ANTI SULFATIDES AND ANTI SULFATED PROTEOGLYCANS ANTIBODIES AND THEIR USE

Technical Field.

The present invention relates to new monoclonal antibodies (MAb) that recognize specifically and with high affinity sulfatides and sulfated proteoglycans. Also the present invention relates to pharmaceutical compositions comprising monoclonal antibodies of the invention or fragments derived from these antibodies. Additionally, the present invention relates to a kit of reagents useful in the diagnosis of cardiovascular diseases comprising Abs of the invention or fragments thereof.

Previous Art

After more than 30 years of the development of hybridoma technology for obtaining murine MAb (Koehler y Milstein Nature, 256: 495-497, (1975), they have proved to be very useful in disease diagnosis and basic research, but only 20 Abs have been registered for human therapy (Pharma Vitae, Monoclonal Abs Update, 6-363, 2008) This has been largely due to their short half-life in blood and the poor recognition of murine effector functions by the human immune system, and also by the immune response due to the murine origin of these Abs when they are injected in patients (HAMA response, acronym of human anti-mouse Abs). Several studies have shown that after administration of a foreign antibody, the immune response produced in the patient may be considerably strong and can eliminate substantially the therapeutic usefulness of the antibody after initial treatment. Moreover, after giving a patient a murine MAb, subsequent treatments with unrelated mouse Abs may not be effective or even dangerous due to the cross-reactive HAMA response, according to the report of Khazaeli, M.B. y col. Journal of Immunotherapy 15: 42-52 (1994).

From the above information it becomes necessary to obtain versions of therapeutic Abs that are less immunogenic in humans, which are obtained easily and economically and that are suitable for the manufacture of therapeutic formulations and other uses. Morrison S.L. y col. Adv Immunol., 44: 65-92 (1989).

Several methods have been developed to humanize Abs from mouse or rat and thus reduce xenogeneic response against these foreign proteins when injected in humans. One of the first attempts to reduce the immunogenicity has been the generation of "chimeric" Abs, in which the variable domains of murine proteins are attached to constant domains of human molecules, accomplishing not only

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