METHODS OF TREATING CANCER HARBORING HEMIZYGOUS LOSS OF TP53

ABSTRACT

Provided herein are methods of treating a patient having a cancer that exhibits (i) a hemizygous loss of the *TP53* gene; (ii) a hemizygous loss of the *POLR2A* gene; and/or (iii) a decreased level of expression of a *POLR2A* gene product relative to a reference (*i.e.*, control) expression level. The methods comprise administering a therapeutically effective amount of a POLR2A inhibitor (*e.g.*, a nucleic acid that inhibits the expression of a POLR2A protein, an amatoxin, alpha-amanitin, or alpha-amanitin conjugated to a cell targeting moiety, such as an EpCAM antibody) to a patient having or determined to have (i) a hemizygous loss of the *TP53* gene; (ii) a hemizygous loss of the *POLR2A* gene; and/or (iii) a decreased level of expression of a *POLR2A* gene product relative to a reference (*i.e.*, control) level.

[No suitable figure]