1. A method of preparing a transplantable NK cell fraction for transplantation into a subject in need thereof, the method comprising:

(a) obtaining a CD3-depleted NK cell fraction HLA-haploidentical or HLA-mismatched for said subject;

(b) *ex vivo* culturing said CD3-depleted NK cell fraction under conditions allowing for cell proliferation, wherein said conditions comprise providing nutrients, serum, IL-15 and nicotinamide in an amount between 1.0 mM to 10 mM;

(c) supplementing said CD3- depleted NK cell fraction with fresh nutrients, serum, IL-15 and nicotinamide 8-10 days following step (b) to produce an expanded CD3- depleted NK cell fraction;

(d) harvesting said expanded CD3-depleted NK cell fraction 14-16 days following step (b); and

(e) washing and concentrating said expanded CD3-depleted NK cell fraction of step (d),

thereby producing a transplantable NK cell fraction for transplantation in said subject.

2. The method of claim 1, wherein said *ex-vivo* culturing is devoid of a feeder layer.

3. The method of claim 1, wherein said conditions for allowing for cell proliferation comprise providing 10% human serum.

4. The method of any one of claims 1-3, wherein said nicotinamide comprises 5.0 mM nicotinamide, said IL-15 comprises 20 ng/ml IL-15 and said nutrients comprise minimal essential culture medium.

5. The method of any one of claims 1-4, wherein said NK cell fraction is from an HLA-haploidentical or HLA-mismatched donor having at least:

(a) HLA matching at intermediate resolution DNA-based Class 1 typing of the A and B locus of at least 2/4 class 1 allele; and

(b) absence of (MFI $\leq$ 1000) recipient donor-specific anti-HLA antibodies, and

wherein said NK cells of step (a) comprise at least 40-90% CD56+/CD3- cells.

6. The method of claim 1, wherein said harvesting of step (d) comprises harvesting a first portion of said expanded CD3-depleted NK cell fraction 14 days following step (b), and harvesting a second portion of said expanded CD3-depleted NK cell fraction 16 days following step(b), and, optionally, wherein said first portion comprises about 50% of said expanded CD3-depleted NK cell fraction and said second portion comprises the remainder of said expanded CD3-depleted NK cell fraction.

7. The method of claim 1, wherein said washed and concentrated expanded NK cell fraction generated by step (e) is characterized by the following parameters:

(a) at least 70% CD56+/CD3- cells;

(b) at least 70% viability;

(c) fewer than $5.0X10^5$ CD3+ cells/Kg mass of patient, upon infusion;

(d) no more than 5 EU endotoxin/Kg mass of patient, upon infusion; and

(e) no Gram-positive micro-organisms.

8. A transplantable NK cell fraction prepared according to any one of claims 1-7.

9. The transplantable NK cell fraction of claim 8, characterized by the following parameters:

(a) at least 70% CD56+/CD3- cells;

(b) at least 70% viability;

(c) fewer than $5.0X10^5$ CD3+ cells/Kg mass of patient, upon infusion;

(d) no more than 5 EU endotoxin/Kg mass of patient, upon infusion; and

(e) no Gram-positive micro-organisms.

10. A transplantable human NK cell fraction characterized by the following parameters:

(a) at least 70% CD56+/CD3- cells;

(b) at least 70% viability;

(c) fewer than $5.0X10^5$ CD3+ cells/Kg mass of patient, upon infusion;

(d) no more than 5 EU endotoxin/Kg mass of patient, upon infusion; and

(e) no Gram-positive micro-organisms.

11. Use of an expanded CD3-depleted haploidentical or mismatched NK cell fraction, wherein said expanded CD3-depleted HLA-haploidentical or HLA-mismatched NK cell fraction has been expanded by *ex-vivo* culturing with nutrients, serum, IL-15 and nicotinamide in an amount between 1.0 mM to 10 mM for the manufacture of transplantable NK cell fraction fortreating a hematological disease in a human subject in need thereof, wherein said treating comprises:

(a) administering an anti-cancer monoclonal antibody to said subject;

(b) administering at least one immunosuppressive agent to said subject;

(c) transplanting said expanded CD3-depleted haploidentical or mismatched NK cell fraction into said subject; and

(d) administering IL-2 to said subject.

12. The use of claim 11, wherein said hematological disease is a hematological malignancy.

13. The use of claim 12, wherein said hematological disease is multiple myeloma, and, optionally, , wherein said multiple myeloma is characterized by at least one of:

(a) relapsed disease between 2-18 months following first autologous stem cell transplantation;

(b) relapsed disease at least 4 months following allogeneic stem cell transplantation with no evidence of active graft versus host disease (GVHD);

(c) relapsed/refractory disease following at least two lines of therapy including proteasome inhibitor and an immunomodulatory drug (IMiD);

(d) Serum IgG, IgA, IgM or IgD Myeloma protein (M-protein) greater than or equal to 0.5g/dL; and

(e) Urine M-protein greater than or equal to 200 mg/24 collection.

14. The use of claim 12, wherein said hematological disease is non-Hodgkins lymphoma (NHL), and, optionally, wherein said NHL is CD20 positive B cell NHL.

15. The use of claim 12, wherein said hematological malignancy is multiple myeloma and said anticancer monoclonal antibody is Elotuzumab (10mg/kg), or wherein said hematological malignancy is NHL and said anticancer monoclonal antibody is Rituximab (375mg/m^2).

16. The use of claim 11, wherein step (c) comprises administering a first dose of said expanded CD3-depleted haploidentical or mismatched NK cell fraction followed two days later by a second dose of said expanded CD3-depleted haploidentical or mismatched NK cell fraction.

17. The use of claim 11, wherein step (a) is performed three times: at 9-11 days before said first dose, at 3 days before said first dose and at 11 days following said first dose of said expanded CD3-depleted haploidentical or mismatched NK cell fraction.

18. The use of claim 11, wherein said NK cell fraction comprises between $1X10^7$/kg and $5X10^8$/kg expanded CD3-depleted HLA-haploidentical or HLA-mismatched NK cells.

19. The use of claim 11, wherein the combined said first and said second doses comprise $2X10^7$/kg to $2X10^8$/kg total expanded CD3-depleted HLA-haploidentical or HLA-mismatched NK cells.

20. The use of claim 11, wherein:

(a) said first dose and said second dose of said NK cell fraction each comprise $1X10^7$/kg expanded CD3-depleted haploidentical or mismatched NK cells, for a total dose of $2X10^7$/kg expanded CD3-depleted haploidentical or mismatched NK cells, or

(b) said first dose and said second dose of said NK cell fraction each comprise $5X10^7$/kg expanded CD3-depleted haploidentical or mismatched NK cells, for a total dose of $1X10^8$/kg expanded CD3-depleted haploidentical or mismatched NK cells, or

(c) said first dose and said second dose of said NK cell fraction each comprise $1X10^8$/kg expanded CD3-depleted haploidentical or mismatched NK cells, for a total dose of $2X10^8$/kg expanded CD3-depleted haploidentical or mismatched NK cells.

21. The use of claim 11, wherein said at least one immunosuppressive agent comprises cyclophosphamide and/or fludarabine, and, optionally, wherein

(i) said at least one immunosuppressive agent comprises both cyclophosphamide (40 mg/kg) and fludarabine (25 mg/m^2); and

(ii) wherein said cyclophosphamide is administered 5 days prior to transfusion of said expanded CD3-depleted haploidentical or mismatched NK cells, and said fludarabine is administered on each one of days 5, 4 and 3 prior to transfusion of said expanded CD3-depleted HLA-haploidentical or HLA-mismatched NK cells.

22. The use of claim 11, wherein step (d) comprises administering $6X10^6$ units IL-2 following transfusion of said expanded CD3-depleted NK cells:

(i) on the day of transfusion of said expanded CD3-depleted HLA-haploidentical or mismatched NK cells; and

(ii) two days following transfusion of said expanded CD3-depleted haploidentical or mismatched NK cells; and

(iii) four days transfusion of said expanded CD3-depleted haploidentical or mismatched NK cells.

23. The use of claim 11, wherein step (c) comprises transplanting a transplantable NK cell fraction prepared according to the method of any one of claims 1-7.