IDEA2 2022 | Need Statement Template

**Precision Cancer based on Rapid and Affordable Single-cell Omics**

Anyone receiving a cancer diagnosis experiences the need to rush into treatment. And that’s the right thing to do, as one month's delay raises the risk of death by around 10% (1). But expensive and time-consuming diagnostic protocols are needed for accessing effective cancer therapies with minimum side effects.

Oncologists are concerned with the lack of effectiveness of cancer therapies and currently try to avoid that outcome by using diagnostic tools based on molecular signals from cancer cells(2).

However, that approach fails as with few exceptions, cancer therapies at some moment stop working.

A key cause for that failure is that current DNA sequencing applications extracting molecular signals from cancer cells provide just a low-resolution view. This hinders the true heterogeneity of cancer cells, the ultimate cause of cancer progression and drug resistance (3).

Accordingly, there is a need for a new generation of rapid and affordable DNA sequencing applications enabling a high-resolution view of the heterogeneity of cancer cells(4).

Which if solved would lead to an improvement in prevention, early detection, and treatment of cancer.

**References**

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