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(54) Title: MICE THAT MAKE HEAVY CHAIN ANTIBODIES

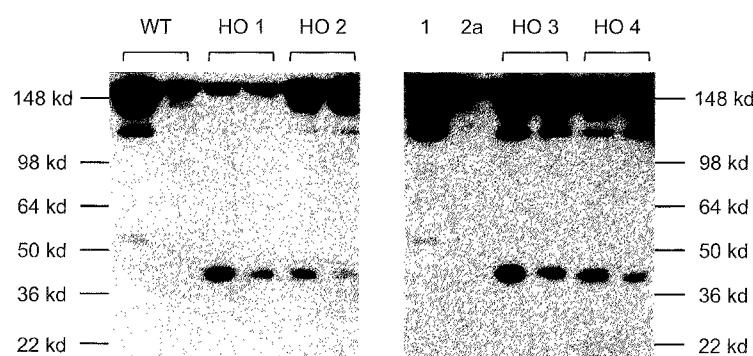


Figure 9

(57) Abstract: Genetically modified non-human animals and methods and compositions for making and using them are provided, wherein the genetic modification comprises a deletion in an immunoglobulin constant region CH1 gene (optionally a deletion in a hinge region) of an IgG, IgA, IgD, and/or IgE, and wherein the mouse is capable of expressing a functional IgM. Genetically modified mice are described, including mice having a functional IgM gene and modified to have a deletion of a CH 1 domain and a hinge region in a heavy chain constant domain that is not an IgM, e.g., in an IgG heavy chain constant domain. Genetically modified mice that make human variable/mouse constant chimeric heavy chain antibodies (antibodies that lack a light chain), fully mouse heavy chain antibodies, or fully human heavy chain antibodies are provided.