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(54) Title: TRANSGENIC NON-HUMAN VERTEBRATE FOR THE EXPRESSION OF CLASS - SWITCHED, FULLY HUMAN, ANTIBODIES

(57) Abstract: The present invention relates to humanisation of antibodies *in vivo*. The invention provides non-human vertebrates, cells, populations and methods useful for humanising chimaeric antibodies *in vivo*. Using the present invention it is possible straightforwardly and rapidly to obtain antigen-specific antibodies that are fully human (ie, comprising human variable and constant regions) and have undergone recombination, junctional diversification, affinity maturation and isotype switching *in vivo* in a non-human vertebrate system. Furthermore, such antibodies are humanised (eg, totally human) – and selected – totally *in vivo*, and as such the present invention harnesses *in vivo* filtering for expressibility, affinity and biophysical characteristics in the context of the desired human variable and constant region pairings. This avoids problems of down-grading antibody characteristics when humanising the constant region of chimaeric antibodies *in vitro*.

