
Résumé

**IN VITRO AND IN VIVO ACTIVITY
OF NYSTATIN AGAINST
YEAST-LIKE ORGANISMS**
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**1. Growth inhibitory concentration of nystatin
against various species of yeast-like fungi**

An *in vitro* experiment was made by inoculating 1 loopful of suspension of test organisms into several series of test tubes containing glucose-peptone water with nystatin in different concentrations. After 48 hour incubation at 37°C the growth was read. The minimum inhibitory concentration was 5~10 u/ml in *Candida albicans*; 5 u/ml in *C. tropicalis*, *Torulopsis glabrata*, *Rhodotorula flava*, *R. mucilaginosa* and *R. aurantiaca*, 20 u/ml in *C. parapsilosis*, *C. solani* and *C. pelliculosa*; and 2.5 u/ml in *Cryptococcus laurentii*.

2. *In vitro* effect of nystatin

It has already been proved by us that in mice feces definite yeast-like fungus, *Torulopsis glabrata*, are found in almost constant and exceedingly numerous numbers, quite contrary to other species such as *Candida*, *Rhodotorula* and *Cryptococcus*. On the basis of this fact, nystatin in various doses of 1 to 50,000 u was, as a test *in vivo*, given orally and consecutively for 5 days. After 4 days incubation of the mice feces on SABOURAUD medium the number of the colonies developed on the medium was measured. The observation indicated that 1 u nystatin produced no inhibitory effect whereas more than 5 u gave a remarkable effect, and that in accordance with the increasing of dose of nystatin its action was larger and moreover the duration of the action prolonged.

**INVESTIGATION OF CANDIDA
WITH THE FLUORMICROSCOPE
(PART II) INFLUENCE OF
VARIOUS CHEMICALS AND
ANTIBIOTICS ON *C. ALBICANS***
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We reported previously (Chemotherapy 6(2):103~106, Mar. 1958) that we recognized living *C. albi-*

cans stained with the concentration of acridinorange (abbr. AO) emitted greenish fluorescence while dead ones reddish fluorescence, which was also confirmed by the culture of *C. albicans*.

Applying the above mentioned method, we succeeded to judge the effect of various chemicals and antibiotics on *C. albicans* by staining *C. albicans* contacted with these drugs with AO and observing the life and death of *C. albicans* with the fluormicroscope.

**EXPERIMENTAL STUDIES ON
BIOLOGICAL EFFECTS
OF KANAMYCIN**
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Biological effects of kanamycin on dogs were investigated by means of intramuscular injection and clinical response caused by this antibiotic was checked by routine function tests together with the necropsy. The doses used for the experiments were ranged from 200 mg to 40 mg per kg per day, and given either continually or intermittently. The results obtained may be summarized as follow:

1. One of the toxic effects of kanamycin found in the kidney was a type of "acute tubular necrosis" and also confirmed by clinical renal function tests prior to necropsy. The increase in blood NPN was a remarkable finding of the tests, *e.g.*, extreme figures can be found in two animals which died during the course of the designed experimental period, as 217.6 mg / dl, 187.3 mg / dl respectively.

2. Abnormal patterns in renal function tests and histologic damages were almost parallel.

3. The severity of the renal damages depends on the amount of kanamycin given to the animal, with some exceptional cases, in which biological individuality or renal conditions prior to the commencement of experiment may be responsible.

**EXPERIMENTAL STUDIES
ON THE
ALLERGY OF STREPTOMYCIN**
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The intracutaneous hypersensitivity to streptomycin of rabbits was studied. The sensitization was done by injecting intracutaneously or intramuscularly 20 mg/kg of saline diluted dihydrostreptomycin (DHSM) or the same dosis of DHSM plus Freund's adjuvant for 15 days daily in 5 rabbits, and two or three times a week for 4 weeks in 13 rabbits.

The provocation was done 15 days or a month after the sensitization was over. The procedures of the provocation were :

1. only the intracutaneous injection of 0.1 ml of 1 : 10 saline diluted DHSM (10mg).
2. the same injection after premedication of intramuscular injection of pilocarpin, atropin or adrenalin.
3. the intramuscular injection of 120 mg of saline diluted DHSM and the intracutaneous injection of pilocarpin, atropin or adrenalin.

The results of provocation were as follows :

A) When DHSM was injected intracutaneously alone or after premedication of pilocarpin no reaction was observed.

B) But the intracutaneous injection of DHSM after premedication of atropin or adrenalin caused the reddening and the induration on the site where streptomycin was injected.

The premedication of adrenalin resulted more reddish than that of atropin.

C) When DHSM was injected intramuscularly, no reaction was observed in the site of DHSM-injection.

D) But in the site of intracutaneous injection of adrenalin and atropin the localized reddening and induration was observed. Pilocarpin was non-effective in this case too.

E) the sites, where reddening and induration were observed, were examined histopathologically. Significant differences were confirmed as above-mentioned.

From the above-mentioned, streptomycin allergy seems to have some relationship with adrenalin or adrenalin like substance.