

AN OVERVIEW ON ANTIBODY AND ITS APPLICATION

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ABSTRACT

Antibodies are immune system proteins that circulate in the bloodstream and detect and destroy foreign entities such as bacteria and viruses. Antibodies circulate in the bloodstream after exposure to a foreign material termed an antigen, giving protection against subsequent antigen exposures. The accurate detection or quantification of a wide range of analyses is now critical in a wide range of applications as well as situations. Biosensors have revolutionized diagnostics, allowing for the recognition of the food or environmental pollutants, biologicals warfare substances, illegal substances, and human/animal disease indicators during point of care testing's (POC). Because of their remarkable specificity for their corresponding antigens, antibodies continue to play significant roles in several sensing systems. Current biosensor systems that use antibodies for molecules are briefly discussed in this study. The utilization of molecular biological methods for antibody development as well as improvement is scrutinized. These recombinant antibodies are more suitable for biosensor growth in relation of design, stability, affinity, but also specificity.

KEYWORDS: *Bio Sensor, Bloodstream, Human, Recombinant Antibodies, Transducer.*

REFERENCES:

1. Welbeck K, Leonard P, Gilmartin N, Byrne B, Viguier C, Arora S, et al. Generation of an anti-NAGase single chain antibody and its application in a biosensor-based assay for the detection of NAGase in milk. *J Immunol Methods*. 2011;364(1–2):14–20.
 2. Bridle H, Desmulliez M. Biosensors for the Detection of Waterborne Pathogens. *Waterborne Pathogens: Detection Methods and Applications*. Elsevier; 2013. 189–229 p.
 3. Strohl WR. Current progress in innovative engineered antibodies. *Protein and Cell*. 2018.
 4. Peña-Bahamonde J, Nguyen HN, Fanourakis SK, Rodrigues DF. Recent advances in graphene-based biosensor technology with applications in life sciences. *J Nanobiotechnology*. 2018;16(1):1–17.
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5. Zhao G, Wang H, Liu G. Advances in biosensor-based instruments for pesticide residues rapid detection. *Int J Electrochem Sci.* 2015;10(12):9790–807.
6. Zeng X, Shen Z, Mernaugh R. Recombinant antibodies and their use in biosensors. *Anal Bioanal Chem.* 2012;402(10):3027–38.
7. Baselt DR, Lee GU, Natesan M, Metzger SW, Sheehan PE, Colton RJ. A biosensor based on magnetoresistance technology. This paper was awarded the Biosensors & Bioelectronics Award for the most original contribution to the Congress. *Biosens Bioelectron.* 1998;13(7–8):731–9.
8. Chandra P. Nanobiosensors for personalized and onsite biomedical diagnosis. *Nanobiosensors Pers Onsite Biomed Diagnosis.* 2016;(May):1–617.
9. Conroy PJ, Hearty S, Leonard P, O’Kennedy RJ. Antibody production, design and use for biosensor-based applications. *Semin Cell Dev Biol.* 2009;20(1):10–26.
10. Uda MNA, Hasfalina CM, Samsuzanaa AA, Faridah S, Gopinath SCB, Parmin NA, et al. A disposable biosensor based on antibody-antigen interaction for tungro disease detection. *Nanobiosensors for Biomolecular Targeting.* Elsevier Inc.; 2018. 147–164 p.