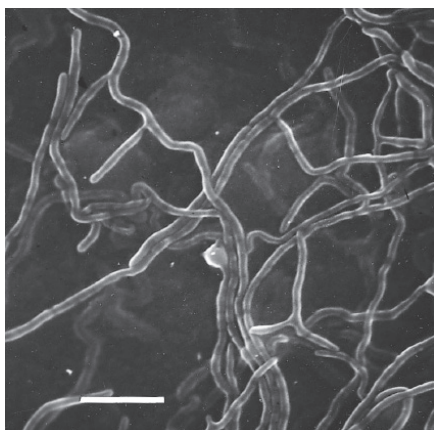


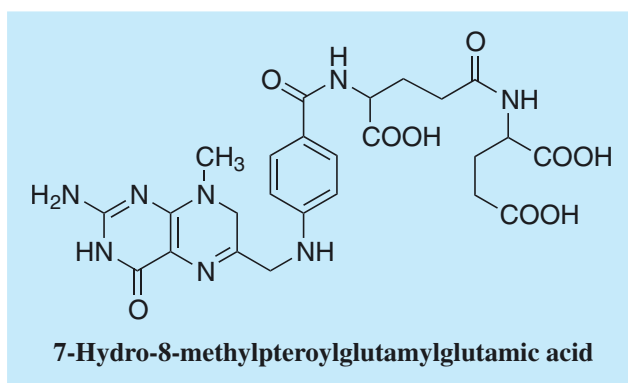
# 7-Hydro-8-methylpteroylglutamylglutamic acid

## 1. Discovery, producing organism and structure<sup>1,2)</sup>

7-Hydro-8-methylpteroylglutamylglutamic acid (HMPGG) was isolated from the culture broth of *Promicromonospora sukumoe* strain SK2049<sup>T</sup> while screening for antifolates. A folate-requiring bacterium, *Enterococcus faecium*, was used as an indicator strain. The taxonomic study of the producing strain led us to establish a new species of the genus *Promicromonospora* and to name it *P. sukumoe*. [See also “*Promicromonospora sukumoe*” (p. 403)].



*Promicromonospora sukumoe* SK-2049<sup>T</sup>



## 2. Physical data<sup>1)</sup>

Yellowish powder. C<sub>25</sub>H<sub>30</sub>N<sub>8</sub>O<sub>9</sub>; mol wt 586.21. Sol. in alkaline H<sub>2</sub>O. Parcially insol. in MeOH, EtOAc, CHCl<sub>3</sub>.

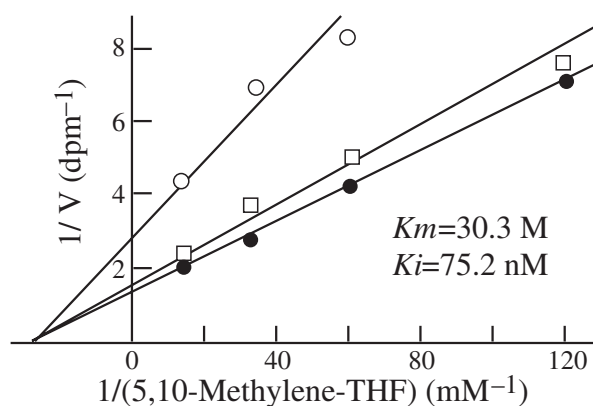
## 3. Biological activity<sup>1)</sup>

### 1) Antimicrobial activity

HMPGG inhibits growth of *E. faecium* in a folate assay medium. It is inactive against other bacteria and fungi. Growth inhibition of *E. faecium* is reversed when supplemented with folate related compounds.

### 2) Mode of action

HMPGG inhibits TMP synthases from *E. faecium* (*K<sub>i</sub>* 5.7 nM), *B. subtilis* (10.9 nM) and Ehrlich ascites carcinoma cells (75.2 nM).



Lineweaver-Burk plots for inhibition of TMP synthase from Ehrlich ascites carcinoma cells by HMPGG.

## 4. References

- [363] J. Murata *et al.*, *J. Antibiot.* **40**, 251-257 (1987)
- [387] Y. Takahashi *et al.*, *J. Gen. Appl. Microbiol.* **33**, 507-519 (1987)