NIH NATIONAL CANCER INSTITUTE Center for Cancer Research



Terminologies for Defining and Recording Organoid Culture Status

When defining the outcome of an organoid culture initiated from a patient's tumor (surgical material or biopsy), we use the following terminology to communicate, define, and document the culture's status. We find that these definitions facilitate communications among and between laboratory members and for publications.

1. Failed due to lack of tumor cells: (select one)

- The size of the tumor tissue was too small.
- Too much blood in the tissue.
- The tissue received was non-tumor, adjacent material.

2. Initiation Phase:

• There are live tumor cells upon plating, but they have not yet begun to proliferate.

3. Expansion Phase:

• Presence of viable cells over days to weeks, and able to sustain a 1:1 passage with occasional 1:2 passage.

4. Establishment Phase:

• The organoid line can be expanded at the rate of 1:2 split for more than three consecutive passages and shows evidence of cell number increase after every passage.

5. Established organoid line:

• The organoids can sustain a continuous 1:2 or 1:3 split over 8-10 passages.