COMPARISON PATTERNS OF 4 T1 ANTIGENS RECOGNIZED BY HUMORAL IMMUNE RESPONSE MEDIATED BY IGG AND IGM ANTIBODIES IN FEMALE AND MALE MICE WITH BREAST CANCER USING 2D-IMMUNOBLOTS.

Ostoa-Saloma P., Hernández-Ávila R., Meneses-Ruíz DM. and Díaz-Zaragoza M.

Departamento de Inmunología, Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Ciudad Universitaria, México, D.F. 04510, Mexico. E-mail address: postoa@unam.mx. Tel.: +52 55 56228941

Early detection of cancer is one of the most promising approaches by which to reduce the growing cancer burden. The early diagnosis in cancer is challenging, since it is the most common cancer in women worldwide. Natural immunoglobulin M (IgM) recognizes modified cell surface antigens that develop during tumorigenesis and activating complement to destroy nascent transformed cells or induce their apoptosis. Thus, IgM should be considered in developing a tool for early diagnosis before the tumor has been established.

We examined tumor antigens by 2-dimensional (2D) immunoblot with antibodies in sera from male and female mice in which 4 T1 cells were injected into the mammary gland nipple. Our aim was to characterize the variability in IgM and IgG humoral immune responses in female and male mice with breast cancer at various stages of disease development and correlate antigen recognition statistically with variables that are associated with individual mice and tumor parameters. Each mouse has an individual pattern of recognition to a tumor antigenic background and a variable number of spots for IgMs. Spots variation in 2D pattern for natural IgM can be expressed as a binomial signature, which opens the way to correlate a particular pattern, in murine models, with different cancer resistance or susceptibility. The disparities in antigenic recognition by IgG
or IgM during the development of cancer between female and male mice could also be attributed to the effects of sex hormones and differences in how the immune system recognizes 4 T1 antigens in both genders.