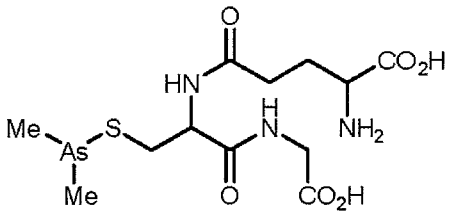
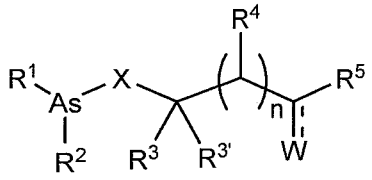
Summary

The present invention provides organic arsenical compounds with anti-cancer properties. In one aspect, the present invention refers to the use of a compound of formula (I)



or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for treating peripheral T-cell lymphoma, wherein a dose of the compound is 200-420 mg/m^2.

In some examples, the present disclosure provides compounds having a structure of formula (I) or a pharmaceutically acceptable salt thereof



(I)

wherein

X is S or Se;

W is O, S, or (R)(R), where each occurrence of R is independently H or C_{1-2}alkyl;

n is an integer from 0 to 20;

R^1 and R^2 are independently C_{1-30}alkyl;

R^3 is –H, C_{1-10}alkyl, or C_{0-6}alkyl-$COOR^6$;

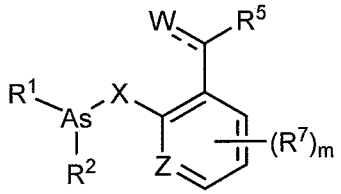
$R^{3'}$ is H, amino, cyano, halogen, aryl, aralkyl, heteroaryl, heteroaralkyl, carboxyl, C_{1-10}alkyl, C_{1-10}alkenyl, or C_{1-10}alkynyl, preferably H;

R^4 is -OH, -H, $-CH_3$, amino, $-OC(O)C_{1-10}$aralkyl, $-OC(O)C_{1-10}$alkyl, -OC(O)aryl, or a glutamine substituent;

R^5 is –OH, cyano, C_{1-10}alkoxy, amino, O-aralkyl, $-OC(O)C_{1-10}$aralkyl, $-OC(O)C_{1-10}$alkyl, -OC(O)aryl, or a glycine substituent; and

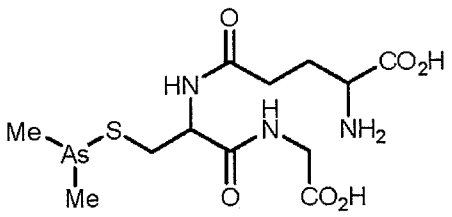
R^6 is H or C_{1-10}alkyl.

In certain examples, the organic arsenicals are compounds having a structure of formula (II)



CLAIMS:

1. Use of a compound of formula (I)



or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for treating peripheral T-cell lymphoma,
wherein a dose of the compound is 200-420 mg/m^2.

2. The use of claim 1, wherein the medicament is to be administered intravenously.

3. The use of any one of claims 1 to 2, wherein a dose of the compound is 200-300 mg/m^2.

4. The use of any one of claims 1 to 3, wherein the medicament is to be administered daily for five days every four weeks.

5. The use of claim 4, wherein the medicament is to be administered daily for five consecutive days every four weeks.