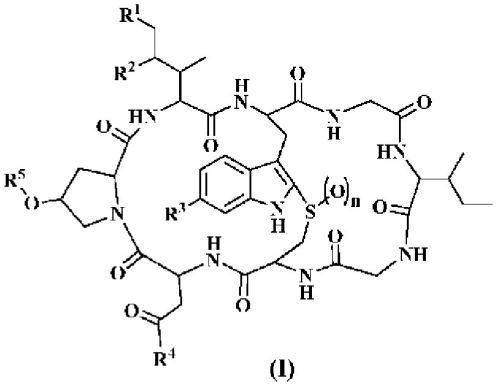
Claims

1. A toxin conjugate of Structural Formula (I) or its pharmaceutically acceptable salt thereof, comprising a toxin moiety and a biological macromolecule moiety:



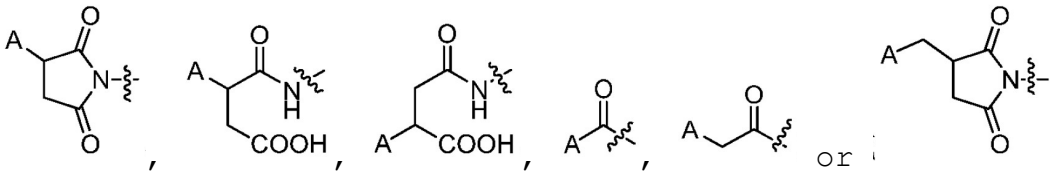
(I)

wherein:
n = 0, 1 or 2,
R^1 corresponds to -H or -OH,
R^2 corresponds to -H or -OH,
R^3 corresponds to -H, -OH or C_{1-6} alkyl,
R^4 corresponds to $-NH_2$ or -OH,
R^5 corresponds to -L-A, wherin A corresponds to the biological macromolecule moiety that is configured to bind to a target, and L corresponds to any chemical structure connecting the toxin moiety and the biological macromolecule moiety, and wherein the toxin moiety comprises an amanitin derivative.

2. The toxin conjugate of claim 1 or its pharmaceutically acceptable salt thereof, wherein L comprises a cleavable or non-cleavable chemical structure.

3. The toxin conjugate of claim 1 or its pharmaceutically acceptable salt thereof, wherein A comprises an antibody or its antigen-binding fragment or antigen-binding polypeptide thereof.

4. The toxin conjugate of claim 1 or its pharmaceutically acceptable salt thereof, wherein –L-A comprises at least one of the following structures:



5. The toxin conjugate of claim 1 or its pharmaceutically acceptable salt thereof, wherein L is connected to the toxin moiety via an ester or ether bond.

6. A drug compound comprising the toxin conjugate of any one of claims 1 to 5, or a pharmaceutically acceptable salt thereof.

7. Use of a toxin conjugate of any one of claims 1 to 5 or a compound of claim 6 in the preparation of a medicament for the treatment of tumors or cancer.

8. The use of claim 7, wherein the tumor or cancer is selected from: lung cancer, kidney cancer, urinary tract cancer, colorectal cancer, prostate cancer, glioblastoma, ovarian cancer, pancreatic cancer, breast cancer, melanoma, liver cancer, bladder cancer, malignant lymphoma, leukemia, gastric cancer, or esophageal cancer.