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(54) Title: A LIVE ATTENUATED SARS-COV-2 AND A VACCINE MADE THEREOF

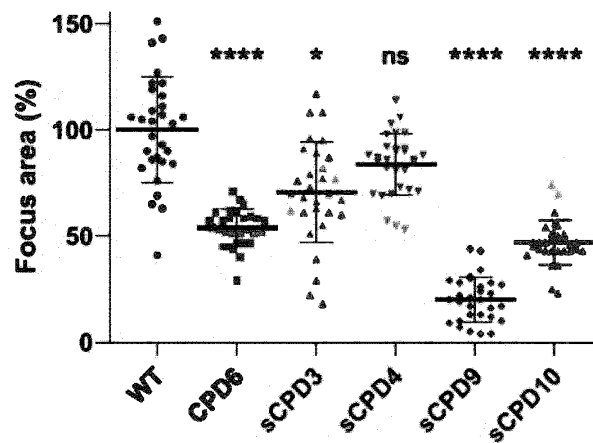


FIG 2A

(57) Abstract: The invention relates to a polynucleotide encoding a) severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike protein; and/or b) at least one non-structural SARS-CoV-2 protein selected from the group consisting of non-structural protein (7), non-structural protein (8), non-structural protein (9), non-structural protein (10), non-structural protein (11), non-structural protein (12), an endoribonuclease, and a 2'-O-methyltransferase, wherein the polynucleotide comprises or consists of at least one sequence part comprising codon-pair deoptimizations in comparison to the SARS-CoV-2 genome. The invention further relates to a live attenuated SARS-CoV-2 comprising this polynucleotide, to a vaccine comprising this live attenuated SARS-CoV-2, as well as to associated methods.



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