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Egg yolk antibodies and its application in aquatic animal health management

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Although, aquaculture has developed significantly, management of diseases needs more emphasis. Specific antibodies for designing and use of different immunodiagnostics are necessary. Secondly, there is a great scope for integration of passive immunization i.e., IgY immunotherapy, the concept in health management needs to be tapped. Specific antibodies produced in chickens offer several important advantages over producing antibodies in other mammals. A single egg contains as much antibody as an average 20 ml bleed from a rabbit. This simple, non-invasive approach presents an appealing alternative to conventional polyclonal antibodies production methods. Purification of chicken egg yolk immunoglobulin Y (IgY), does not require animal bleeding. In addition, the eggs from immunized chickens provide a continual, daily source of polyclonal antibody, and this convenient approach offers greater compatibility with animal protection regulations. These IgY antibodies could be used for either developing immunodiagnostic kits or in passive immunotherapy against diseases. This will reduce the use of chemicals/antibiotics in the aquatic environment and also help in controlling viral infections. The development, characterization, use and control of diseases are discussed in the light of the available literature.

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