WHY SHOULD YOU INVEST?

We have known one of the primary drivers of cancer since 1965. But even after all those decades, we still do not know major pieces of the puzzle or to put it quite frankly, we have blown past them. The thing that puts such aggressiveness and progression of certain cancers into one cohesive thread is ecDNA.
ecDNA occurs in 17% of all cancerous tumours or 1 in 6 of all cancer patients have it. Though you would think that such a common element to cancer would have been looked into and treated, that is not the case. Many of the key mechanisms in our understanding of it are missing. One thing we know is it magnifies genes, in worst cases, upto 250 times the original gene expression.
It almost acts like an organism of its own, randomly giving genes to cells. And that unpredictable segregation is found recurrently in the sites of tumerogenesis or the conversion of normal cells to cancer cells. And even worse, 65% of these ecDNAs amplify oncogenes specifically, acting as a villain in our need to cure cancer.
It is strongly associated with TP53 mutations, and guess what, TP53 mutations account for 50% for all cancer cells.
It has very high prevelance in Upper GI cancer, brain cancer and aggressive strains of breast cancer; numbers reaching as high as 30%.
34% of oncogene-amplified ecDNAs also magnify genes that regulate the immune system. And it is shown that such ecDNA-containing tumours have lower immune system infiltration. Patients with ecDNA samples in their blood have a lower overall survival rate compared to patients with other problems. Treatment allows it to adapt quickly due to random segregation, leaving almost no hope for doctors.
But efforts are being made, many teams are working on current solutions. But a big hurdle is the inability for robust screening as they look like broken cell fragments. Those areas require larger funding programs and better campaigns for visibilty.
We need to solve this…now. Otherwise patients will keep dying, and doctors would have known the problem but never be able to fix it.
All our research is worthless, if we can’t get the drug onto the doctor’s hand and into the patient’s system. ecDNA is dismantling our prospect to help lives, we have been able to go through challenges before but not of these complexity. Even if we have gone through such challenges, we have done that only because someone lent a hand.
And right now, that hand is weak. We require funding, to save patients today and save the future tomorrow.