

inovapure

Pancreatic Enzymes

Ovoproducts

Avidin

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Avidin is a glycoprotein extracted from egg white using ion-exchange or affinity chromatography. Its biological importance was discovered in 1926 when rats were fed egg white and developed dermatitis, loss of hair and disruption of muscular co-ordination. It was determined that avidin has an extremely strong binding for biotin (Vitamin H), an important growth factor, which is three to six orders of magnitude higher than that of typical antigen-antibody complexes. When a large quantity of avidin was added to the diet of rats, it effectively deprived them of this essential growth factor. Biotin is found in every living cell, but most notably in kidneys, livers, and pancreas, as well as in yeast and milk.

Further research established that one avidin molecule can combine with four biotin molecules. Once biotin was synthesized in 1941, the use of avidin-biotin technology as a research tool became practical and effective for a variety of applications and technologies.

APPLICATIONS

Avidin's rapid and almost irreversible binding to biotin supports many applications in both *in vivo* and *in vitro* research. Specific and tight binding to avidin can still occur when biotin has been bound to another compound through the use of a spacer arm. Cross linking with biotinylated molecules can occur under widely different experimental conditions and this has led to many innovative techniques in the fields of protein purification (affinity chromatography), affinity cytochemistry, and the study of cell surface molecular interactions.

There are virtually unlimited biochemical possibilities inherent in the avidin-biotin system, where affinity reactions are needed. A few examples of applications that have been developed for avidin are:

- as an aid in amplifying the sensitivity of immunoassays;
- as a general diagnostic tool in all fields of biology;
- for drug delivery of tumour-specific antibodies; and
- as a genetic probe for gene mapping.

The application of the avidin-biotin system requires the availability of various avidin-conjugated probes and many group specific derivatives, including enzymes, antigens, antibodies, lectins, hormones, nucleic acids, cells, and sub-cellular organelles. The ultra-high purity of Neova's avidin makes it particularly attractive for maximum efficacy of the various probes and derivatives; minimizing background interference.

BENEFITS / ADVANTAGES

As one of the largest manufacturers and suppliers worldwide of avidin and other egg-derived components, Neova has isolated a highly purified avidin with very low non-specific binding properties that is consistently chosen over other competitive products. All extraction and refining is done under cGMP guidelines for active pharmaceutical ingredients (API).

A key benefit associated with using Neova's avidin lies in the full range of services, including both technical and applications support that Neova provides. Neova works with its customers to meet their unique product specifications.

Neova has developed unique quality control procedures to ensure high quality is consistent from one production run to the next. Customers are encouraged to review and compare analytical results and to request pre-shipment samples for approval.

Unit of Definition

One unit of avidin will bind 1.0 gram of d-biotin.

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