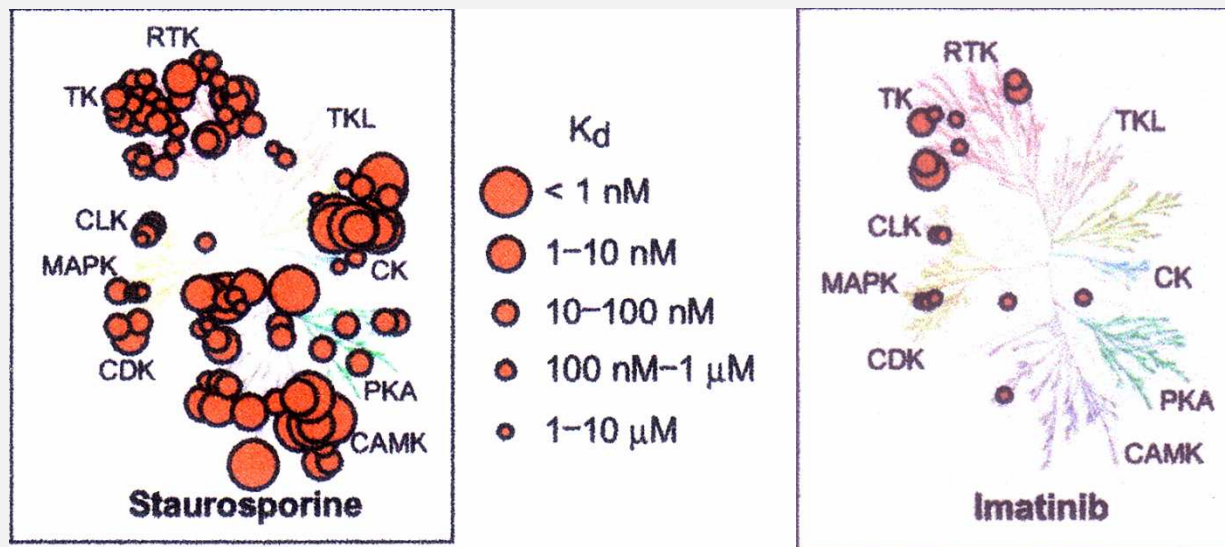
T.T. Ashburn and K.B. Thor, *Nature Rev. Drug Discov.* **3**, 673-683 (2004)

Drug Development - Failures



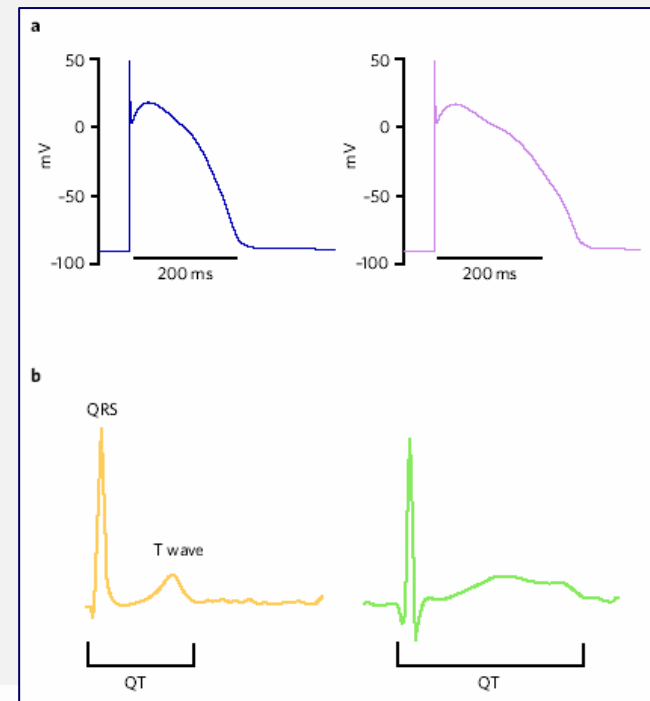
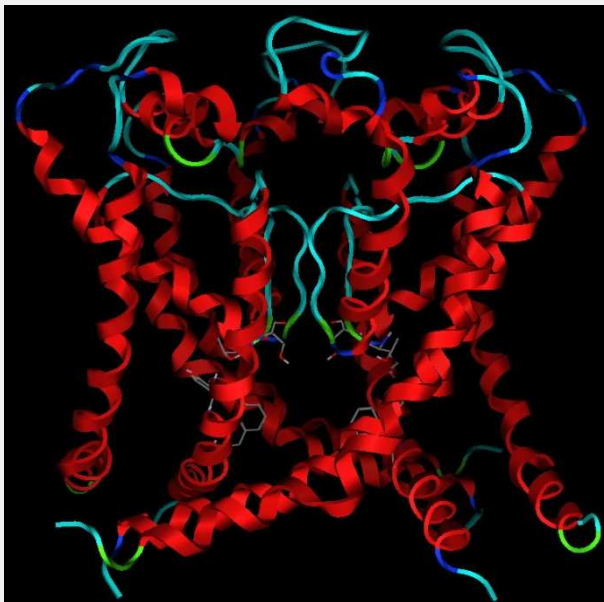
Paradigm Shifts

- One drug – one target
- One drug – multiple targets (kinases)



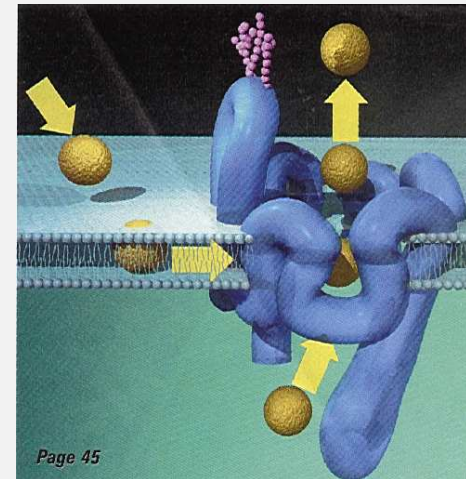
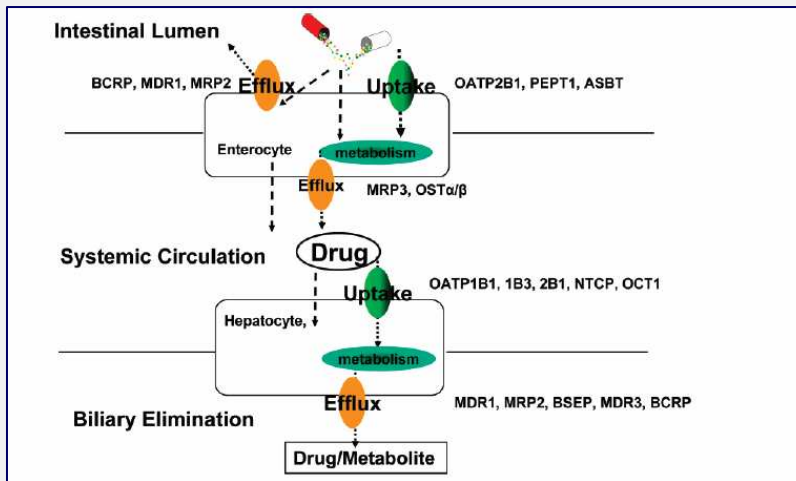
Paradigm Shifts

- Many drugs – one target (hERG channel)



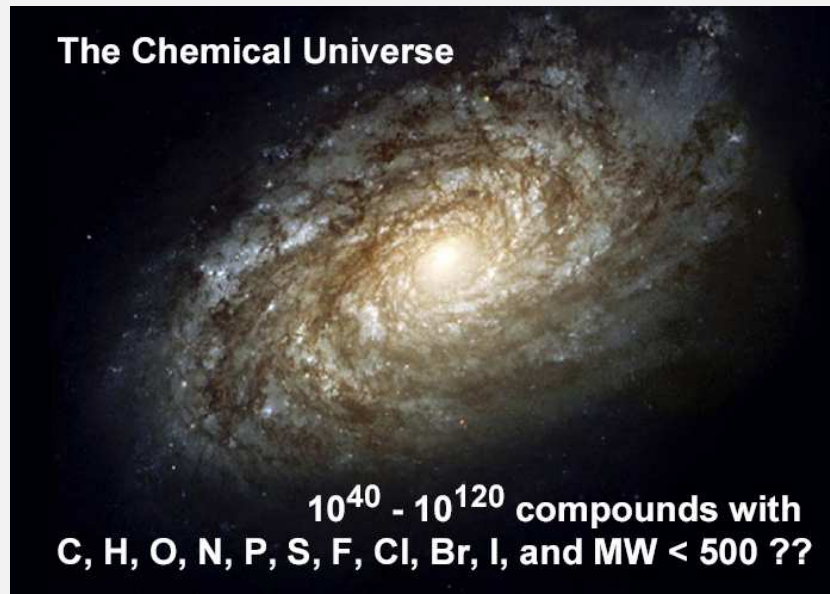
Paradigm Shifts

- Many drugs – many targets (ABC-transporter)



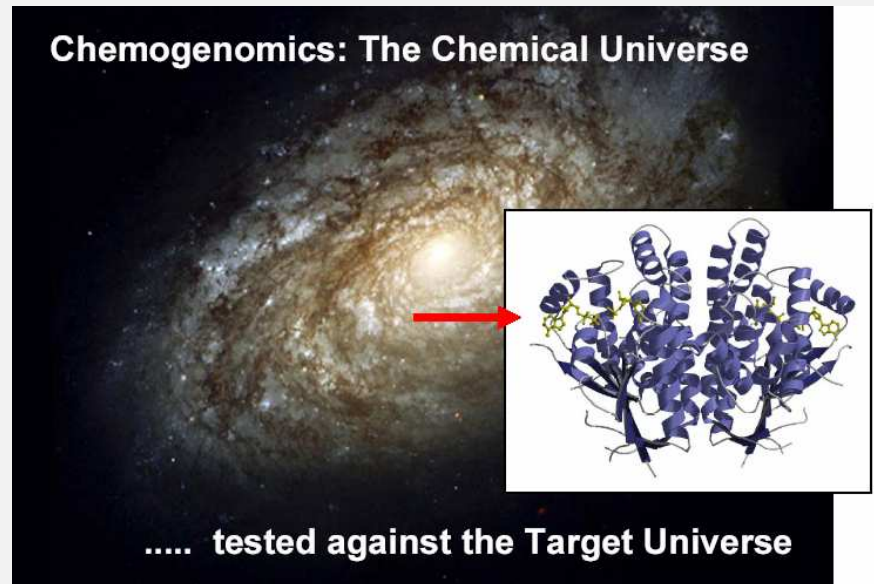
Chemogenomics

The Chemical Universe



10^{40} - 10^{120} compounds with
C, H, O, N, P, S, F, Cl, Br, I, and MW < 500 ??

Chemogenomics: The Chemical Universe

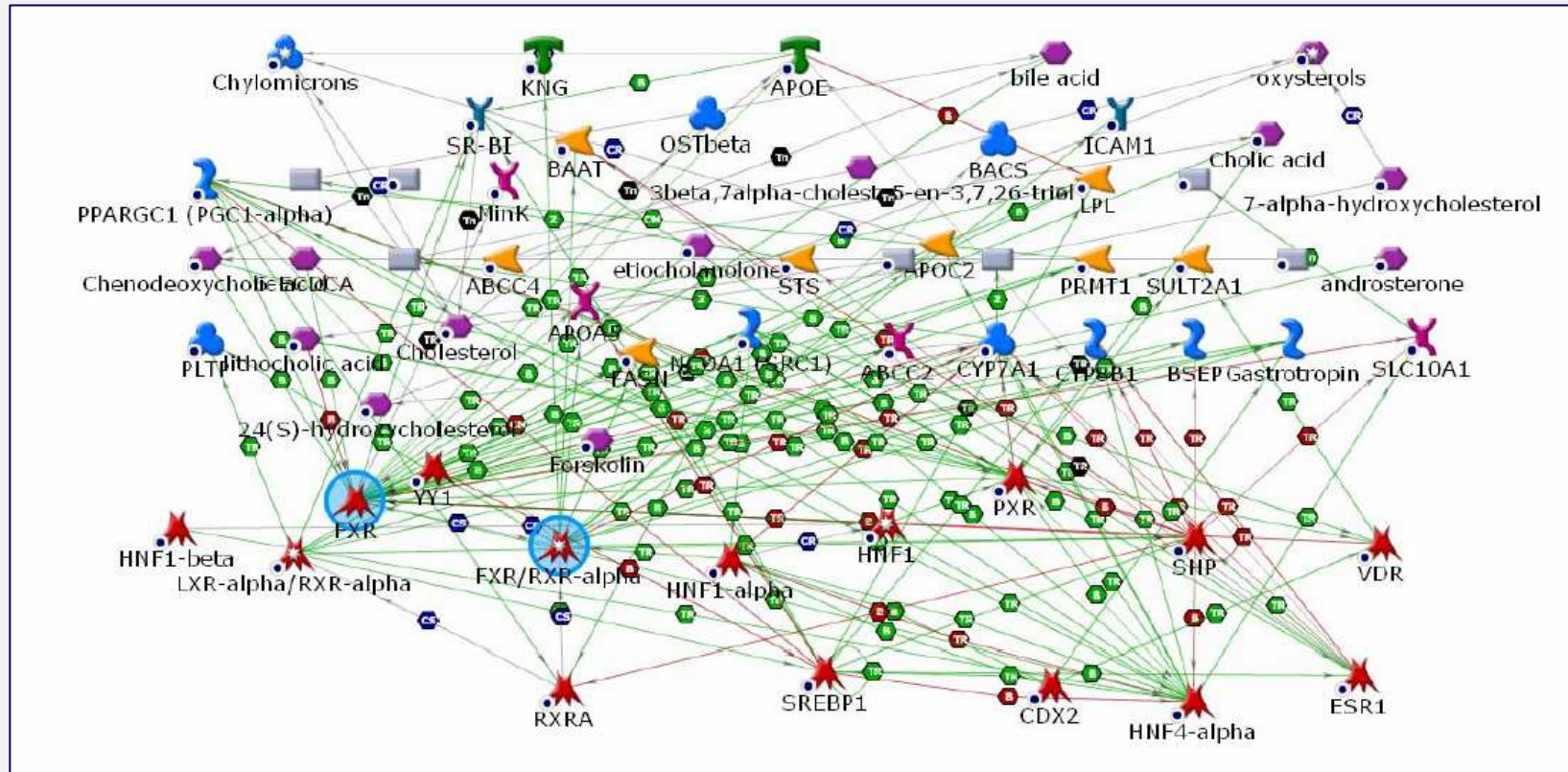


..... tested against the Target Universe



H. Kubinyi, Vienna 2006

A Network of Targets



EUROPIN – A European Pharmacoinformatics Initiative

EUROPIN brings together **six institutions** from five European Countries to develop a **joint PhD program on Pharmacoinformatics** in order to promote training and education of top level scientists in this field. It will provide a **platform for training through research** focusing on methods and applications used in computational drug design and development.

University of Vienna (coordinator)

Pompeu Fabra University, Barcelona

Gdansk University of Technology

Martin-Luther-University Halle-Wittenberg

University of Parma

University of Perugia



EUROPIN - Objective

Core objectives are

- to promote **creativity, competitiveness, employability and entrepreneurial spirit** of young scientists.

These will be achieved

- via strong emphasis on cooperation and **mobility of students and teaching staff,**
- by use of **intensive programmes and workshops** with strong participation of experts from **Pharmaceutical Companies,**
- and by extensive use of **web-based virtual training activities.**



EUROPIN – Project Outcome

Major project outcomes will be

- a **PhD curriculum in Pharmacoinformatics** mutually recognised by all partners. Students will earn a pool of expertise by combination of front end qualifications of different research groups.
- **Quality assurance** and continuous evaluation by an **external advisory board** will assure a top level program.
- Development and continuous enhancement of a **comprehensive e-learning platform** will allow to distributing and implementing the training activities throughout Europe



EUROPIN - Impact

The impact envisaged is creating a **pan-European framework for front end teaching and training** in the field of Pharmacoinformatics in order to increase the competitiveness and employability of European students and to **overcome** the current **bottlenecks** identified in the **Innovative Medicines Initiative**



EUROPIN – Concept I

- **International calls** for students, consensus decision made by supervisors
- **3 workshops/summer schools** for basic training and soft skills with strong participation from Industry
- **Annual Scientific Retreats** with participation from external advisors from Industry
- Workshop for **training of the supervisor** to guarantee equal standards throughout the consortium
- Extensive use of **internet technology**; eLearning platform, e-labbooks, regular electronic conferences for joint supervision, joint software licenses



EUROPIN – Concept II

- Create **e-courses and modules** which might be used also outside the consortium
- **Mobility as a strategic tool** to broaden hands-on expertise of students; coherent research plan to allow mobility of students and supervisor
- External **Scientific Advisory Board** to ensure top quality of the program and the students
- Input from **EFMC, Eufeps** and **IMI**
- **Implementation** starts autumn **2009**



EUROPIN - Vision

EUROPIN will be the **nucleus for a European network** of actors in the field of Pharmacoinformatics, which will

-) create a **framework for teaching and training** in the application of information technology in pharmacy
-) **map the future trends** in the use of pharmacoinformatics tools into a joint ongoing training through research activity
-) approach **European Pharmaceutical Industry** and SMEs by including the needs of Industry into the training
-) create a framework for the sustainability of a **European Pharmacoinformatics Network** active in training of early stage researchers.

