

Our glossary of definitions for antibody related terms.

Term	Definition
Adjuvant	Compounds/chemicals that are sometimes added to immunizing peptides when creating antibodies to promote and help stimulate the immune response.
Affibody [®]	Small, engineered proteins that are designed to bind to a given target protein with high affinity. In function, Affibody [®] molecules mimic monoclonal antibodies, though they are much smaller. For further details on Affibodies [®] please see the information provided on our Affibody [®] information page.
Affinity	A measure of the interaction/binding between antibody and antigen.
Affinity purification	Purification of an antibody against the antigen with which it was made.
Affinity constant	A numerical value to indicate the strength of binding between antibody and antigen. It is also known as association or equilibrium constant.
Antibody	An immunoglobulin protein capable of specific combination with an antigen/hapten that has elicited and induced an immune response. Produced by B cells in response to presence of antigen/hapten.
Antigen	Any substance foreign to the body that elicits a specific immune response.
Antigen retrieval	Methods used to enhance the binding of antibody to antigen in tissue/cells. Normally used in combination with fixation (particularly the use of paraformaldehyde) or embedding techniques that may cause chemical changes that block antibody binding.
Antiserum	Blood/serum from an immunized host possessing antibodies of interest (as well as other serum proteins and antibodies).
Ascites fluid	Fluid taken from the abdomen of a living host animal, which will contain unpurified monoclonal antibody produced by hybridoma cells grown within the host.
Avidity	A measure of the overall strength of binding of the antibody-antigen complex.
BSA	Bovine serum albumin.
Capture antibody	An antibody coating an ELISA plate that binds an antigen from an applied sample/solution.
Carrier protein	A large highly antigenic molecule that is conjugated with a small antigen or hapten. This induces a more effective and specific immune response in an immunized animal when creating antibodies for commercial use (e.g. BSA or KLH).
Chromogen	A chemical substrate used for detection of enzyme-tagged antibodies, for example DAB. The chemical substrate will change color in the presence of the enzyme.
Conjugated antibody	Conjugated antibodies are chemically bound to fluorochromes/chromogens to enable visual detection of the antibody. Chemical substrates can be directly conjugated to a primary antibody, or introduced bound to a secondary antibody.
Cross-reactivity	The binding of an antibody to similar epitopes on other antigens/proteins.
Denatured	Conformational change in an antigen away from its native state. This may help expose an epitope, or destroy it.
Detection antibody	The primary antibody used in sandwich ELISA, which detects the immobilized antigen. This antibody can be directly conjugated or visualized following the application of a conjugated-secondary.
Direct staining	When only a conjugated primary antibody is used for detection of the antigen.
Epitope	The specific site where an antibody binds its antigen via its variable region. Note, this is not the same as the immunogen, which includes the epitope but is often much larger.

Fluorochrome (fluorophore)	Chemical compound that emits fluorescent light within a measurable color spectrum following excitation. This can be in response to a specific wavelength of laser light, or chemical interaction.
Hapten	Small molecule that only elicits a specific antibody response when directly coupled to a larger carrier protein.
Hybridoma	A cell line created following the fusion of antibody producing B cells from the spleen with an immortalized tumor cell line. A purified hybridoma culture/cell line will secrete its own specific monoclonal antibody.
Host species	The animal species an antibody is raised in.
Immunogen	A peptide sequence, chemical or other substance capable of inducing an immune response.
Immunogenicity	The ability of an antigen to induce antibody production.
Immunoglobulin (Ig)	General term for a family of proteins that function as antibodies. There are several subclasses.
Indirect staining	When a conjugated secondary antibody is required for detection of a non-conjugated primary antibody.
Isotype control	An antibody of the same immunoglobulin subclass and from the same species as the primary antibody. This antibody is not raised against anything specific, and is used to confirm the primary antibody binding is specific and not a result of non-specific Fc receptor binding, or other protein interactions.
KLH	Keyhole limpet hemocyanin.
Monoclonal antibody	A homogenous population of antibodies that recognize one epitope only. They are secreted by and purified from hybridoma cell cultures. Hybridomas are created by the fusion of B cells with an immortalized tumor cell-line.
Negative control sample	Any tissue, cell line, lysate or purified protein that is known to not express/contain the antigen of interest.
Normal serum	Blood serum from non-immunized animals; often used as a control.
Optimal working dilution	Concentration or dilution of antibody that maximizes the positive signal, while minimizing background and non-specific staining. This must be optimized for different antibodies, which can be achieved following a titration experiment.
Peptide	A short chain of amino acids.
Polyclonal antibody	A heterogeneous solution of antibody from multiple B cells in response to an antigen. This will recognize a variety of epitopes within the antigen.
Positive control sample	Any tissue, cell line, lysate or purified protein that is known to express/contain the antigen of interest.
Pre-adsorbed	When an antibody is adsorbed with other proteins/serum from various species, to eliminate any antibody that may cross-react.
Pre-immune serum	Serum extracted prior to immunization, often used as a control.
Primary antibody	The antibody that directly binds the antigen of interest. For direct staining, these will already be conjugated. For indirect staining, a conjugated secondary antibody will be required for detection.
Protein A/G purification	Column purification where the Fc domain of antibodies bind the high affinity <i>S. aureus</i> protein A or G.
RabMAb®	Abcam's patented technology for the generation of high quality rabbit monoclonal antibodies.
Secondary antibody	A conjugated antibody that binds to the antigen-binding primary antibody.
Specificity	This refers to the ability of an antibody to bind only the desired antigenic determinant. Western blotting can be used to assess the specificity of a product. For example, whether the antibody detects a protein of the correct molecular weight, or if antigen-binding is affected by the presence of the immunizing peptide.
Titration	An experiment designed to find the optimal concentration of an antibody for a desired application. The antibody is tested at a range of dilutions and the results assessed to identify the optimum concentration.