PHENOTYPES OF SALIVA IN PERSONS OF THE Le(a-b-) GROUP DETECTED BY ABSORPTION WITH GOAT ANTI-Le^a AND ANTI-Le^b SERA

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Anti-Le^a and anti-Le^b goat sera with incomplete antibodies were used in the absorption test to investigate the saliva of 53 persons belonging to group Le(a-b-). The saliva of persons of group Le(a-b-c+d-) Se was shown to contain only Le^a antigen, while the saliva of persons of group Le(a-b-c-d+) Se may have one of three phenotypes: Le(a+b), Le(a-b+), Le(a-b-).

Information on the presence of Le^a and Le^b antigens in the saliva of persons belonging to group Le(a-b-), obtained predominantly by the delay of hemagglutination test using human sera, is highly conflicting [2, 6-12]. The need for precise information on this problem has become particularly urgent after the discovery of Le^d antigen in the erythrocytes of secreters of group Le(a-b-) [4, 5]. In a letter written on April 14, 1971, Willis informed the writer that Gunsen et al. (Lancaster, England), using human serum, had recently discovered the Le^c antigen, previously predicted by the writer [4], as a characteristic feature of erythrocytes of group Le(a-b-) nonsecreters.

The object of the present investigation was to investigate Le^a and Le^b antigens in the saliva of persons with blood group Le(a-b-) by means of goat antisera.

TABLE 1. Phenotypes of Saliva of Persons Belonging to Group Le(a-b-)

Se-se	Serum anti-Le^a	Serum anti-Le^b	No. of saliva samples	Phenotype of saliva
Se	3—9	3—9	24	Le (a+b+)
	0—2	3—9	13	Le (a—b+)
	0—2	0—2	6	Le (a—b—)
se	8—9	0—1	10	Le (a+b—)

Note. Numbers in first two columns denote degrees of absorption of serum in absorption test.

EXPERIMENTAL METHOD

Anti-Le^a and anti-Le^b sera with incomplete antibodies were prepared by Arzhelas's method [1, 2]. Since the incidence of phenotype Le(a-b-) in the inhabitants of Moscow is 11.9% [4], to select 53 persons of group Le(a-b-) more than 500 persons, mainly of group O, were studied. The fact that the persons of group Le(a-b-) were secreters (Se) or nonsecreters (se) was determined in 2 ways: using blood with anti-Le^b serum and using saliva and testing for the presence of ABH antigens. The technique of the hemagglutination test has been described previously [4]. Undiluted saliva was dried on gauze. In the absorption test (50 mg shredded material + 0.3 mg serum; keeping for 20 h at 7°C) sera with a titer of 1:16-1:20 were injected and titrated with trypsinized erythrocytes in close dilutions (2, 4, 6, 8, and so on times). If there were 3 or more degrees of absorption of the serum, the antigen was regarded as present.

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EXPERIMENTAL RESULTS

The experimental results (Table 1) showed that, despite the absence of the corresponding antigens in the blood, the saliva of most persons of group Le(a −b −) was differentiated in accordance with Lewis's system. All of the 4 theoretically possible phenotypes were represented in the saliva. The phenotypes of the saliva Le(a+b −), characteristic of nonsecreters, is not found in secreters and, conversely, the phenotype of the saliva of secreters is absent in nonsecreters. The reason for the existence of 3 alternative phenotypes of the saliva in secreters is not clear, but these results show that the saliva of secreters of the same group with respect to the ABO system can be differentiated by Lewis's substances. It is important to note that the anti-Le^b sera used in these experiments did not possess anti-Le^{bH} specificity because they did not react with the saliva of 6 secreters of group Le(a −b −), five of whom belonged to group O.

The existence of persons whose saliva contains neither ABH substances nor Lewis's substances is therefore doubtful.

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