Fig. 1.

From the same patient with HIV:
CaS-Fluconazole susceptive strain
CaR-Fluconazole resistant strain
CaDEL-*MDR1* Deleted strain from CaR
CaCOM-*MDR1* Complementary strain from CaDEL
Cerulenin-special substrate of *MDR1*

beberine   jatrorrhizine   palmatine

chelerythrine   sanguinarine   Proflavine

Fig.2a.

YEPD   berberine(64ug/ml)
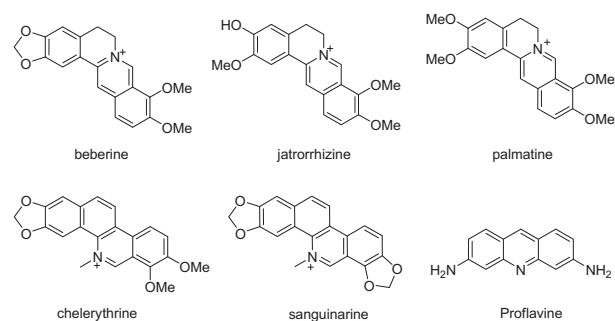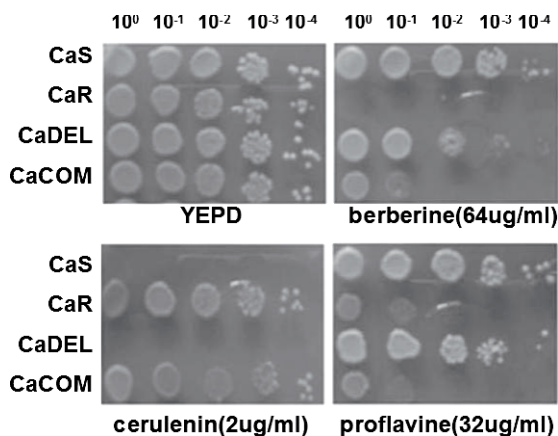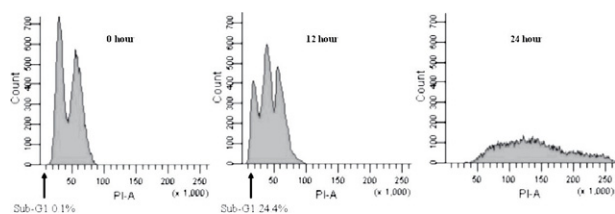
cerulenin(2ug/ml)   proflavine(32ug/ml)

Fig.2b.

Fig.2c.

PL-04 Communicable diseases surveillance lessons learned from developed and developing countries: literature review

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Background: Surveillance of infectious diseases is recognized as the cornerstone of public health decision-making and practice. The aim of the evaluation of communicable diseases surveillance systems (CDSS) is ensuring that communicable diseases are monitored efficiently and effectively. The aim of this paper is to reflect on the experiences of both developed and developing countries in the evaluation of CDSS in order to learn lessons from these experiences to improve systems everywhere.

Methods: A literature review of studies published in English in PubMed and data bases of the World Health Organization (WHO), and Center of Diseases Control (CDC) from 1981 to 2007 was undertaken assessing CDSS. The studies were divided into those from developed and developing countries.

Results: A total of 32 studies were included, 20 from developed and 12 from developing countries. Both developed and developing countries faced difficulties in CDSS. Studies from the developed countries have been analyzed based on the quality of the system alone. In developing countries, most of the studies have been on the integrated diseases surveillance (IDSR) and have been performed shortly after the adoption of the IDSR. Thus it might be too early to make a fair evaluation. Some of the systems over-centralized, while some lacked private health sector involvement in the system. Further, some of the systems were affected by conflicts and civil wars which are common problems in developing countries.

Conclusion: None of the countries had ideal CDSS. The strategy of integrated diseases surveillance seems to be functioning well especially in Africa.

PL-05 MIDAS Public Disease Model

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The MIDAS* Public Disease Model is an agent based model (ABM) that uses synthetic data to simulate and describe influenza transmission within specific U.S. geographic areas. Each person in the region of interest is an agent and each agent is described by a number of demographic traits that define the social network interactions that the agents are part of. The agent traits that compromise the synthetic data were developed from US census, National Education Association and a provider of business information, InfoUSA, data sources. They represent the U.S. population at the time of the 2000 Census. The data include:

- A household in every Census tract that corresponds to a household in the 2000 Census.
- Persons who live in those households within the tracts such that their important Census tract level demographic characteristics match those of the 2000 Census.
- Locations of all public and private schools as well as pre-school and daycare facilities in the US that match a variety of publicly available sources. Location, enrollment and grade-level information are also defined.
- An age-specific school assignment plan that defines the schools attended by each school eligible person in the population.