



Novel broad spectrum SARS-CoV-2 Vaccine Gene

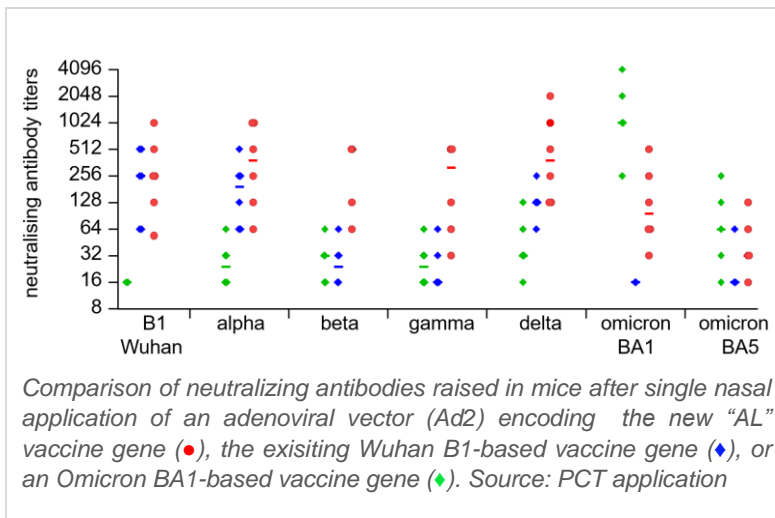
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INVENTION NOVELTY

Scientists of the Charité University Hospital Berlin have developed a novel adenovirus-based vaccine against SARS-CoV-2 which is superior to existing vaccines and provides substantially enhanced and broadened immune protection against virus variants.

VALUE PROPOSITION

The use of an adenoviral vector for gene delivery offers a needle-free route of application (e. g. as a nasal spray) which is likely to improve acceptance, to reduce side effects, and to allow self-application (no medical staff required). Especially when using an adenoviral serotype 2 vector (hAd2), vaccine neutralization by a previous adenoviral vaccination (with Ad5 or Ad26) is rendered obsolete and thus a maximum of immune protection can be reached. Additionally, the simple and inexpensive manufacturing process as well as a high storage stability make such a vaccine an effective while affordable solution for low-income countries and simplify worldwide distribution.



TECHNOLOGY DESCRIPTION

A vaccine derived from the novel vaccine gene, termed "AL", is clearly superior in its neutralizing properties compared to the currently applied Wuhan-B1 derived vaccine. Importantly, previous Omicron variant-based vaccine genes only neutralize the own subtype, but mostly fail to neutralize the older virus variants (alpha - delta) as well as other omicron subtypes (like Omicron BA5). Future SARS-CoV-2 broad-spectrum vaccine design will require bivalent vaccines composed of a gene which provides broad basic protection and a second component which is directed to the currently dominant virus variant. In this concept the novel AL vaccine gene is expected to become a key component.

COMMERCIAL OPPORTUNITY

For this technology we are looking for a licensing or/and cooperation partner for further development.

DEVELOPMENT STATUS

Mutation-adapted vaccine genes were inserted into an adenoviral vector and intranasally vaccinated into mice. Mice sera were tested in neutralization assays for the ability to induce neutralizing antibodies against SARS-CoV-2 of the original strain as well as several variants.

PATENT SITUATION

EP priority application (EP4183409A1) pending with priority of Nov. 17, 2021. PCT application filed Nov. 17, 2022.

