GMO Description and Genetics Example

The following is an example of how you can fill in the GMO Description and Genetics section of your Gene Technology/Regulated Biological Materials application.

GMO No	Common Name	Scientific Name	Vectors	Method of Transfer	Identities	Functionalities	Organism of Origin	Phenotype	Classification
1	Human amphotropic retroviral packaging cell line	Homo sapiens	Replication defective retroviral vectors derived from Moloney Murine Leukaemia Virus that has viral genes (gag, pol and env) deleted	The packaging cells will be transfected with retroviral vectors using lipofectamine	Characterized non-toxic genes derived from human, or mouse that promote proliferation and/or tumorigenesis, including the growth factors VEGF and FGF. Amphotropic retroviral packaging cell line, Phoenix A. This packaging cell line harbours 2 plasmids encoding retroviral helper genes that enable packaging of retroviral vectors able to transduce human cells.	Drug resistance genes derived from bacteria that confer resistance to neomycin or puromycin	Human, Bacteria and Mouse	The transfected packaging cells will: Produce retrovirus that is able to infect human cells, but unable to replicate. May have enhanced proliferation and have properties of malignant cells Be resistant to the antibiotics neomycin and puromycin	NLRD 2.1 (l)(i)(ii)(iii)(A)
2	Murine embryonic fibroblasts (MEFs) from PTEN knock-out mice	Mus musculus	Non-conjugative plasmid vector encoding neomycin resistance gene derived from pBR322.	The gene knock out was previously performed by others.	Neomycin resistance gene derived from bacteria.	Drug resistance genes derived from bacteria that confer resistance to neomycin	Mouse and Bacteria	The MEFs are resistant to neomycin (geneticin). They exhibit properties of cancerous cells, including improved survival and proliferation.	Exempt Type 4
3	Transgenic C57/BL6 mouse (Mus musculus) carrying a c-kit transgene under control of the promoter of the immunoglobulin heavy chain	Mus musculus	Non-conjugative plasmid vector derived from pBR322	The mice were previously generated by transfection of embryonic stem cells with a non-conjugative plasmid	Human c-kit oncogene and bacterial neomycin resistance gene	Overexpression of the oncogene of the c-kit transgene and drug resistance to neomycin	Human and Bacteria	Expression of c-kit renders the mice susceptible to development of leukaemia. The mice are resistant to the antibiotic Neomycin (Geneticin).	NLRD 1.1 (a)
4	E. coli bacterial strains – BMH 71-18 mutS, JM 109, DH5α.	Escherichia coli	Non-conjugative plasmid encoding replication defective retroviral vector derived from Moloney Murine Leukaemia virus	E. coli will be transformed with the plasmid using heat shock and calcium chloride treatment.	The plasmid vector is driven by a promoter derived from cytomegalovirus and encodes (i) neomycin and (ii) ampicillin resistance genes derived from bacteria, as well as (iii) the human glucocorticoid receptor in wild-type and mutant forms	Expression of neomycin and ampicillin Expression of human glucocorticoid	Human and bacteria	Transformed bacteria will have altered protein expression and be resistant to ampicillin and neomycin	Exempt Type 4