Table 6-1. Some Properties of Human Immunoglobulins

Property	Immunoglobulin Class				
	IgG	IgA	IgM	IgD	IgE
					
Serum concentration (g./100 ml.)	1.2	0.4	0.12	0.003	< 00005
Sedimentation coefficient (S)	7	7 (9,11,13)*	19 (24,32)*	7	8
Molecular weight	140,000	160,000Δ	900,000	180,000	200,000
Electrophoretic mobility	γ	Slow β	Between γ and β	Between γ and β	Slow β
H-chains	γ	α	μ	δ	ϵ
L-chains	λ or κ	λ or κ	λ or κ	λ or κ	λ or κ
Complement fixation	Yes	No	Yes	No	No
Placental transfer	Yes	No	No	No	No
Percent intravascular	40	40	70	—	—
Half-life (days)	23	6	5	3	2.5
Percent carbohydrate	3	10	10	13	10
Antibody activity	Most Ab to infections; major part of secondary response; Rh isoagglutinins; LE factor	Present in external secretions	First Ab formed; ABO isoagglutinins; rheumatoid factor	Antibody activity rarely demonstrated, found on lymphocyte surface	Reagin sensitizes mast cells for anaphylaxis

* Figures in parentheses indicates the existence of other molecular forms, such as polymers.

Δ Serum IgA 160,000 MW; secretory IgA 350,000 MW, may activate alternate pathway (see Chap. 10) (Modified from Fahey, J.L.: J.A.M.A. 194:183, 1966).