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Short Communication

NEW O AND H ANTIGENS AND ADDITIONAL SEROVARS OF *Plesiomonas shigelloides*

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SUMMARY: The antigenic scheme for *Plesiomonas shigelloides* described by Shimada and Sakazaki (1978) has been expanded to 107 serovars consisting of 50 O serogroups and 17 H antigens.

In a previous serological study with 87 strains of *Plesiomonas shigelloides*, Shimada and Sakazaki (1) established an antigenic scheme of a total of 40 serovars consisting of 30 O serogroups and 11 H antigens. Attempts have been made to use the serotyping system as an epidemiological tool (2,3).

During the past 10 years, our laboratory received a total of 914 strains of *P. shigelloides* for identification. Although the majority of these strains fell into the serovars previously established, 162 strains were not agglutinated by any of the O and H antisera. As these strains probably represented additional serovars with new combinations of O and H antigens, they were subjected to further studies.

Of these 162 strains, 16 were kindly sent by Dr. E. Aldová, Institute of Hygiene and Epidemiology, Prague, ČSSR; the other strains came from Japan, India or South-East Asia. Of these strains, 63 were isolated from the feces of patients with gastroenteritis or their contracts and the remaining 99 strains from animals, river fish, birds, river water and mud.

The preparation of O and H antisera and agglutination and agglutinin-absorption tests were carried out as described by Shimada and Sakazaki (1). By cross-agglutination and agglutinin-absorption tests, these cultures were divided into 20 O serogroups other than the 30 O groups previously recognized. O antigenic numbers 31 to 50 were therefore given to the 20 new O antigens. Six new H antigens (H12-H17) were also demonstrated in the 162 cultures.

From the agglutination results, it was possible to establish an antigenic scheme of a total of 107 serovars of *P. shigelloides* consisting of 50 O serogroups and 17 H antigens (Table I).

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Table I. *Antigenic scheme for P. shigelloides*

O group	H antigen	O group	H antigen
1	1a1b; 2; 3; 5	26	1a1c; 5
2	1a1c; 3; 5; 7	27	1a1c; 2; 3; 5
3	2; 3; 5	28	3
4	1a1c; 3	29	2; 3; 10; 11
5	3; 4	30	1a1c; 2; 11
6	1a1c; 3	31	2; 3
7	2; 5; NM	32	14
8	2; 3; 5	33	3
9	2; 3	34	13
10	2; 3; 11	35	11
11	2; 3; 5	36	2
12	2; 3; 5; 7; 8; 9; 12; 16	37	NM
13	2	38	5
14	2; 4; 5	39	11
15	2; 5; 10; 17	40	11
16	5	41	1a1b
17	2; 4; 6; 11	42	2
18	2; 3	43	2
19	2; 3	44	2; 8
20	2; 10	45	2
21	2; 7; 8	46	3
22	1a1c; 2; 3; 5; 8	47	13
23	1a1c; 3	48	2
24	3; 5; 8	49	15
25	3; 6	50	11

NM=Non-motile.

When cross-agglutination tests with O antisera 1-50 were carried out with the reference strains for all the O antigens, a reciprocal reaction (a,b-a,c) was recognized between O antigens 5 and 32.

Some O antigenic relationships between *P. shigelloides* and *Shigella* serovars were reported by Shimada and Sakazaki (1). More recently, the authors (4) demonstrated that antigens O5 and O15 of *P. shigelloides* were apparently identical to O-antigenic groups 13 and 19 of *Aeromonas hydrophila*, respectively; similarly antigens

O14 and O22 of *P. shigelloides* were respectively related to O groups 29 and 28 of *A. hydrophila* in an a,b-a,c type relationship.

The reference strains for all the O and H antigens of *P. shigelloides* are shown in Table II; these strains should be used for preparation of the diagnostic antisera.

Table II. *Reference strains for O and H antigens of P. shigelloides*

Antigenic formula			Antigenic formula		
O	H	Strain	O	H	Strain
<u>1</u>	<u>1a1b</u>	302-73	<u>24</u>	<u>8</u>	283-73
<u>2</u>	<u>1a1c</u>	306-73	<u>25</u>	3	610-74
<u>3</u>	<u>2</u>	307-73	<u>26</u>	1a1c	603-74
<u>4</u>	<u>3</u>	314-73	<u>27</u>	3	882-74
<u>5</u>	<u>4</u>	318-73	<u>28</u>	3	846-74
<u>6</u>	3	322-73	<u>29</u>	2	869-74
<u>7</u>	2	301-73	<u>30</u>	1a1c	883-74
<u>8</u>	3	303-73	<u>31</u>	3	Pl-656
<u>9</u>	2	310-73	<u>32</u>	<u>14</u>	8085*
<u>10</u>	11	315-73	<u>33</u>	3	8114*
10	<u>11</u>	1392-74	<u>34</u>	13	8230*
<u>11</u>	2	319-73	<u>35</u>	11	8552*
12	<u>9</u>	346-73	<u>36</u>	2	8728*
<u>12</u>	<u>12</u>	323-73	<u>37</u>	NM	11074*
12	<u>16</u>	Pl-1000	<u>38</u>	5	11173*
<u>13</u>	2	329-73	<u>39</u>	11	11274*
<u>14</u>	<u>5</u>	334-73	<u>40</u>	11	11282*
<u>15</u>	<u>10</u>	338-73	<u>41</u>	11	11404*
15	<u>17</u>	206-81	<u>42</u>	2	11448*
<u>16</u>	5	341-73	<u>43</u>	2	11455*
<u>17</u>	<u>6</u>	343-73	<u>44</u>	8	11770*
<u>18</u>	2	344-73	<u>45</u>	2	11443*
<u>19</u>	2	345-73	<u>46</u>	3	11446*
<u>20</u>	2	351-73	<u>47</u>	<u>13</u>	11444*
<u>21</u>	<u>7</u>	354-73	<u>48</u>	2	317-73
<u>22</u>	3	355-73	<u>49</u>	<u>15</u>	Pl-657
<u>23</u>	1a1c	356-73	<u>50</u>	11	1826-79

*Aldová strains.

Arranged by O antigen numbers.

Numbers underlined indicate reference antigens.

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