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EUFEPS Branch Office for
in-silico Systems and Learning



Pharmaceutical eLearning: Status and Perspectives

Norbert Haider





Outline

- Goals of eLearning
- Current activities
- Examples
- Networking
- Outlook



Goals of eLearning

- improvement of quality
- improvement of sustainability
- facilitating life-long learning
- tighter linking of education and research
- meta-skills: digital literacy etc.
- less realistic: reduction of teaching costs



Current activities

EUFEPS session at the 3rd PSWC, Amsterdam, April 2007

Pharmaceutical Sciences in-silico Learning Systems: Value and Availability

Stephen Moss, University of Bath (UK)

Computer applications in pharmaceutical education and research

Alexander Vögtli, University of Basel (CH)

pharmasquare - Blended Learning in Pharmaceutical Sciences

Thierry Langer, University of Innsbruck (AT)

PharmXplorer, an integrated platform for e-learning in pharmaceutical sciences

presentations available at

<http://merian.pch.univie.ac.at/eufeps/pswc2007/>

Current activities

**EUFEPS Branch Office for in-silico Systems and Learning:
European networking, coordination, *started operation on 2 July 2007***

<http://vienna.eufeps.org>



EUFEPS Vienna Branch Office - Home - Microsoft Internet Explorer

Adresse <http://vienna.eufeps.org/eufeps/index.php>

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EUROPEAN FEDERATION FOR PHARMACEUTICAL SCIENCES
Vienna Branch Office

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LOGIN FORM

Hi, Norbert Haider

SEARCH...

NEWSFLASH

The newly established "EUFEPS Branch Office for in-silico Systems and Learning" will start its operation by 1 July, 2007

Joomla!

POLLS

Do you think a Bachelor's degree in the European pharmaceutical sciences is ...

very useful

potentially useful

no real benefit

completely unnecessary

WHOS ONLINE

We have 1 member online

ANNOUNCEMENT: European Workshop

Written by NH
Wednesday, 30 May 2007

European Workshop on Computer-Aided Learning in the Pharmaceutical Sciences

24-25 Sept 2007, Vienna, Austria

This workshop will be jointly organised by the University of Vienna, Faculty of Life Sciences, and the European Federation for Pharmaceutical Sciences (EUFEPS). It will address all relevant aspects associated with the employment of computer-aided learning / eLearning / blended learning / in-silico learning in the pharmaceutical academic education. Target audience: lecturers and tutors from all pharmaceutical disciplines. The workshop will be held in English. Last Updated (Friday, 22 June 2007)

[Read more...](#)

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Current activities

operation/coordination of eLearning projects on

- **local level:** Faculty of Life Sciences, Univ. Vienna
 - large-scale deployment of blended learning in the pharmaceutical study-entrance phase
 - 6 pharmaceutical departments involved
 - funding: approx. 100.000,- € (2 years)
 - main investment: human resources → eTutors
- **national level:** PharmXplorer
 - universities of Graz, Innsbruck, and Vienna
 - all pharmaceutical disciplines involved
 - funding: approx. 450.000,- € (3 years)
 - extension to post-graduate training



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Examples: PharmXplorer

- information database of marketed drugs (Austria)
- eLearning modules for different levels
- teaching repository for course materials
- post-graduate education
- training courses for community pharmacy professionals
- collaboration with the Chamber of Pharmacists' educational programme
- community area / discussion forum
- > 4000 registered users

Examples: PharmXplorer



PharmXplorer - Netscape

Datei Bearbeiten Anzeigen Gehe Lesezeichen Extras Fenster Hilfe

Zurück Weiterleiten Neu laden Stopp <http://www.pharmxplorer.at/pxp.at/> Suchen Drucken

PharmXplorer

PharmXplorer®

News Beschreibung Anmeldung

Basic
eLearning für Schulen
Vorbereitung auf das Studium

Academic
Online Lernen für
StudentInnen

Scientific
Unterstützung für
Lehrende und Vortragende

Office
Beste Unterstützung für
die Arbeit in der Apotheke

Focus
Einzigartige Form der
Weiterbildung für ApothekerInnen

Advance Jetzt Online!
Modernste Ausbildung für
AspirantInnen

 Pharmazeutische Gehaltskasse

 Österreichische Apothekerkammer

 Apothekerverlag

Probleme bei Zugang oder Verwendung? [Mail an den Support!](#)
Copyright © 2006 Institut für multimediale Pharmazie, code / design roman weinberger



Examples: PharmXplorer

The screenshot shows a Netscape browser window titled "PharmXplorer Academic". The address bar contains the URL "http://www.pharmxplorer.at/academic.php". The main content area features the "PharmXplorer" logo, which includes a red pill icon and the text "Hypermedialer Lern-Klick". Below the logo are six navigation buttons arranged in a 2x3 grid:

- Grundlagen**: Basiswissen für alle StudentInnen der Pharmazie. Includes the text "2+2".
- Vorlesungen**: Unterlagen zu Lehrveranstaltungen in Graz, Wien und Innsbruck.
- Labor**: Informationen für das praktische Arbeiten im Labor.
- Information**: Informationen zu allen Bereichen des pharmazeutischen Wissens.
- Lernplattform**: Online Lehrveranstaltungen und Selbstevaluationen.
- Community**: Kommentare, Feedback etc.

At the bottom of the page are three buttons: "Passwort", "Hilfe / Download", and "Abmelden". The browser's status bar at the bottom shows various system icons.

Examples: PharmXplorer



The screenshot shows the PharmXplorer web application running in a Netscape browser. The browser window title is "PharmXplorer Informationsplattform -Netscape". The address bar shows the URL "http://www.pharmxplorer.at/pharmxp/px/index1.php?". The browser interface includes a menu bar with "Datei", "Bearbeiten", "Anzeigen", "Gehe", "Lesezeichen", "Extras", "Fenster", and "Hilfe". Below the menu bar are navigation buttons: "Zurück", "Weiterleiten", "Neu laden", and "Stopp". A search bar with a "Suchen" button and a "Drucken" button are also visible.

The main content area features a red header with the "PharmXplorer" logo and the text "Informationsplattform". Below the header is a navigation menu with links: "Stichwortsuche", "Anatomie", "Drogen", "Physiologie", "Struktursuche", "ATC", "Arzneistoffe", "Indikationen", and "Wirkstoffgruppen".

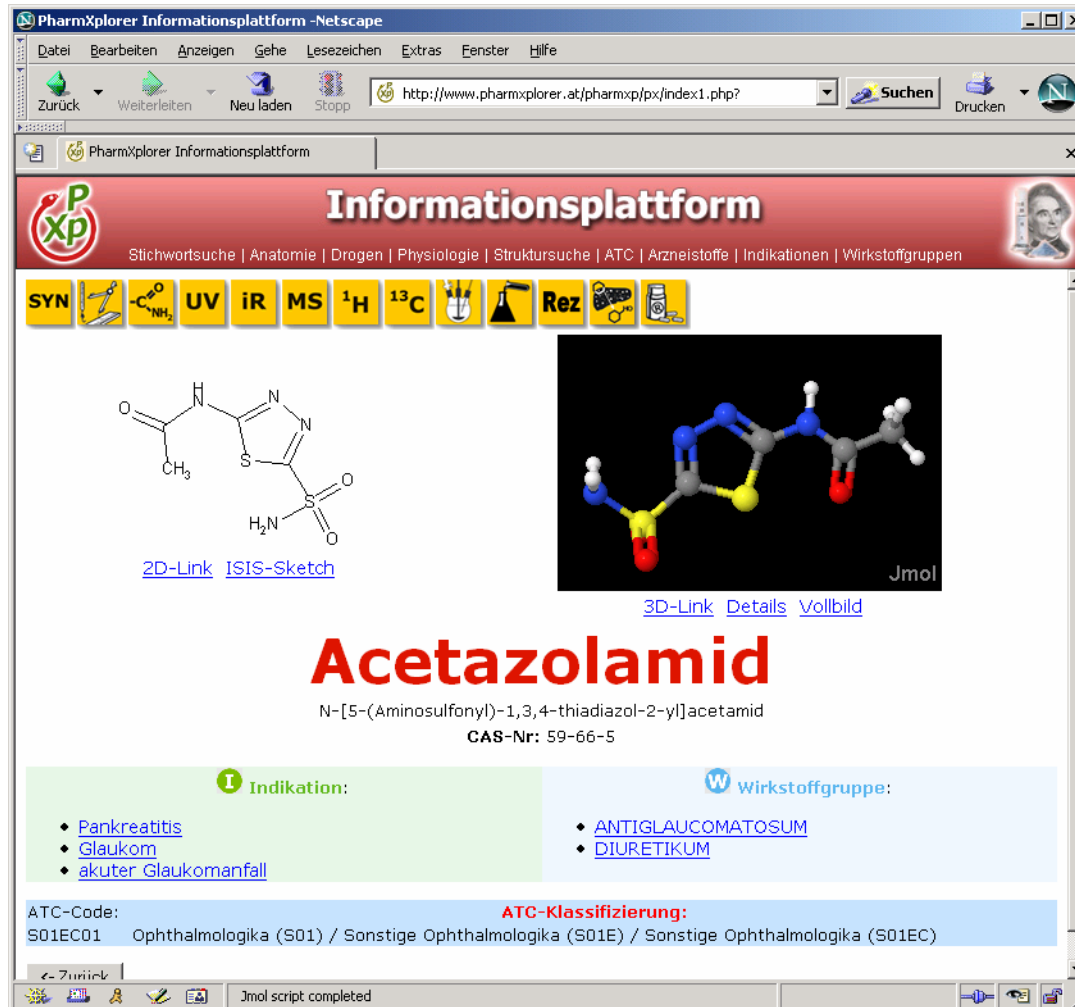
The main content area displays eight interactive buttons arranged in two rows:

- Row 1: "Suche" (with a magnifying glass icon), "Anatomie" (with a spine icon), "Drogen" (with a plant icon), "Physiologie Pathophysiologie" (with a green cross icon), and "Struktursuche" (with a magnifying glass over a molecular structure icon).
- Row 2: "ATC" (with a blue caduceus icon), "Arzneistoffe" (with a pile of pills icon), "Indikationen" (with a human figure icon), and "Wirkstoffgruppen" (with a molecular structure icon).

At the bottom right of the main content area is a button labeled "Einstellungen".

The browser's status bar at the bottom shows various system icons and a taskbar.

Examples: PharmXplorer



PharmXplorer Informationsplattform -Netscape

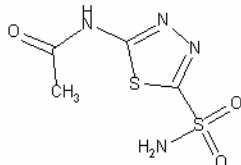
http://www.pharmxplorer.at/pharmxp/px/index1.php?

PharmXplorer Informationsplattform

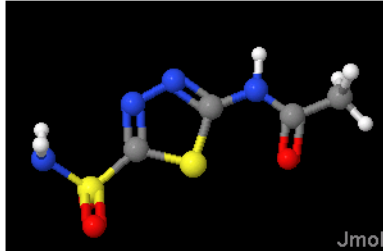
Informationsplattform

Stichwortsuche | Anatomie | Drogen | Physiologie | Struktursuche | ATC | Arzneistoffe | Indikationen | Wirkstoffgruppen

[SYN](#)
[UV](#)
[iR](#)
[MS](#)
[¹H](#)
[¹³C](#)
[Rez](#)



[2D-Link](#) [ISIS-Sketch](#)



[3D-Link](#) [Details](#) [Vollbild](#)

Acetazolamid

N-[5-(Aminosulfonyl)-1,3,4-thiadiazol-2-yl]acetamid

CAS-Nr: 59-66-5

I Indikation:

- [Pankreatitis](#)
- [Glaukom](#)
- [akuter Glaukomanfall](#)

W Wirkstoffgruppe:

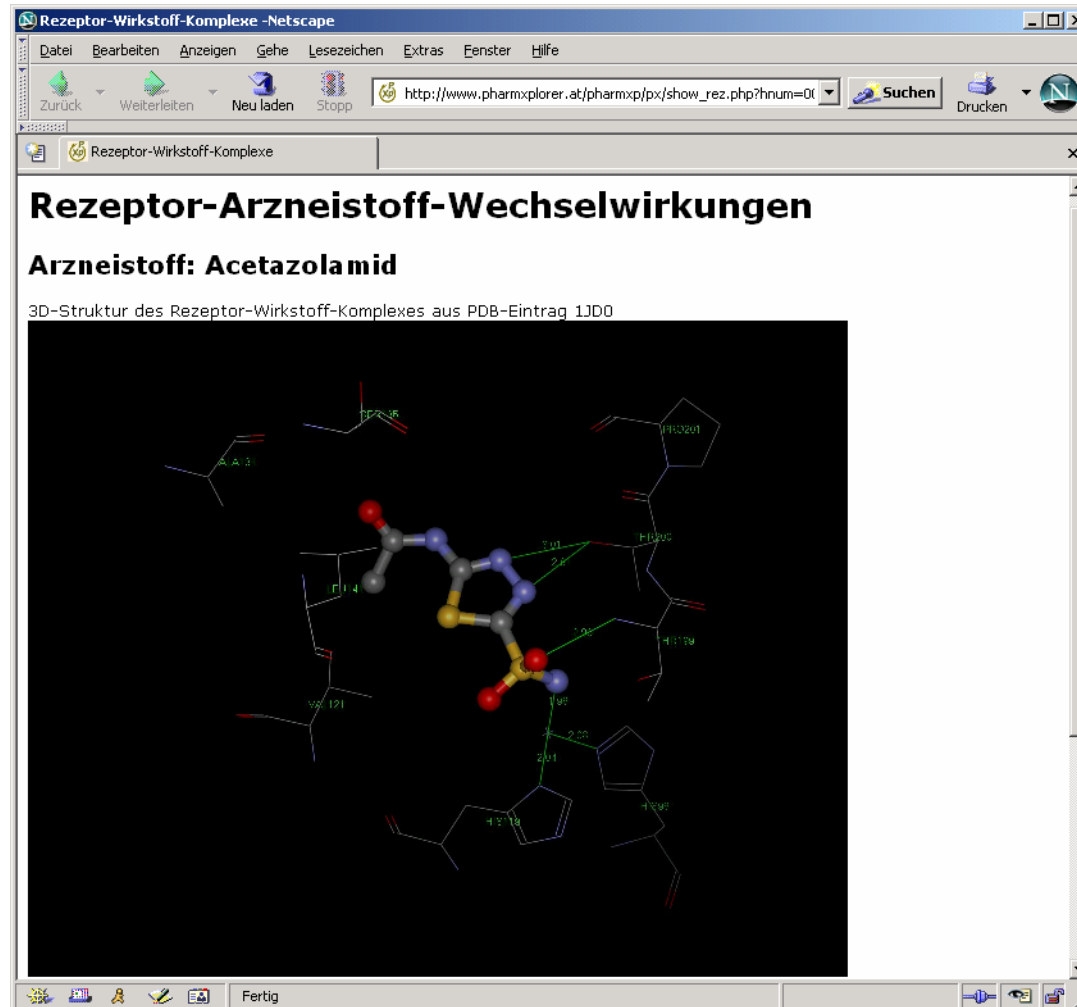
- [ANTIGLAUCOMATOSUM](#)
- [DIURETIKUM](#)

ATC-Code: S01EC01 Ophthalmologica (S01) / Sonstige Ophthalmologica (S01E) / Sonstige Ophthalmologica (S01EC)

ATC-Klassifizierung:

Jmol script completed

Examples: PharmXplorer

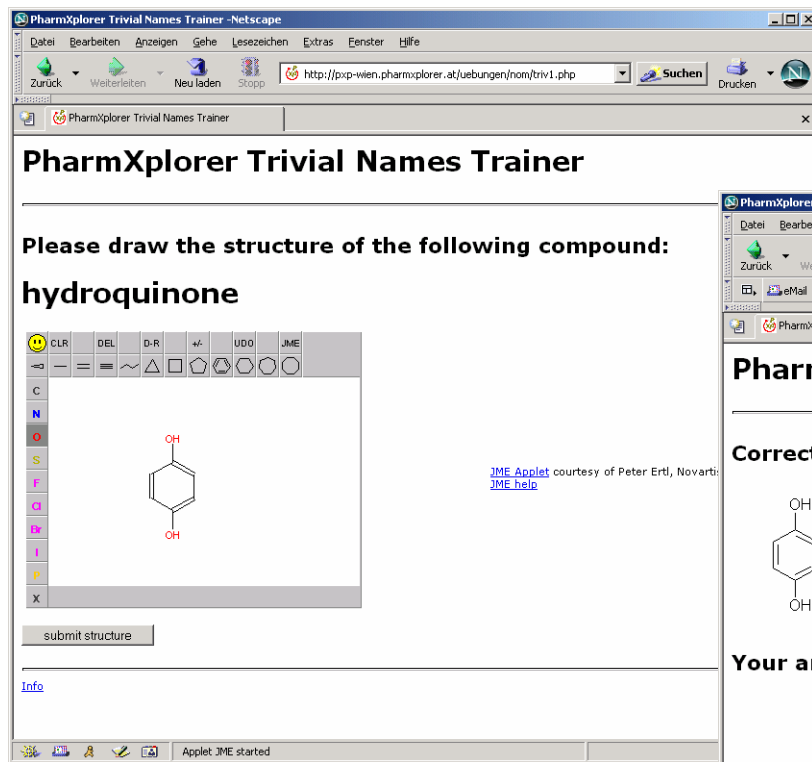


Examples: PharmXplorer

The screenshot displays the PharmXplorer interface with three overlapping windows:

- Top-left window:** Shows the chemical structure of Acetazolamid. Below the structure, it lists functional groups: "Funktionelle Gruppen: sekundäres Carbonsäure, Sulfonsäure-Derivat, Sulfonamid, Aromatische Verbindung, Heterocyclus". At the bottom, there are buttons for "Ähnliche Strukturen" and "Suche".
- Top-right window:** Displays the "INFRARED SPECTRUM : Acetazolamid" from a "PERKIN-ELMER 2000 FT-IR : G". It shows a plot of TRANSMITTANCE vs. 1/CM with a peak at X:1685 and Y:0.251. A red vertical line is drawn at 0.800 on the x-axis.
- Bottom window:** Shows the synthesis of Acetazolamid. The reaction scheme is: $2 \text{NH}_4\text{SCN} + \text{H}_2\text{N}-\text{NH}_2 \rightarrow \text{H}_2\text{N}-\text{C}(=\text{S})-\text{NH}-\text{C}(=\text{S})-\text{NH}_2 \xrightarrow{\text{COCl}_2} \text{H}_2\text{N}-\text{C}(=\text{S})-\text{NH}-\text{C}(=\text{S})-\text{SO}_2\text{Cl} \xrightarrow{\text{NH}_3} \text{Acetazolamid}$. A second reaction scheme shows: $\text{H}_2\text{N}-\text{C}(=\text{S})-\text{NH}-\text{C}(=\text{S})-\text{SH} \xrightarrow{(\text{CH}_3\text{CO})_2\text{O}} \text{H}_3\text{C}-\text{C}(=\text{O})-\text{NH}-\text{C}(=\text{S})-\text{NH}-\text{C}(=\text{S})-\text{SH} \xrightarrow{\text{Cl}_2} \text{H}_3\text{C}-\text{C}(=\text{O})-\text{NH}-\text{C}(=\text{S})-\text{NH}-\text{C}(=\text{S})-\text{SO}_2\text{Cl} \xrightarrow{\text{NH}_3} \text{Acetazolamid}$.

Examples: PharmXplorer



PharmXplorer Trivial Names Trainer - Netscape

Datei Bearbeiten Anzeigen Gehe Lesezeichen Extras Fenster Hilfe

Zurück Weiterleiten Neu laden Stopp <http://pwp-wien.pharmxplorer.at/uebungen/nom/triv1.php> Suchen Drucken

PharmXplorer Trivial Names Trainer

PharmXplorer Trivial Names Trainer

Please draw the structure of the following compound:
hydroquinone

☺ CLR DEL D-R ← → UDD JME

C
N
O
S
F
Cl
Br
I
P
X

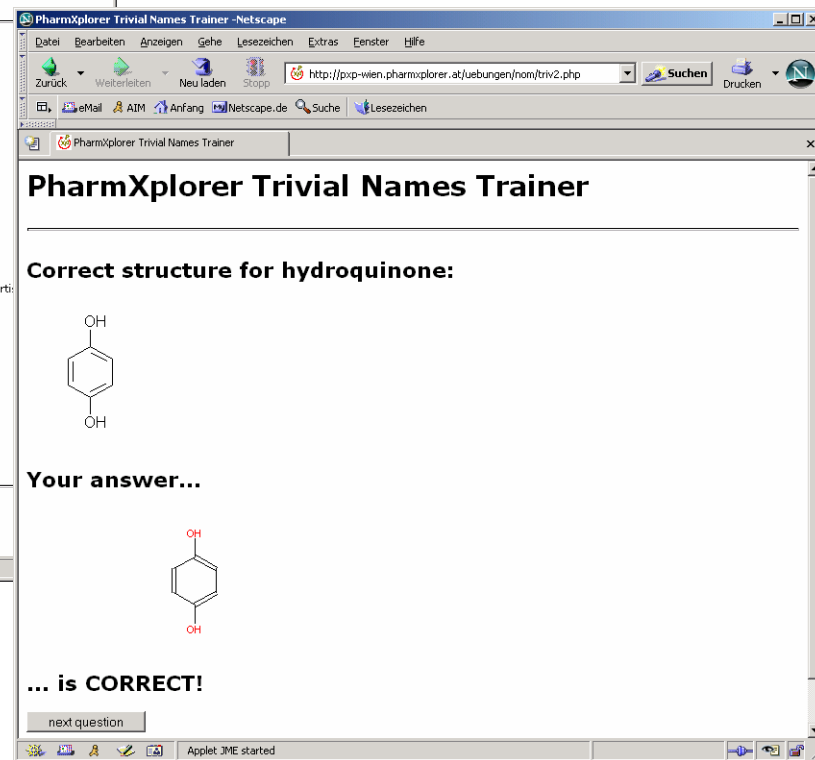
Oc1ccc(O)cc1

[JME Applet](#) courtesy of Peter Ertl, Novartis
[JME help](#)

submit structure

[Info](#)

Applet JME started



PharmXplorer Trivial Names Trainer - Netscape

Datei Bearbeiten Anzeigen Gehe Lesezeichen Extras Fenster Hilfe

Zurück Weiterleiten Neu laden Stopp <http://pwp-wien.pharmxplorer.at/uebungen/nom/triv2.php> Suchen Drucken

eMail AIM Anfang Netscape.de Suche Lesezeichen

PharmXplorer Trivial Names Trainer

PharmXplorer Trivial Names Trainer

Correct structure for hydroquinone:

Oc1ccc(O)cc1

Your answer...

Oc1ccc(O)cc1

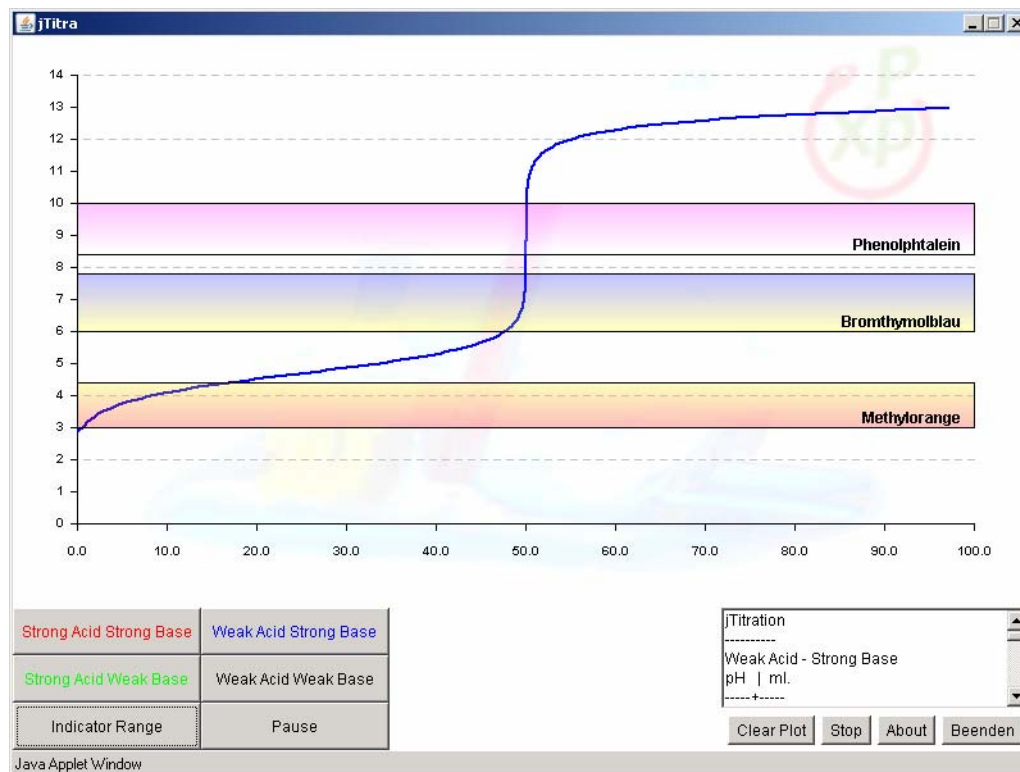
... is CORRECT!

next question

Applet JME started



Examples: PharmXplorer





Examples: PharmXplorer

- PDF documents for lectures originating from the three major Austrian universities
- links to recent literature covering hot news from pharmaceutical development
- more than 400 animated graphics
- video clips of standard laboratory techniques
- interactive training elements
- regular updates
- serves as a portal throughout the curriculum and also after graduation



Networking

primary tasks of EUFEPS Vienna Branch Office:

- bring people together who are active in pharmaceutical eLearning
- establish communication facilities (mailing list, forum,...)
- organise workshops and meetings
- locate best-practice examples, increase visibility
- build a catalogue of resources
- assist to establish European collaborations in pharmaceutical eLearning

<http://vienna.eufeps.org>



Outlook

current and upcoming developments:

- application of Web 2.0 technologies
 - technical features: AJAX, ...
 - mesh-up techniques
 - video/audio streaming: tele-lecturing, -conferencing, podcasting
 - collaborative tools: Weblog, Wiki, ...
- on-line communities, social networks
- improvement of didactic concepts
- intensified co-operation



Outlook

eLearning will not remain restricted to undergraduate and graduate education and training, but it is developing into Science Communication

- closer integration of research and education
- new facilities for efficient peer-to-peer communication of scientific content
- better science-to-public communication
- extension towards pre-university audience