EXPERIMENTAL STUDIES ON THE TYPE-DETERMINING ANTIGENS OF HUMAN SERUM ALBUMIN

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By using the intestinal strips of the rats sensitized previously with each serum albumin samples isolated from normal human or patients, Schultz-Dale tests were performed by challenging each other serum albumin samples on them*. The positive (anaphylactic contractions of the intestinal strips of the sensitized rats) and negative reactions obtained were arranged to find that those serum albumin samples seemed to be classified into four types as shown in Table 1.

TABLE 1. Serum albumin samples classified into four types.

Type	A ₁	A ₂	A ₁₊₂	A ₃
Serum albumin sample number	No. 16 (O*)	No. 10 (A B)	No. 15 (A)	No. 13 (B)
	No. 22 (A)	No. 38 (A B)	No. 18 (A B)	No. 23 (A)
	No. 33 (B)	No. 44 (O)		No. 24 (A)
	No. 36 (A)			No. 32 (B)
				No. 40 (O)
				No. 42 (B)

No. 14 (B), No. 27 (O) : A₁ or A₁₊₂

No. 17 (A) : A₂ or A₁₊₂

No. 9 (A), No. 25 (B) : A₂ or A₃

No. 20 (A), No. 21 (A) : unknown

Nos. 14, 15, 16, 17, 20, 21, 22, 23 : normal human serum albumin

No. 24 : serum albumin from stomach ulcer patient

Others : serum albumin from stomach cancer patients

* ABO blood group

The antigenicity of A₁ type serum albumin was different from A₂ type. A₁₊₂ type serum albumin was revealed to have both antigenic properties of A₁ and A₂ type serum albumins. On the contrary, A₃ type serum albumin was found to have neither A₁ nor A₂ type antigens. The relationship between ABO-blood group and these types of serum albumin was not clarified yet. These types of serum albumin were thought to be present physiologically without concerning with diseases of patients. Serum albumin from stomach cancer patient sometimes produced positive reactions when they challenged to the intestinal strips even after the completion of desensitization using serum albumin of the same type.

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* See p. 160 of *Gann* **53**, 159 (1962).