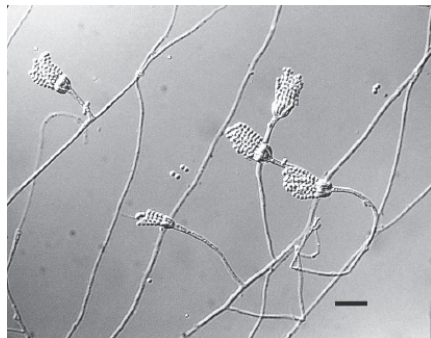


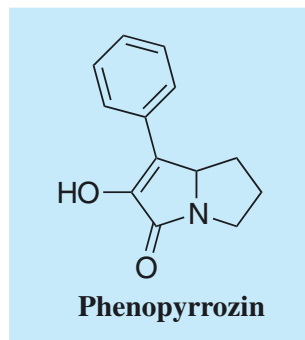
Phenopyrrozin

1. Discovery, producing organism and structure^{1,2)}

Phenopyrrozin was isolated from the culture broth of *Penicillium* fungal strain FO-2047 and recognized as a radical scavenger by a lipid peroxidation assay. The producing strain also produces gliotoxin²⁾.



Penicillium sp. FO-2047
Bar: 20 μ m



2. Physical data

White powder. $C_{13}H_{13}NO_2$; mol wt 215.25. Sol. in DMSO, MeOH, $CHCl_3$. Insol. in H_2O .

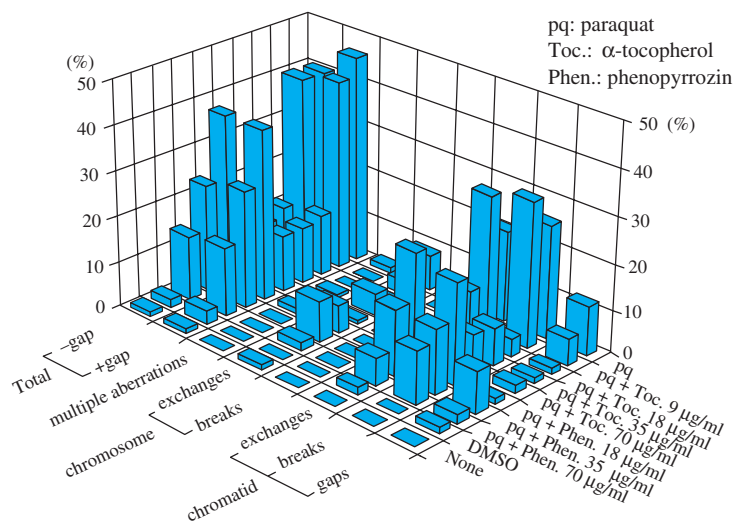
3. Biological activity^{1,3)}

1) Radical scavenger activity¹⁾

Free radicals are associated with many diseases, including ischemia, trauma, and inflammation. Phenopyrrozin inhibited the peroxidation of lipids in rat liver microsomes induced by dichromate *in vitro*. Phenopyrrozin also suppressed the mutation of Don-D6 cells induced by paraquat over the range of 35–70 μ g/ml.

Effect of phenopyrrozin
on dichromate-induced
lipid peroxidation

| Phenopyrrozin (μ g / ml) | Inhibition of lipid peroxidation |
|----------------------------------|-------------------------------------|
| 3.13 | –1.1% |
| 6.25 | 23.5 |
| 12.5 | 19.1 |
| 25 | 31.8 |
| 50 | 39.3 |
| 100 | 59.6 |



Effect of phenopyrrozin on chromosomal aberrations
induced by paraquat on Don D-6 cells

2) Antimicrobial activity¹⁾

Phenopyrrozin showed antimicrobial activity at a high concentration (70 μ g/disc, paper disc method) against *Micrococcus luteus* and *Acholeplasma laidrawii*.

3) Other biological activities³⁾

Phenopyrrozin showed antimalarial activity with IC_{50} of 3.95 $\mu\text{g/mL}$, antitubercular activity with MIC of 0.0122 $\mu\text{g/mL}$, and antibacterial and antifungal activities against *Bacillus cereus*, and antifungal activity against *Candida albicans* with IC_{50} of 50 and 12.48 $\mu\text{g/mL}$, respectively. Phenopyrrozin showed cytotoxicities against MCF-7, KB, NCI-H187 and Vero cells with IC_{50} of 0.81, 2.88, 0.97 and 2.19 $\mu\text{g/mL}$, respectively.

4. References

1. [595] K. Shiomi *et al.*, *J. Antibiot.* **48**, 1413-1418 (1995)
2. [494] D. Van Der Pyl *et al.*, *J. Antibiot.* **45**, 1802-1805 (1992)
3. C. Intaraudom *et al.*, *Tetrahedron Lett.* **54**, 744-748 (2013)