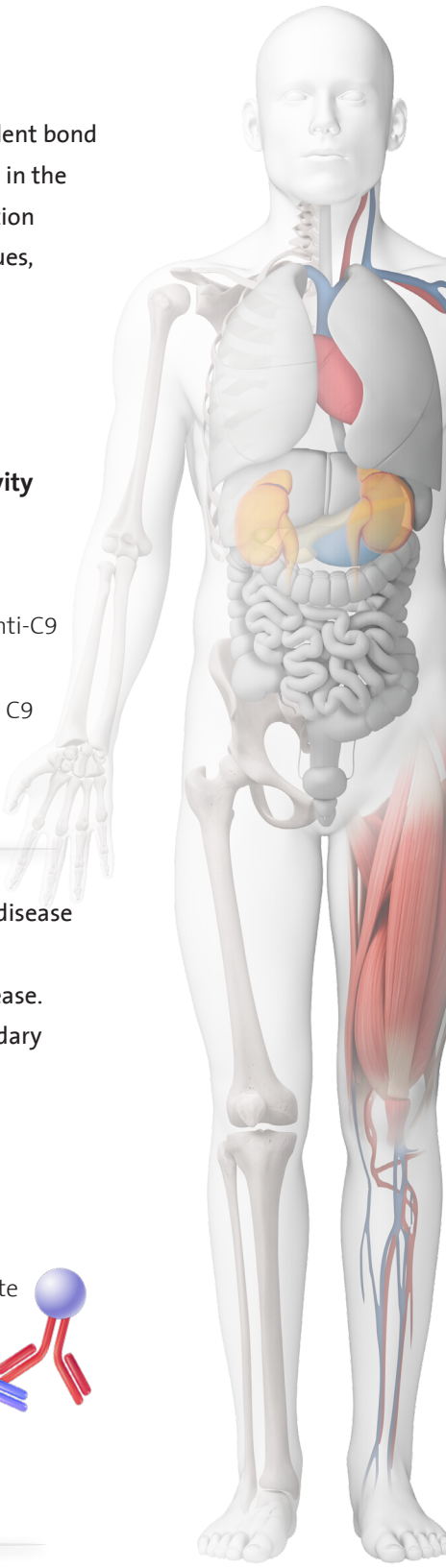
Immune Complex Detection

Immune reactants involved in several autoimmune diseases

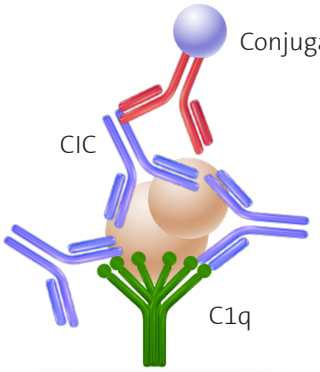
What are immune complexes?

Circulating immune complexes (CICs) are a type of immunoreactant formed by the noncovalent bond of antigen and antibody. They are a heterogeneous group of soluble reactants that circulate in the blood. CICs can be deposited in various tissues and organs throughout the body. The deposition of CICs can trigger an inflammatory response and activate immune cells in the affected tissues, potentially leading to autoimmune diseases.

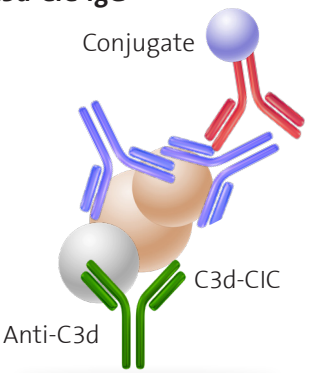


Different ELISA tests targeting circulating immune complexes

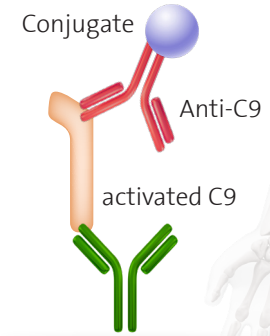
› CIC-IgG



› C3d-CIC-IgG



› Complement Activity

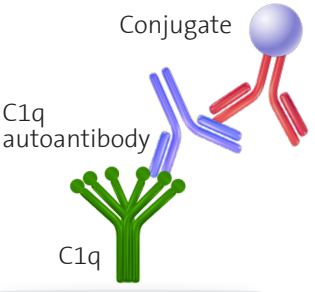


Hereditary angioedema, systemic lupus erythematosus (SLE), and recurrent meningococcal disease are the most common clinical settings in which complement deficiency can be detected.
An additional outcome can be kidney diseases in the presence of different autoimmune disease. Furthermore, autoimmune diseases, in relation to immune complexes, often result in secondary complement deficiency because complement activation exceeds hepatic synthesis.

Complement cascade in autoimmunity

The complement system is composed of 30 different plasma proteins that circulate in the blood in an inactive form when there is no infection. In the presence of an antigen or antibody the system becomes 'activated'.
While the detection of C1q autoantibodies aims to identify autoimmunity, C1q itself is a component of the complement cascade.

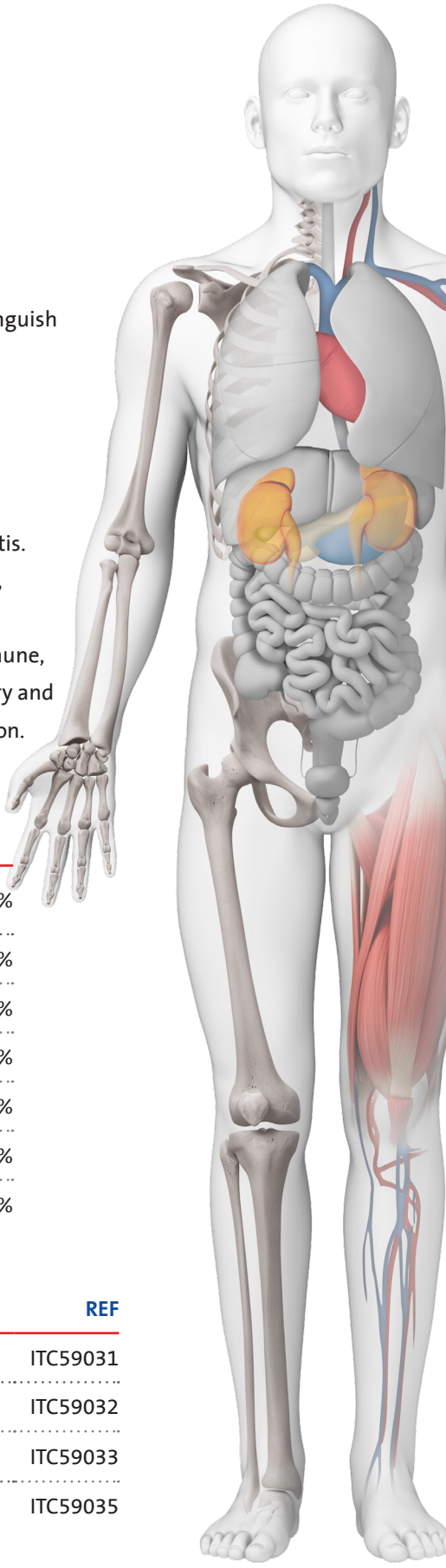
› C1q-Antibodies



Detection of Immune Complexes

Benefits of diagnostic assays

- Precise understanding of the activation of bound molecules
- C1q molecules are bound to the surface of ELISA using patented technologies.
- Unique preservation of epitopes ensures biological activity.
- Special sample dilution buffer ensures the exclusive detection C1q autoantibodies.
- Powerful diagnostics with CIC-IgG, C3d-CIC ELISA and complement activity help distinguish between different complement activation pathways.



Impact on immune system

The presence of CICs are associated with autoimmune diseases such as systemic lupus erythematosus, immune complex glomerulonephritis, rheumatoid arthritis, and vasculitis. The ratio of antigen to antibody determines the size and shape of the immune complex, which in turn determines the effect of the immune complex.

CICs can be present in a variety of systemic disorders such as rheumatological, autoimmune, and allergic diseases, as well as viral and bacterial infections. They can cause tissue injury and inflammation by activating complement and recruiting neutrophils to the site of deposition.

Frequency of C1q autoantibodies found in various conditions

Hypocomplementemic urticarial vasculitis syndrome	100 %	Polyarteritis nodosa	27 %
MTCD	94 %	Polychondritis	17 %
Felty‘s syndrome	76 %	Sjögren‘s syndrome	13 %
HCV	26 - 38 %	Glomerulonephritis	3 - 50 %
Rheumatoid vasculitis	31 %	HIV	13 %
Rheumatoid arthritis	30 %	Healthy children	0 - 3 %
SLE	30 - 100 %	Healthy adults	4 - 18 %

Ordering information

	Format	Size	Antigen	REF
CIC ELISA	IgG	96 tests	C1q-CIC	ITC59031
C3d-CIC ELISA	IgG	96 tests	Anti-C3d-CIC	ITC59032
Anti-C1q-Antibodies ELISA	IgG	96 tests	C1q	ITC59033
Complement Activity ELISA	IgG	96 tests	IgM (complement activator)	ITC59035

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