J. Hyg., Camb. (1964), **62**, 351
Printed in Great Britain

The relationship of a type of *Mycoplasma* isolated from tissue cultures to a new human oral *Mycoplasma*

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(*Received* 10 *March* 1964)

INTRODUCTION

In a previous communication (Lemcke, 1964), four strains of *Mycoplasma* isolated from tissue cultures and one from a line of Eaton agent (*M. pneumoniae*) were found to be serologically related to one another but distinct from sixteen other species or serotypes. It was suggested that this group constituted a new serological type or species. As these strains did not belong to any of the species of known origin with which they were compared, there was no indication of the source from which the tissue cultures or the *M. pneumoniae* culture were contaminated.

More recently a comparison of these strains with four others has thrown some light on their origin. Of these new strains, three were described by Herderscheê, Ruys & van Rhijn (1963) as a new human oral *Mycoplasma*. The fourth, although isolated from a culture of *M. pneumoniae*, was known to be identical with strains occurring in the human oropharynx (Chanock, personal communication).

METHODS

The five strains previously described (Lemcke, 1964) were 823, 826, 837 and 844 from tissue cultures and BM from a culture of *M. pneumoniae* (PI 898) propagated in primary monkey kidney cells. Three of the new strains were isolated by Herderscheê *et al.* (1963); H and S from the throats of two patients with scarlatina and E from a tissue culture. The fourth, 898/2, was isolated by Dr R. M. Chanock (Bethesda) from the same source as BM.

Complement fixation and gel diffusion tests were carried out as described by Lemcke (1964). Antigens for gel diffusion tests were prepared by the ultrasonic treatment of washed saline suspensions, using a Branson S-75 Sonifier at 20 kc./sec. for 10 min.

RESULTS

In complement-fixation tests, antigens of strains H, S, E and 898/2 reacted to titre or to $\frac{1}{2}$ of the titre with antisera against the 'tissue culture' strains 823 and 837. In contrast, these antigens reacted only to 1/32 or less of the homologous titre with antisera against strains of *M. hominis* type 1, *M. pneumoniae*, *M. salivarium*, *M. fermentans*, *M. pulmonis*, *M. arthritidis*, *M. neurolyticum*, *M. mycoides* var. *mycoides*, *M. bovigenitalium*, *M. agalactiae*, *M. laidlawii*, *M. gallisepticum*, *M. gallinarum* and three other serotypes represented by the strains Navel (human), A 36 (non-pathogenic avian) and pp. goat (contagious caprine pleuropneumonia).

In gel diffusion tests, reactions of identity were given by antigens of 837, BM, H, S, E and 898/2 with antiserum against 837.

The new strains, like the five previously examined, were distinctly filamentous when grown in liquid medium.

DISCUSSION

The four 'tissue culture' strains, the two contaminants from *M. pneumoniae* PI 898 and the three strains belonging to the new oral type described by Herderscheê *et al.* (1963) are not only indistinguishable serologically but constitute a group distinct from sixteen other serological types or species already described.

As the evidence suggests that this type is primarily an inhabitant of the human mouth and throat, it is possible that the tissue cultures were contaminated by droplet infection during maintenance and transfer. If one tissue culture can be contaminated from another maintained in the same laboratory, the infection of only one cell line could serve as a reservoir for the contamination of others. In view of the failure to find mycoplasma in sera used in tissue culture media (Rothblat & Morton, 1959; Coriell, Fabrizio & Wilson, 1960; Klieneberger-Nobel, unpublished observations) it is unlikely that, as suggested by Herderscheê *et al.* (1963), the source of the contaminant was human serum.

It was suggested (Lemcke, 1964) that BM, the first contaminant of *M. pneumoniae* examined, was present in one of the tissue cultures used for passage. Now that the relationship of BM and 898/2 to a human oral mycoplasma has been demonstrated, it seems more likely that BM was present together with *M. pneumoniae* in the sample taken from the patient's throat.

SUMMARY

A previously unidentified type of *Mycoplasma* found as a contaminant in tissue cultures and in a culture of Eaton agent, is identical with a newly recognized human oral type.

I am indebted to Drs Herdersheê and Chanock for sending me their cultures and relevant information.

Note. Since this paper was submitted, the name *Mycoplasma orale* has been suggested for the new oral type (Herderscheê & Taylor-Robinson, personal communication).

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