

A PRACTICAL SUGGESTION FOR THE SEROLOGICAL TYPE DETERMINATION OF *SALMONELLA* ORGANISMS

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The serological type differentiation of *Salmonella* organisms based on the work by White and Kauffmann gives fast and consistent results. It has become most valuable for epidemiological investigations and lately also as a basis for therapeutic measures. Its practical application, however, has been hampered by the necessity of having large numbers of immune sera, absorbed testing fluids, and type cultures at hand for such work.

Experience with five hundred *Salmonella* infections shows that seventeen serological types of *Salmonella* are of major importance for human pathology in this country. They are enumerated in the following table:

		O-ANTIGEN	H-ANTIGEN		
			Phase 1	Phase 2	
Group A.	<i>S. paratyphi A</i>	(I), II	a	—	
Group B.	<i>S. paratyphi B</i>		(I), IV, (V)	b	1, 2
	<i>S. typhi-murium</i>	i		1, 2	
	<i>S. chester (-san diego)</i>	e, h		e, n, (x)	
	<i>S. derby</i>	f, g		—	
Group C ₁ .	<i>S. paratyphi C</i>	VI, VII (Vi)		c	1, 5
	<i>S. choleraesuis</i>		(e)	1, 5	
	<i>S. thompson</i>		(k)	1, 5	
	<i>S. oranienburg</i>		VI, VII	m, t	—
	<i>S. bareilly</i>			y	1, 5
	<i>S. montevideo</i>			g, m, s	—
Group C ₂ .	<i>S. newport</i>	VI, VIII		e, h	1, 2
	<i>S. muenchen</i>		d	1, 2	
Group D.	<i>Eberthella typhosa</i>	IX (Vi)	d	—	
	<i>S. enteritidis</i>	(I), IX	g, m	—	
	<i>S. panama</i>		l, v	1, 5	
Group E.	<i>S. give</i>		III, X, XXVI	l, v	1, 7
	<i>S. anatum</i>	e, h		1, 6	

A satisfactory routine determination of these types can be carried out by slide agglutination with a set of six O-, eleven monophasic H- and a Vi-serum, sufficiently specific for the following antigens or antigen-complexes:

II; IV, V; VI, VII; VI, VIII; IX; III, X, XXVI;
a; b; i; e, h; f, g; m, t; y; g, m, s; d; l, v; 1, 2; Vi

Smooth and well motile cultures are tested first with the O-sera and then with the H-sera of the group. If one of the H-phases is absent, single colonies are

examined. Presence of the Vi-antigen accounts for absence of O-agglutination, as does roughness of the cultures. Monophasic *S. choleraesuis* and thompson strains may be differentiated on the basis of inositol fermentation (thompson ferments inositol).

About 97 per cent of the *Salmonella* cultures from human infections can thus be typed. Most of the other types are agglutinated by some of the sera and can be tentatively identified as *Salmonella*.