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(54) **Title:** NON-HUMAN ANIMALS EXPRESSING PH-SENSITIVE IMMUNOGLOBULIN SEQUENCES

(57) **Abstract:** Genetically modified non-human animals are provided that express an immunoglobulin variable domain that comprises at least one histidine, wherein the at least one histidine is encoded by a substitution of a non-histidine codon in the germline of the animal with a histidine codon, or the insertion of a histidine codon in a germline immunoglobulin nucleic acid sequence. Immunoglobulin genes comprising histidines in one or more CDRs, in an N-terminal region, and/or in a loop 4 region are also provided. Immunoglobulin variable domains comprising one or more histidines (*e.g.*, histidine clusters) substituted for non-antigen-binding non-histidine residues. Non-human animals that are progeny of animals comprising modified heavy chain variable loci (V, D, J segments), modified light chain variable loci (V, J segments), and rearranged germline light chain genes (VJ sequences) are also provided. Non-human animals that make immunoglobulin domains that bind antigens in a pH-sensitive manner are provided.

