

Coronavirus vaccine protects against SARS

An experimental DNA vaccine induces SARS* coronavirus neutralisation and protective immunisation in mice, report researchers from the US.

They prepared two sets of cDNAs encoding the spike (S) glycoprotein of the SARS coronavirus (CoV); modified codons were used to optimise expression and to minimise the risk of the DNA combining with the genetic material of other coronavirus strains. The two versions of the vaccine differed in how much genetic material was removed from the original piece of SARS-CoV DNA. At weeks 0, 3 and 6, BALB/c mice were immunised by IM injection with the indicated plasmid (n = 5 per group) or with empty plasmid vector (controls). Thirty days after the final boost, all mice were challenged intranasally with 10^4 TCID₅₀ units of SARS-CoV (Urbani strain), and viral replication in the respiratory tract was assessed two days later. Compared with injection of vector alone, both vaccines effectively reduced viral replication in the lungs (the most potent immunogen, SDCD, resulted in a $> 10^6$ -fold reduction in viral load in the lungs, while the control group developed mean viral titres of $> 10^8$), and both vaccines resulted in a 60- to 300-fold reduction of virus titre in the nasal turbinates. Neither plasmid DNA was associated with productive SARS-CoV replication.

* severe acute respiratory syndrome

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