

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BLUEBIRD BIO, INC.
Petitioner

v.

SLOAN KETTERING INSTITUTE FOR CANCER RESEARCH,
Patent Owner

Patent No. 7,541,179

**REPLY IN SUPPORT OF PETITION FOR *INTER PARTES*
REVIEW OF U.S. PATENT NO. 7,541,179**

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Ex.1001	U.S. Patent No. 7,541,179 to Sadelain <i>et al.</i> (“the ’179 patent”)
Ex.1002	Declaration of Jörg Bungert, Ph.D.
Ex.1003	Curriculum Vitae of Jörg Bungert, Ph.D.
Ex.1004	May, “Therapeutic Hemoglobin Synthesis in Beta-Thalassemic Mice Expressing Lentivirus-Encoded Beta-Globin,” Cornell University (2001) (“the <i>May Thesis</i> ”)
Ex.1005	May, <i>et al.</i> , “Therapeutic Haemoglobin Synthesis in β -thalassaemic Mice Expressing Lentivirus-Encoded Human β -globin,” <i>Nature</i> , 406:82-86 (2000) (“the <i>May Article</i> ”)
Ex.1006	May, <i>et al.</i> , “Lentiviral-Mediated Transfer of the Human β -Globin Gene and Large Locus Control Region Elements Permit Sustained Production of Therapeutic Levels of β -Globin in Long-Term Bone Marrow Chimeras,” <i>Mol. Therapy</i> , 1(5):S248-249 (2000) (“the <i>May Abstract</i> ”)
Ex.1007	Perutz, <i>et al.</i> , “Hemoglobin Structure and Respiratory Transport,” <i>Sci. Am.</i> , 239(6): 92-125 (1978)
Ex.1008	Thein & Rochette, “Disorders of Hemoglobin Structure and Synthesis,” <i>in Principles of Mol. Med.</i> 179 (Jameson, ed., 1998)
Ex.1009	Bank, <i>et. al.</i> , “Disorders of Human Hemoglobin,” <i>Science</i> , 207:486-93 (1980)
Ex.1010	He & Russell, “Expression, Purification, and Characterization of Human Hemoglobins Gower-I ($\zeta_2\epsilon_2$), Gower-2 ($\alpha_2\epsilon_2$), and Portland-2 ($\zeta_2\beta_2$) Assembled in Complex Transgenic-Knockout Mice, <i>Blood</i> , 97(4):1099-1105 (2001)
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Ex.1013	Civin, <i>et al.</i> , “Sustained, Retransplantable, Multilineage Engraftment of Highly Purified Adult Human Bone Marrow Stem Cells <i>In Vivo</i> ,” <i>Blood</i> , 88(11):4102-09 (1996)
Ex.1014	High, “Gene Therapy in Haematology and Oncology,” <i>Lancet</i> , 356:S8 (2000)
Ex.1015	Ellis, <i>et al.</i> , “Evaluation of β -globin Gene Therapy Constructs in Single Copy Transgenic Mice,” <i>Nucleic Acids Res.</i> , 25(6):1296-1302 (1997)
Ex.1016	Li, <i>et al.</i> , “Nucleotide Sequence of 16-Kilobase Pairs of DNA 5’ to the Human ϵ -Globin Gene,” <i>J. Biol. Chem.</i> , 260(28):14901-10 (1985)
Ex.1017	Mishima, <i>et al.</i> , “The DNA Deletion in an Indian $\delta\beta$ -thalassaemia Begins One Kilobase From the $\Delta\gamma$ Globin Gene and Ends in an L1 Repetitive Sequence,” <i>Br. J. Haematol.</i> , 73:375-79 (1989)
Ex.1018	Vosberg, “Molecular Cloning of DNA: An Introduction Into Techniques and Problems,” <i>Hum. Genet.</i> 40(1):1-72 (1977)
Ex.1019	Roberts, “Restriction Enzymes and Their Isoschizomers,” <i>Nucleic Acids Res.</i> , 15(Suppl.):r189-r217 (1987)
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