



IgY technology: producing antibodies from a 3Rs perspective

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Introduction

Polyclonal antibodies are frequently used in many laboratories worldwide. Production of these antibodies is usually done using several mammal species and involves systematic bleeding with the consequent suffering of the animals.

IgY technology allows the production and purification of specific antibodies from hens egg yolk.

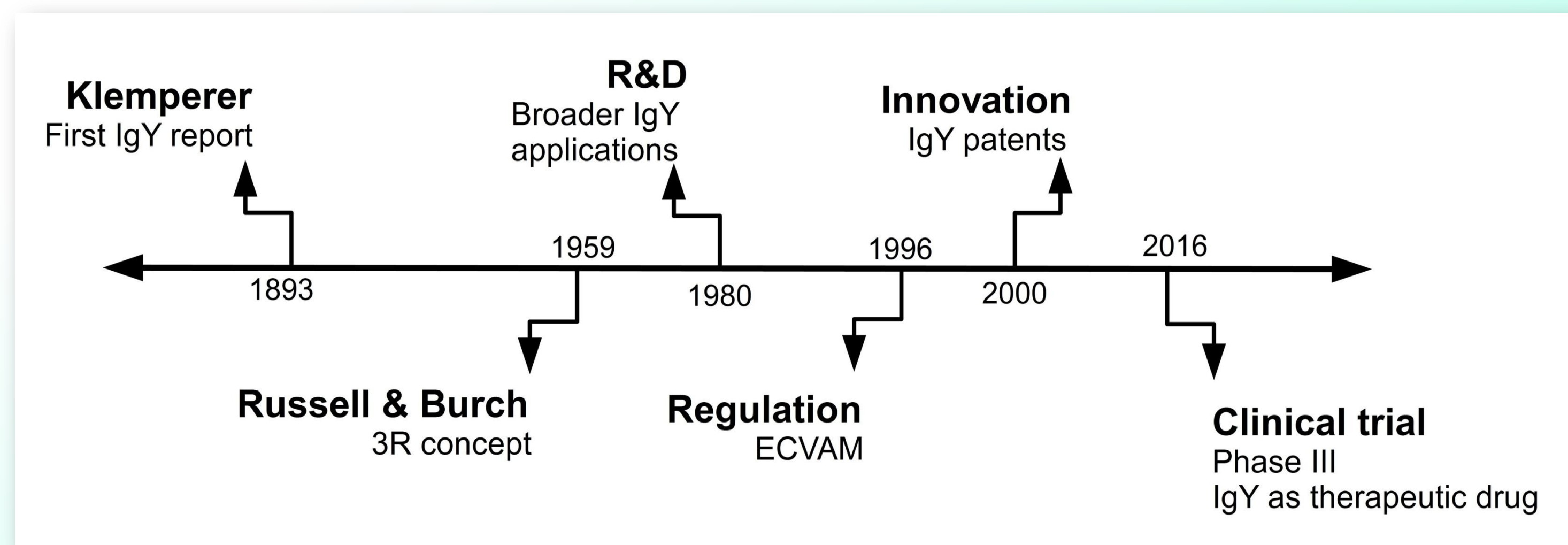
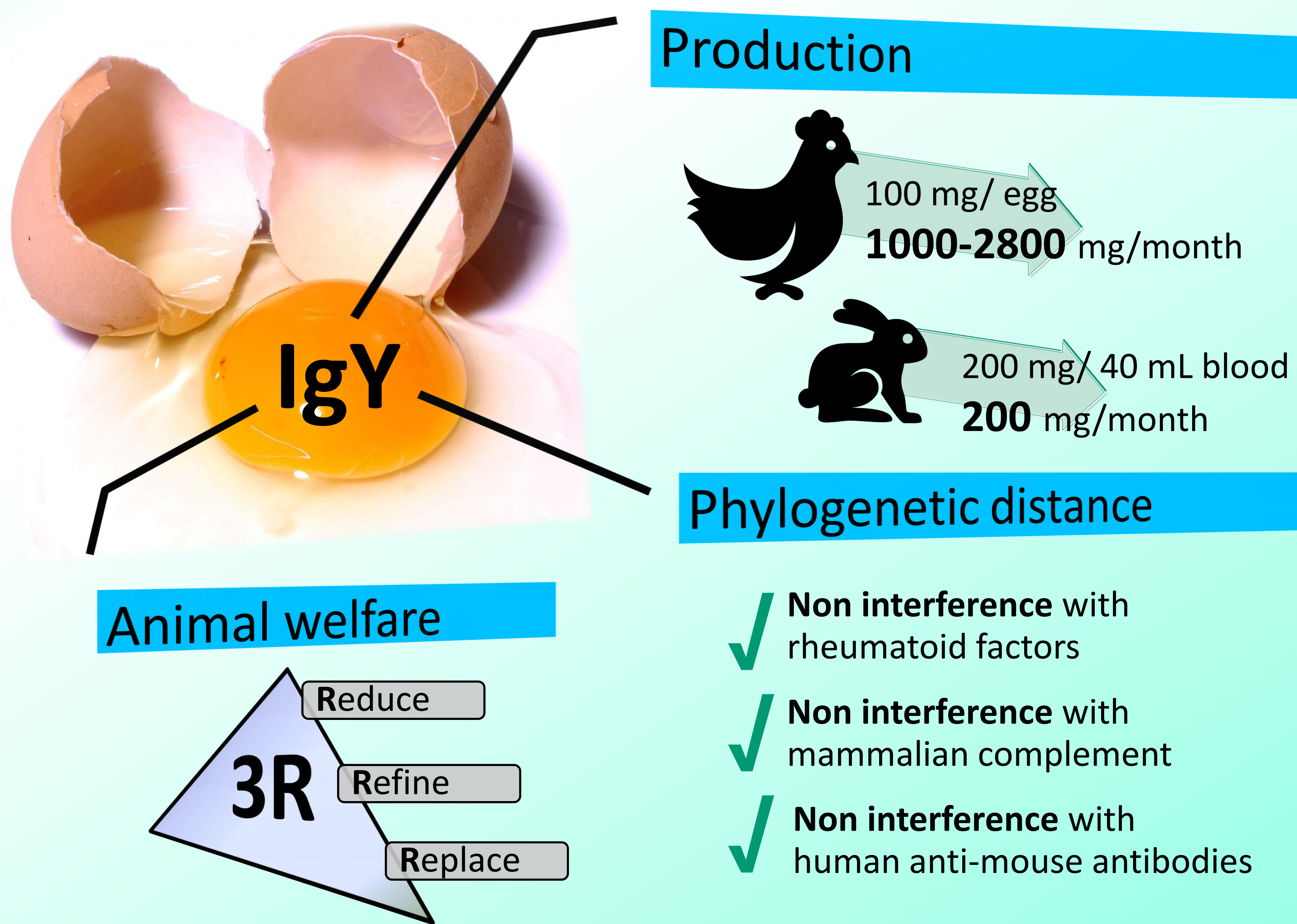


Figure 1. Timeline of IgY Technology



IgY technology represents an alternative to both lab- and large-scale production of antibodies and it is in accordance with the guidelines towards the **3Rs perspective**.

Our research team focuses on the R+D of IgY technology platform to produce avian polyclonal antibodies against bacteria, recombinant proteins, toxins and **venoms** for diagnostic or therapeutic purposes.

Production of IgY



Figure 2. Housing of laying hens and purification steps of IgY antibodies

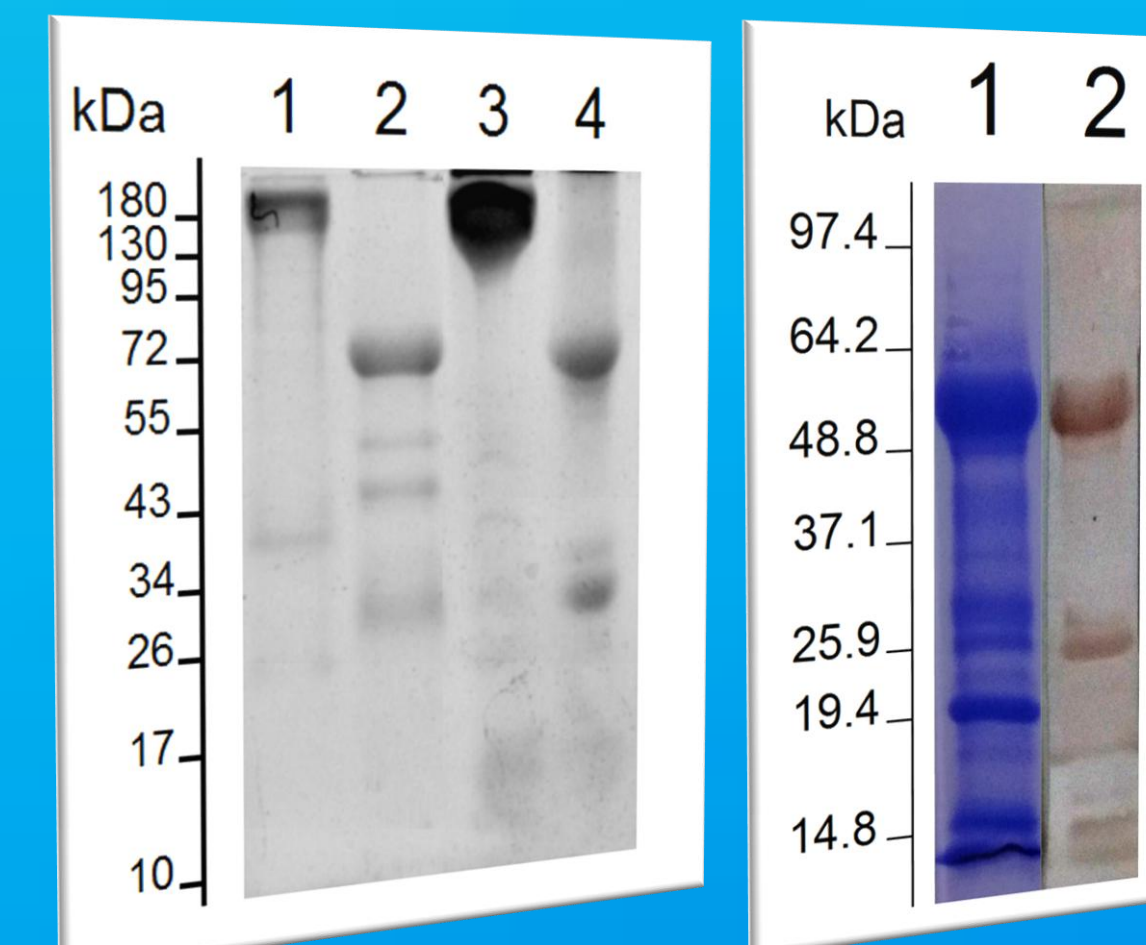


Figure 3 SDS-PAGE of IgY and Western Blot against the antigen

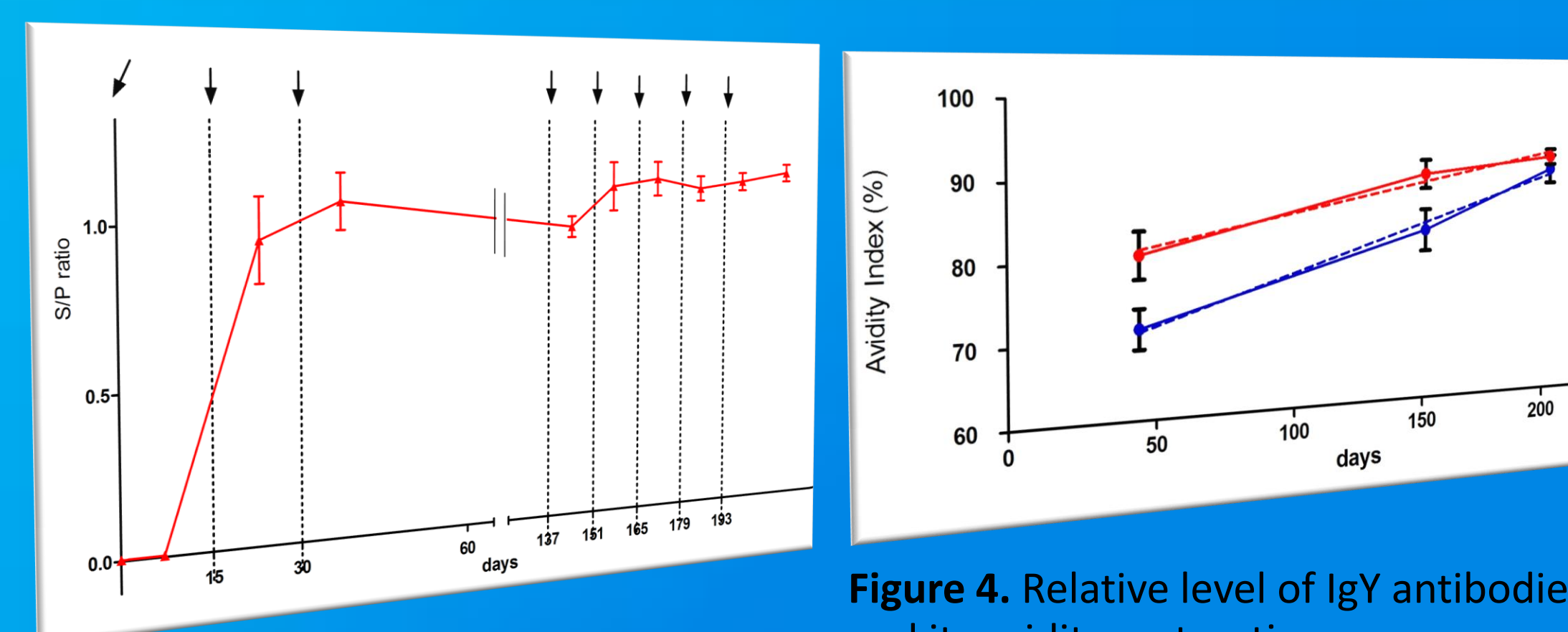


Figure 4. Relative level of IgY antibodies and its avidity maturation

IgY technology allows the production of **polyclonal antibodies** by the immunization of hens with a desired antigen. Furthermore, **IgY** not only recognizes the antigen, such as snake venom or toxins, but also it has **neutralizing capacities**. In this way, production of avian polyclonal antibodies should be the chosen alternative to fulfill the ethical aspects required to follow the **3Rs principles**.