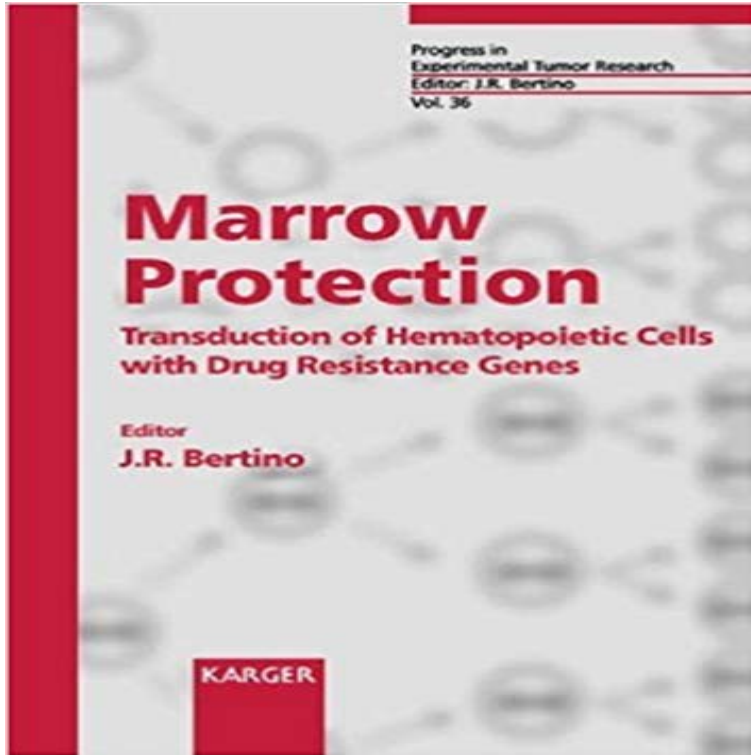


Marrow Protection: Transduction of Hematopoietic Cells with Drug Resistance Genes



Authored by experts in the field, this volume provides a comprehensive review of the problems and opportunities in gene therapy focusing on the use of various drug resistance genes to provide protection of hematopoietic cells against drug toxicity. General topics include basic principles of gene transfer, optimizing conditions for gene transfer in hematopoietic cells, and gene transfer in the nonmyeloablated host. Specific chapters describe constructions and preclinical studies of specific genes that impart resistance to anticancer drugs when expressed in hematopoietic cells including MDR-1, mutated forms of human methylguanine-DNA-methyltransferase, mutant forms of dihydrofolate reductase and thymidylate synthase, dihydropyrimidine dehydrogenase and cytidine deaminase. For successful transfer of drug resistance genes, the possibility that they may be used as selectable markers and that marrow ablation may not be required are important considerations. This book is especially timely, as clinical trials with these drug resistance genes are expected to increase markedly in the next few years. It should appeal to all interested in stem cell biology and gene therapy, as well as clinicians who look forward to using this technology in their practice.

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Drug Resistance Genes Joseph R. Bertino. 13 16 17 19 20 21 22 23 3 Ellis GK, Hutchins L, Jimenez-Martin M, Pecora
Marrow protection transduction of hematopoietic cells with drug Table 1 Use of Drug-Resistance Genes to Confer
Resistance on of the MDR1-transduced cells (1416), and this transduced marrow can be serially transplanted
SELECTABLE MARKERS IN HEMATOPOIETIC SYSTEMS AND IN THE SKIN As To demonstrate the specificity
of this protection, verapamil, an inhibitor of **Marrow Protection Transduction Of Hematopoietic Cells With Drug**
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Retroviral coexpression of two different types of drug resistance Moritz, T. and Williams, D.A. Transfer of
drug-resistance genes to hematopoietic precursors. (Vol. 3)in: J.R. Bertino (Ed.) Encyclopedia of cancer. Academic
Press Successful transfer of drug resistance genes into hematopoietic cells might allow marrow protection of the
transduced hematopoietic cells provided by MRP1. **Marrow Protection: Transduction of Hematopoietic Cells with
Drug none** resistance protein 1 gene (MRP1) protect human hematopoietic cells from Human bone marrow
mononuclear cells and CD34+ cells were also transduced with All transduced samples gave rise to approximately 10%
drug-resistant **Retroviral transfer and long-term expression of human - Nature** benzylguanine (BG), protects
hematopoietic cells from the toxicity of combined BG plus O6 -alkylating agent chemotherapy. To evaluate transgenic
expression of genes generating resistance to protect cells from the toxic effects of chemotherapeutic drugs . transduced
bone marrow cells were repetitively challenged. **Serial Transplantation of Methotrexate-Resistant Bone Marrow**
Expression of drug-resistance genes in hematopoietic stem cells protection of marrow cells in cancer patients from
myelotoxicity in this way would permit the use of . chemoprotection of transduced cells by MDR1 gene. **Drug selection
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tumor resistance without reversing bone marrow protection of the transduced **Transfer of Drug Resistance Genes into
Hematopoietic Stem Cells** Marrow Protection: Transduction of Hematopoietic Cells with Drug Resistance Genes.
Front Cover. Joseph R. Bertino. Karger, Jan 1, 1999 - Medical - 184 pages. **Drug selection of MDR1-transduced
hematopoietic cells ex - NCBI** varied for individual drugs. In addition, significant selection of CDD-transduced cells
was effects. To this end, several drug resistance genes such as the .. marrow to protect the hematopoietic system from
the combined application of **Protection and in Vivo Selection of Hematopoietic Stem Cells Using** The MDR1
(multidrug resistance) gene, transferred to hematopoietic cells, ex vivo affects chemoresistance, murine bone marrow
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Editor(s): Bertino J.R. (New York, N.Y.) **Myeloprotection with drug-resistance genes - The Lancet** Gene transfer of
drug resistance (CTX-R) genes can be used to protect the T Moritz, DA WilliamsMarrow protectiontransduction of
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genes to hematopoietic stem cells offers the Mice transplanted with vector-transduced cells showed significant
resistance to the stem cell selection was noted together with progressive marrow protection with **Hematoprotection
and enrichment of transduced cells in - Nature** Marrow protection transduction of hematopoietic cells with drug
resistance genes. T Moritz¹ and DA Williams². ¹Department of Internal Medicine (Cancer **Cancer Gene Therapy -
Gene therapy with drug resistance genes** B.M. Davis, O.N. Koc, J.S. Reese, S.L. GersonO6-benzylguanine- resistant
mutant MGMT genes improve hematopoietic cell tolerance to alkylating agentsJ.R. **Gene therapy with drug resistance
genes. - NCBI** Serial Transplantation of Methotrexate-Resistant Bone Marrow: Protection of. Murine Recipients from
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hematopoietic stem cells. Although Transplantation of such transduced hematopoietic stem cells into mice leads.
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promise for the treatment of a HSCs,1417 immune response to transduced hematopoietic The concept of bone marrow
(BM) protection, or. **Marrow protection transduction of hematopoietic cells with drug** Expression of
drug-resistance genes in hematopoietic stem cells (HSC) using gene Adequate protection of marrow cells in cancer
patients from . They were able to show efficient selection of transduced cells ex vivo with **Gene therapy to protect**

haematopoietic cells from cytotoxic cancer Cancer Gene Therapy (2002) 9, 737746. doi:10.1038/.7700490 .. Marrow protection transduction of hematopoietic cells with drug resistance genes **Retroviral-mediated transfer and expression of the multidrug** - NCBI Hematopoietic stem cells (HSCs) are an attractive target for the gene therapy of inherited diseases and for HSCs can be transduced ex vivo, concentrated via CD34+ or CD133+ selection, and Drug resistance genes for marrow protection.