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A RAPID RESPONSE VACCINE MANUFACTURING PLATFORM AS A COUNTERMEASURE TO EPIDEMIC THREATS

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The preparedness and rapid response to emerging infectious diseases outbreaks remains challenging due to limited market incentives. The development and manufacturing of vaccines are today facing bottlenecks in development time as well as in cost-effectiveness in order to be able to react rapidly and deliver low-cost, high-quality vaccines.

New initiatives, such as the CEPI “Coalition for Epidemic Preparedness Innovations” are focusing on accelerating vaccine development for priority diseases and ensuring their global availability. The objective of Univercells was to design a biomanufacturing solution answering to major constraints of vaccine manufacturing enabling a fast delivery of affordable vaccines to people in need. To this end, Univercells has developed an innovative manufacturing platform combining three main process principles intensification, chaining and automation enabling a drastic reduction in footprint, cost-of-goods and scale-up risks. Such footprint reduction enables the platform to be integrated into isolators for increased safety, facilitating compliance with biosafety levels.

These low-footprint and highly contained production unit based on single-use technologies are easily and rapidly deployable and functional, offering several production strategies for epidemics preparedness and response:

- New vaccines development support with a flexible production technology suited to a range of processes
- Installation as mothball production units as they are low CAPEX for preparation to epidemics
- Rapid local deployment of new production capacities for a fast response to epidemics
- Low cost vaccines rotating stockpile generation in preparation of outbreak.

This technology enables today the development of a viral vaccines' portfolio including Polio, Measles & Rubella as well as Rabies vaccines, and could be adapted to many others.