

Claims

What is claimed is:

1. An *in vitro* method of predicting the sensitivity of the growth of a tumor cell to an AKT inhibitor, comprising determining the presence of a mutation to AKT, wherein the presence of a mutation to AKT correlates with sensitivity of the cell to the AKT inhibitor.
2. The method of claim 1, wherein the presence of the mutation to AKT correlates with increased sensitivity of the cell to an ATP competitive AKT inhibitor.
3. The method of claim 1, wherein the presence of the mutation to AKT correlates with decreased sensitivity of the cell to an an allosteric AKT inhibitor.
4. The method of claim 1, wherein the presence of the mutation to AKT correlates with decreased sensitivity of the cell to a pan-PI3K AKT inhibitor.
5. The method of any one of claims 1-4, wherein the mutation corresponds to, or aligns with, a mutation depicted in Table 1, Table 2, Figure 2, Figure 3, Figure 16 or Figure 17.
6. The method of claim 5, wherein the mutation corresponds to, or aligns with, L52, K189 or D323.
7. The method of any one of claims 1-6, wherein the AKT is AKT1, AKT2 or AKT3.
8. The method of claim 7, wherein the AKT is AKT1.
9. The method of any one of claims 1-8, wherein the mutation to AKT disrupts the interaction between the PH-domain and the kinase domain of AKT.

26. The method of any one of claims 1-25, further comprising obtaining a physiological sample from a patient for determining the presence of the mutation to AKT.

27. The method of claim 26, further comprising determining the presence of the mutation to AKT in the physiological sample.

28. The method of any one of claims 1-27, further comprising informing a patient for whom the presence of a mutation to AKT is determined that an AKT inhibitor should be administered.

29. The method of any one of claims 1-27, further comprising informing a patient for whom the presence of a mutation to AKT is determined that an AKT inhibitor should not be administered.

30. Use of GDC-0068 or a salt thereof in the manufacture of a medicament
~~for a method of treating a cancer cell comprising one or more of a PI3k, PTEN,~~
~~and AKT mutation, the method comprising administering to the cell GDC-0068~~
~~or a salt thereof.~~