CLAIMS

What is claimed is:

1. Use of a liquid composition for the manufacture of a medicament for the treatment of a cancer that exhibits reduced expression of argininosuccinate synthetase, wherein the liquid composition comprises pegylated arginine deiminase ADI-PEG ~~20~~, where the liquid composition is sterile and at a pH of ~~6.6 to 7.0~~6.5 to 7.5, the composition comprising

~~(a)~~ histidine-HCl which is from 0.0035M Histidine-HCl to 0.35M Histidine-HCl~~, or~~

~~(b) 10 to 12 mg of ADI-PEG 20, 20 to 40 mg of polyethylene glycol, 1.27 mg ±5% monobasic sodium phosphate, 3 mg ±5% dibasic sodium phosphate, 7.6 mg ±5% sodium chloride, and 1-2 ml of water for injection~~.

2. The use according to claim 1~~(a)~~, wherein the liquid composition comprises 0.035 M Histidine-HCl at pH 6.8 with 0.13 M sodium chloride.

3. The use according to claim 1 or 2, wherein the cancer is:

(a) pancreatic cancer, small cell lung cancer (SCLC), mesothelioma, or hepatocellular carcinoma;

(b) pancreatic cancer, a sarcoma, or small cell lung cancer, wherein the medicament is to be administered to a patient in combination with an autophagy inhibitor, wherein the autophagy inhibitor is ~~optionally~~ selected from the group consisting of chloroquine, 3-methyladenine, hydroxychloroquine, bafilomycin A1, 5-amino-4-imidazole carboxamide riboside (AICAR), okadaic acid, N6-mercaptopurine riboside, wortmannin, and vinblastine, and optionally wherein the arginine deiminase and the autophagy inhibitor act synergistically~~, wherein the medicament is to be administered to a patient in combination with an autophagy inhibitor;~~

(c) melanoma, wherein the medicament is to be administered to a patient in combination with cisplatin;

from the group consisting of cyclophosphamide, gemcitabine, cisplatin, sorafenib, sunitinib and everolimus.

32. The use of any one of claims 19 to 31 wherein:

(a) the arginine deiminase is covalently bonded to 5±1.5 straight chain PEG molecules and the compound is formulated in a composition comprising less than about 0.5% native ADI, less than about 5% free PEG, or both; and

(b) the arginine deiminase is administered weekly at a dose of about 160 IU/m^2 to about 640 IU/m^2.

33. A liquid composition for use in treating a cancer that exhibits reduced expression of argininosuccinate synthetase, comprising pegylated arginine deiminase ADI-PEG ~~20~~, where the liquid composition is sterile and at a pH of 6.5 to 7.5~~6.6 to 7.0~~, the composition comprising

~~(a)~~ histidine-HCl which is from 0.0035M Histidine-HCl to 0.35M Histidine-HCl~~, or~~

~~(b) 10 to 12 mg of ADI-PEG 20, 20 to 40 mg of polyethylene glycol, 1.27 mg ±5% monobasic sodium phosphate, 3 mg ±5% dibasic sodium phosphate, 7.6 mg ±5% sodium chloride, and 1-2 ml of water for injection~~.

34. The liquid composition for use according to claim 33~~(a)~~, comprising 0.035 M Histidine-HCl at pH 6.8 with 0.13 M sodium chloride.

35. The liquid composition for use according to claim 33 or 34, for use in treating:

(a) pancreatic cancer, small cell lung cancer (SCLC), mesothelioma, or hepatocellular carcinoma;

(b) a patient in combination with an autophagy inhibitor, wherein the cancer is pancreatic cancer, a sarcoma, or small cell lung cancer, wherein the autophagy inhibitor is optionally selected from the group consisting of chloroquine, 3-methyladenine,