Letter to the Editor

Listeria monocytogenes CAMP Reaction

As highlighted by a Letter to the Editor recently published in Clinical Microbiology Reviews (8), there is controversy over reported results of the CAMP reaction of Listeria monocytogenes with Rhodococcus equi.

On the basis of previous reports (6, 7, 10, 11), Bergey's Manual of Systematic Bacteriology (9) defined L. monocytogenes and Listeria ivanovii as CAMP negative and CAMP positive, respectively, with R. equi. This test was thereafter adopted as a fundamental criterion for the identification of the hemolytic Listeria species (5). The problem is that a number of investigators, including us, found that hemolytic L. monocytogenes strains give a positive synergistic hemolysis reaction with R. equi (1–4, 12–14). We have observed (13) that a circular or racket-shaped well-defined zone of complete hemolysis develops (with different degrees of intensity depending on the hemolytic activity of the strain) from a streak of L. monocytogenes in the vicinity of R. equi. This lytic phenomenon could be distinguished from that of L. ivanovii, which is typically semicircular or shovel shaped.

However, in certain cases (especially when highly hemolytic L. monocytogenes strains are tested and when the test is performed on blood agar instead of washed erythrocyte agar), the R. equi CAMP reactions of both Listeria species are similar and can be confused.

The discordant results obtained by different laboratories might be related to the fact that strains of R. equi may differ in their ability to interact with L. monocytogenes in a CAMP test (4). However, we used the same strain of R. equi (CIP [Collection de l'Institut Pasteur] 5869) with which others currently find negative results with L. monocytogenes (7).

For this reason, we requested a new subculture of strain CIP 5869 from Jocelyne Rocourt of the Listeria Reference Laboratory, Institut Pasteur, Paris. With the new strain, the synergistic hemolytic reactions of L. monocytogenes were definitely lower in intensity, so that most strains (especially those that were weakly hemolytic) could be considered CAMP negative after 24 h of incubation. After 48 h, however, a weak CAMP reaction could be observed. These findings indicate that not only do different strains of R. equi differ in the CAMP property but even subcultures of the same strain do. This may explain the conflicting results reported with this test.

In light of these observations and in the absence of further standardization, the results of the CAMP test with R. equi as presently defined for Listeria sp. identification (9) should be interpreted with caution.

REFERENCES


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