



PRESS RELEASE

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ZICCUM AB releases blueprint of world's first industrial plant producing air-dried vaccines requiring no Cold Chain

“Vaccinating the world against COVID-19 will be one of the largest mass undertakings in human history” as UNICEF, the WHO, analysts, NGOs and governments worldwide warn of the escalating challenge the Cold Chain represents to vaccine coverage in both the developed and developing world, Swedish vaccine formulation company Ziccum releases its blueprint of the world’s first industrial plant for producing thermostable, ambient-dried vaccines at volume. The new vaccines could be produced at an estimated 65% lower OPEX and 50% lower CAPEX cost than today’s freeze-dried vaccines.

The blueprints are part of a White Paper that describes in detail how Ziccum AB’s LaminarPace technology can be integrated into an agile, modular Fill and Finish (F/F) facility formulating and packaging the new thermostable air-dried vaccines. The vaccines produced could be stored and transported at ambient temperatures, requiring no Cold Chain—fully meeting WHO CTC (Controlled Temperature Chain) requirements that vaccines should be able to withstand one journey outside the cold chain for 3 days at 40°C.

The vast majority of today’s F/F plants – the final stage in vaccine manufacture and distribution - formulate vaccines as liquid or lyophilized (freeze-dried) solutions—both are complex, costly processes that require energy-intensive freezing or refrigeration and still produce end products that can require storage and transportation at up to -70° C to be viable. The White Paper’s analysis of the costs of the new facility finds that the proposed plant could produce up to 30 million vials of thermostable vaccines at an estimated 80% less energy use, 65% less OPEX costs, 50% less CAPEX costs and 80% yield compared to freeze-drying.

The plant has been co-designed by KeyPlants AB, a leading modular plant construction specialist who have designed and produced more than 50 modular projects globally, including F/F vaccine facilities.

Ziccum CEO Göran Conradson: “This is an idea whose time has come. As our understanding of pandemics and immunization grows not a day goes by without the world’s medical and healthcare experts flagging up the shortcomings and challenges of the Cold Chain. When it comes to vaccines we’re all increasingly understanding that the Cold Chain’s limitations now threaten the developed as well as developing world – and that thermostable vaccines need to be an integral part of any solutions

for future immunization and pandemic preparation. At its core, air-drying is not a new technology. We all consume many of life's essentials in dry form every day, without even thinking about it, because that way they can reach more people, quickly and cost-effectively. So why can't we do the same with vaccines? The fact is—we can. Let's set vaccines free. The time for action is now.”

Read the complete White Paper on <https://ziccum.com/resources/>

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About Ziccum

Ziccum AB (publ) develops new patented formulations of vaccines where sensitivity to temperature differences, especially during transportation, currently limits medical and so commercial potential. The company's patented technology, LaminarPace, develops dry powder formulations of vaccines that currently only exist in liquid, or in lyophilized form. By doing so Ziccum can increase the availability of drugs and vaccines in existing markets—and open up new ones.

This press release has been submitted for publication by the company's CEO on Monday 2 November 2020.