

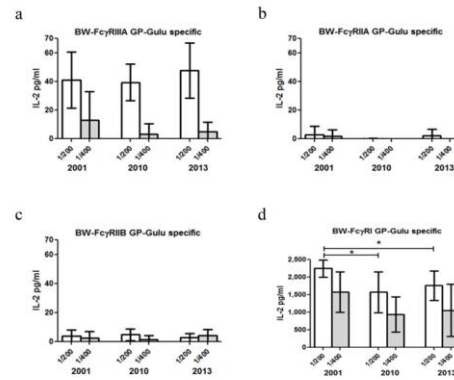
# Sudan ebolavirus long recovered survivors produce GP-specific Abs that are of the IgG1 subclass and preferentially bind FcγRI

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## Abstract

Ebolavirus is a highly lethal pathogen, causing a severe hemorrhagic disease with a high fatality rate. To better understand immune correlates of protection by virus specific IgG, we investigated the evolution of the Fcγ receptors (FcγRs)-activating capabilities of antiviral IgG in serum samples of long recovered survivors. To this end, longitudinal serum samples from survivors of Sudan ebolavirus (SUDV) infection, studied over years, were examined for the presence of Ebola-GP specific IgG subclasses, and for their binding to FcγRs. We developed a cell-based reporter system to quantitate pathogen-specific antibody binding to FcγRIIIA, FcγRIIA, FcγRIIB and FcγRI. With this system, we demonstrate that anti-GP-specific stimulation of the FcγRI reporter by survivors' sera was substantially high one year after acute infection, with a slight reduction in activity over a decade post infection. We further demonstrate that GP-specific IgG1 is by far the seroprevalent subclass that retained and even enhanced its presence in the sera, over ten years post infection; the prevalence of other GP-specific IgG subclasses was considerably reduced over time. In accordance, GP-specific FcγRI reporter response and GP-specific total IgG1 subclass correlated in the studied group of Ebola survivors. These observations are important for further informing Ebola vaccine and therapeutic development.

## Image



**Figure 1:** GP-specific reporters' responses to SUDV survivors' sera from longitudinal studies.

## Recent Publications

1. Sobarzo A et al. (2013) Persistent immune responses after Ebola virus infection. *N. Engl. J. Med.* 369:492-493.
2. Sobarzo A et al. (2013) Profile and persistence of the virus-specific neutralizing humoral immune response in human survivors of Sudan ebolavirus (Gulu). *J. Infect. Dis.* 208:299-309.
3. Ackerman M E et al. (2013) Natural variation in Fc glycosylation of HIV-specific antibodies impacts antiviral activity. *J. Clin. Invest.* 123(5):2183-2192.
4. Nelson E A et al. (2016) Clomiphene and its isomers block ebola virus particle entry and infection with similar potency: potential therapeutic implications. *Viruses.* 8(8). pii:E206.
5. Baize S et al. (2002) Inflammatory responses in ebola virus-infected patients. *Clin. Exp. Immunol.* 128(1):163-168 (2002).



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## **Biography**

Olga Radinsky is a PhD student under supervision of Professor Angel Porgador, doing her research in the Immunology field at Ben Gurion University of Negev in Israel. As a part of PhD studying, she developed cell-based reporter system based on the expression of CD3zeta-fused FcγRs in BW cells to quantitate total and pathogen-specific antibody binding to Fcγ-Receptors. Using this system, she completed analysis of sera from patients with different health conditions: Alzheimer patients, cancer patients, recurrent abortions in women, and long-recovered survivors of SUDV infection.

**Notes/Comments:** \_\_\_\_\_