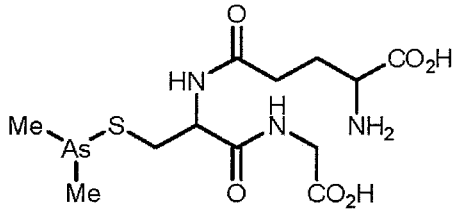
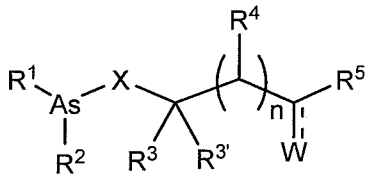
Summary

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 acute myelocytic leukemia, acute promyelocytic leukemia, myelodysplasia or myeloproliferative disorders.

The present disclosure provides organic arsenical compounds with anti-cancer properties. 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-$COOR^6$;

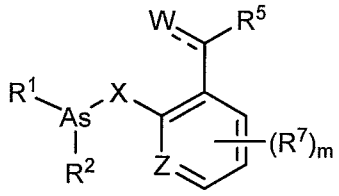
$R^{3'}$ is H, amino, cyano, halogen, aryl, aralkyl, heteroaryl, heteroaralkyl, carboxyl, C_{1-10}alkyl, C_{1-10}alkenyl, or C_{1-10}alkynyl, preferably H;

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

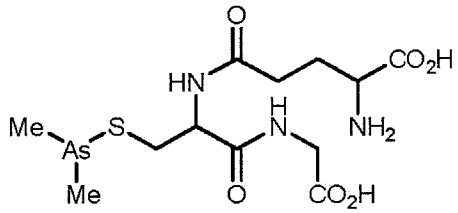
R^6 is H or C_{1-10}alkyl.

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



CLAIMS:

1. Use of a compound of formula (I)



(I)

or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for treating acute myelocytic leukemia, acute promyelocytic leukemia, myelodysplasia or myeloproliferative disorders.

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

3. The use of claim 1 or 2, wherein the medicament is for treating acute myelocytic leukemia, or acute promyelocytic leukemia.

4. The use of claim 1 or 2, wherein the medicament is for treating myelodysplasia or myeloproliferative disorders.