

Humorale und zelluläre Immunität bei heterologer Impfung von Immungesunden und Immunsupprimierten

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23.3.2022

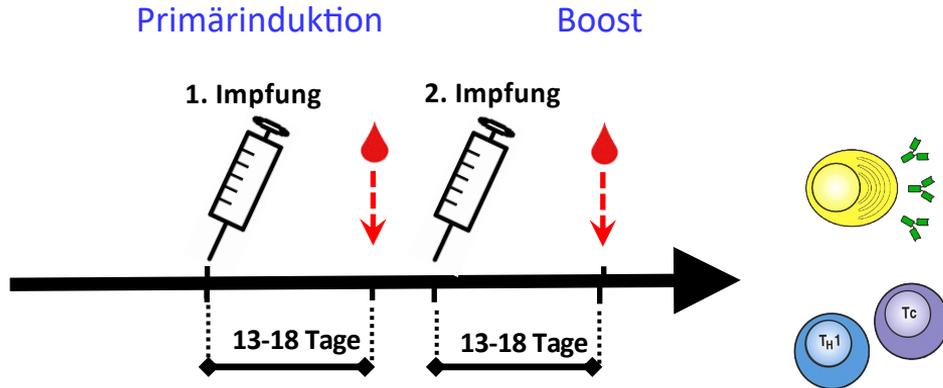
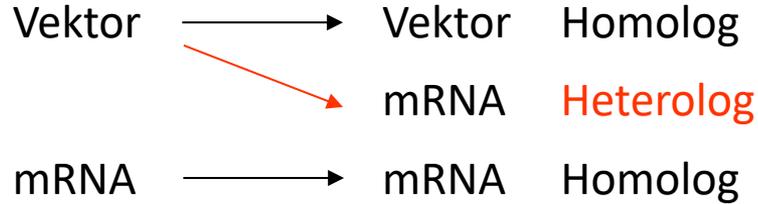


UNIVERSITÄT
DES
SAARLANDES



Transplantations- und
Infektionsimmunologie

Immunität nach COVID-19 Impfung



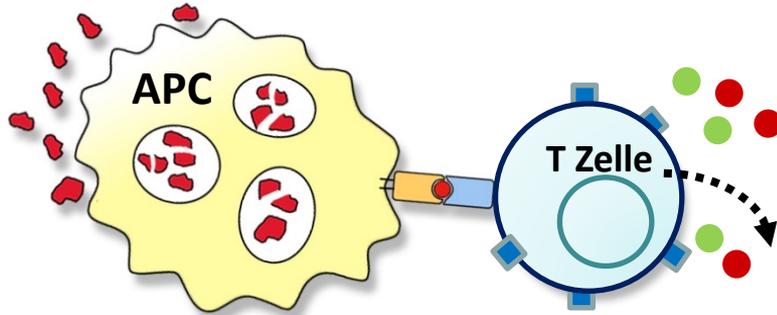
■ Analyse der Immunität

- Antikörper
 - IgG
 - Neutralisierende Aktivität
- T Zellen
 - CD4 T Zellen
 - CD8 T Zellen
- Impfnebenwirkungen

Quantifizierung und Charakterisierung SARS-CoV-2 spezifischer T Zellen

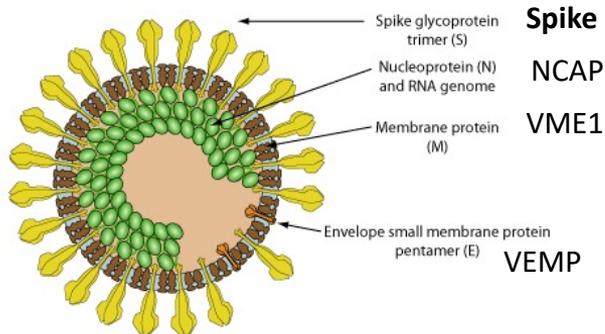
Stimuli
Spike-Peptide

Vollblut



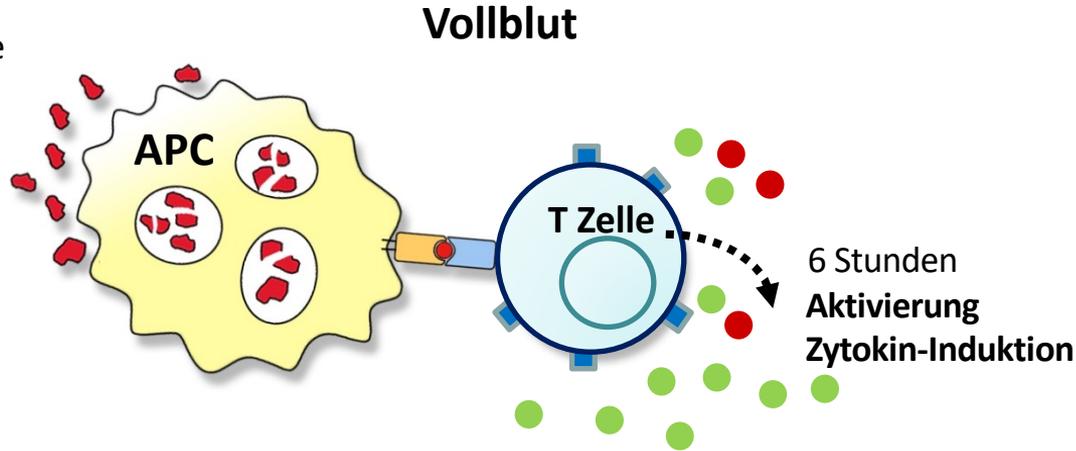
6 Stunden
Aktivierung
Zytokin-Induktion

DMSO
SEB (polyklonal)

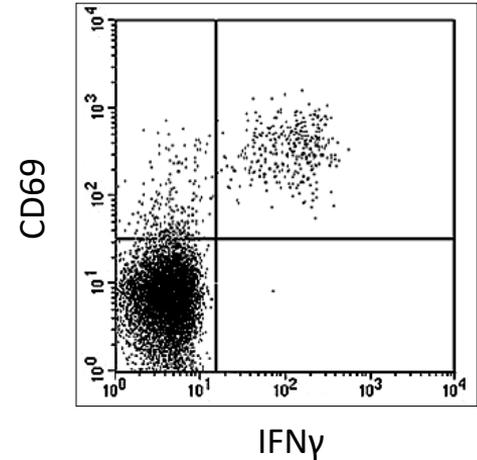


Quantifizierung und Charakterisierung SARS-CoV-2 spezifischer T Zellen

Stimuli
Spike-Peptide

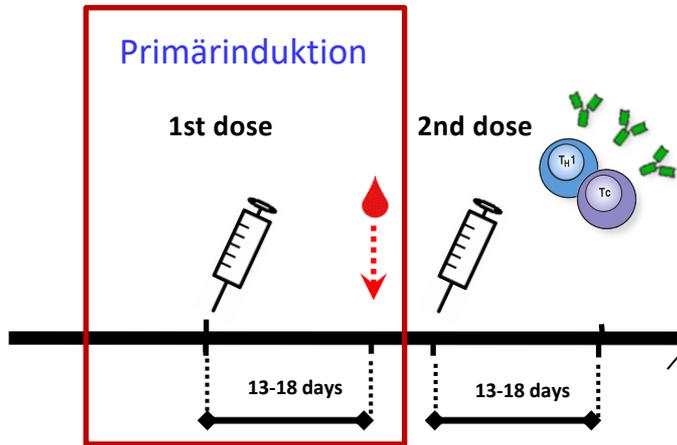


Quantifizierung über
Zytokinproduktion

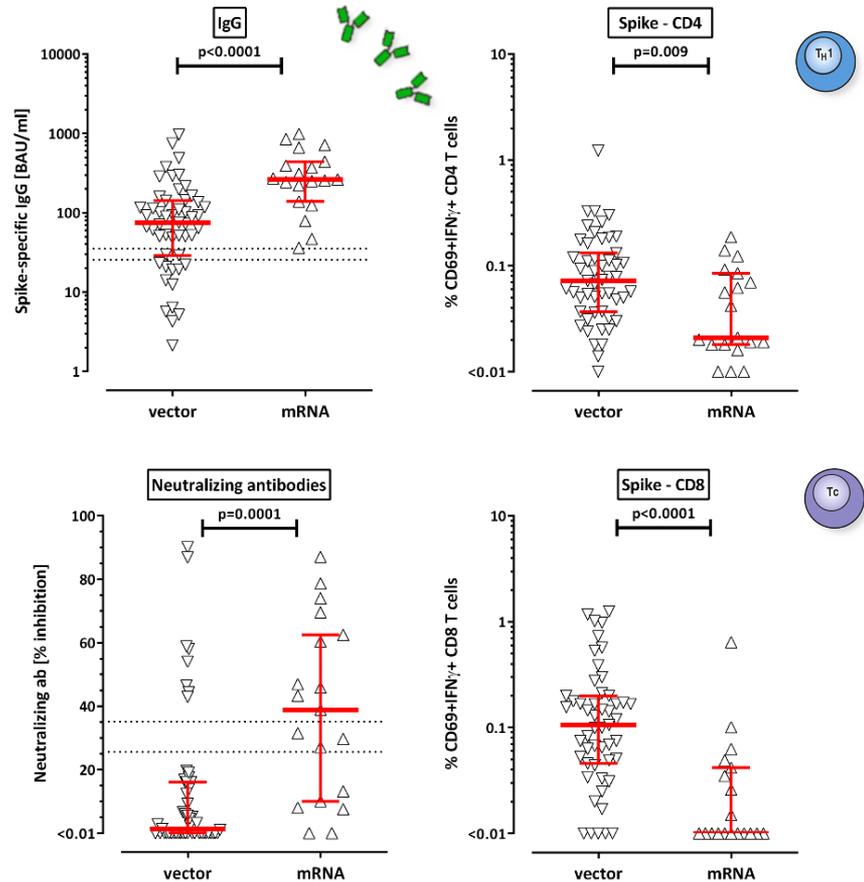


Unterschiede in der Primärantwort

Vektor –und mRNA Impfung

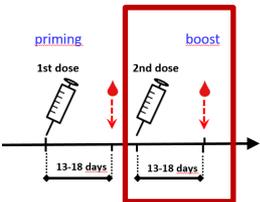
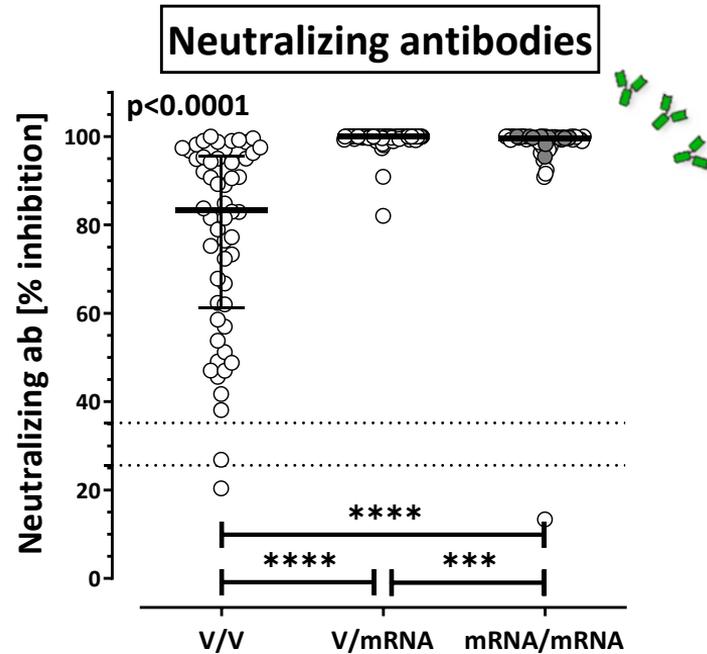
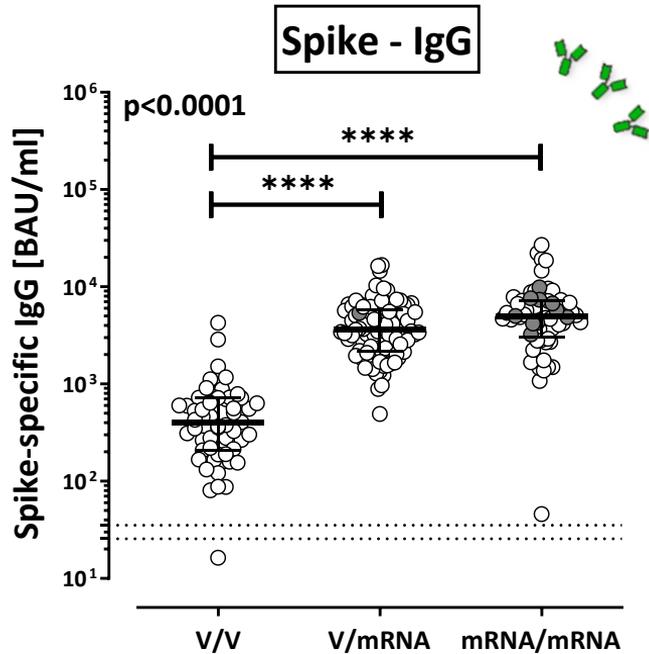


70 Immungesunde
nach Erstimpfung



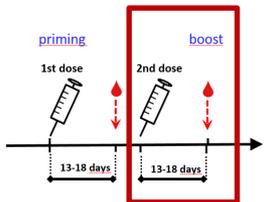
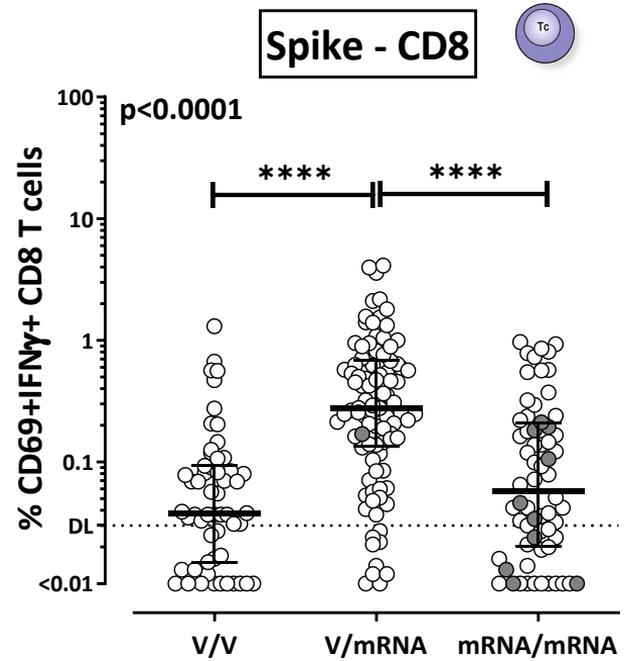
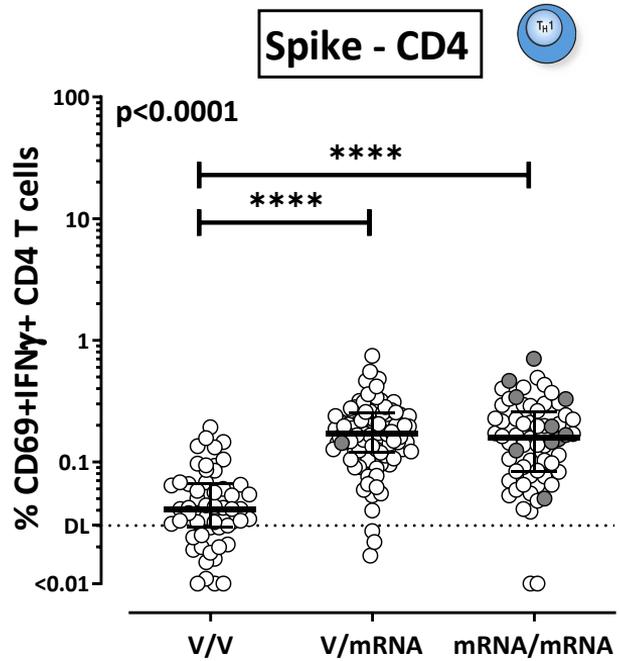
Heterologe Impfung

Deutliche Induktion von Antikörpern



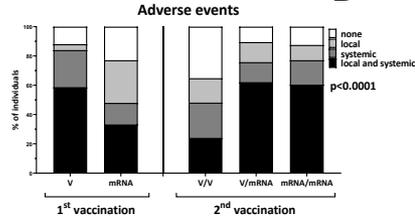
Heterologe Impfung

Deutliche Induktion von CD4 und CD8 T Zellen

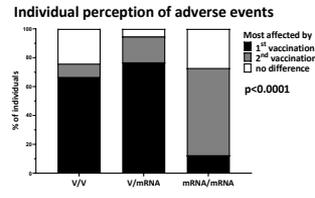


Gute Verträglichkeit

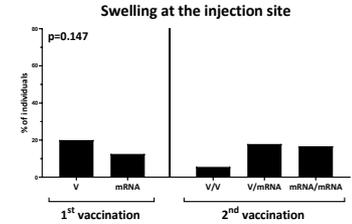
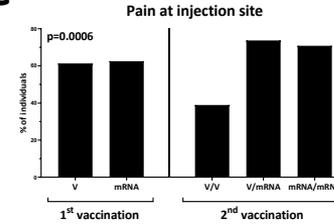
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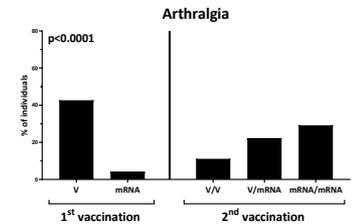
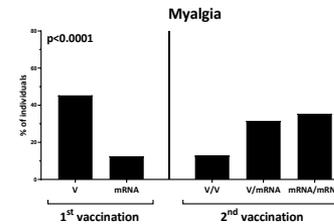
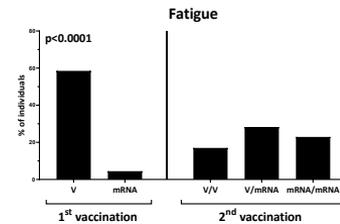
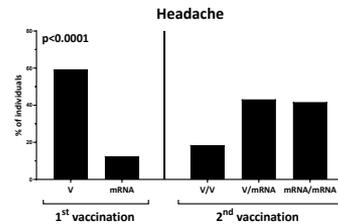
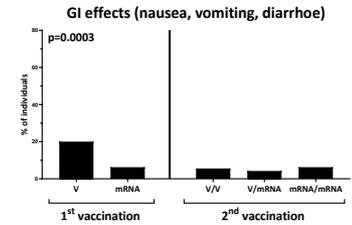
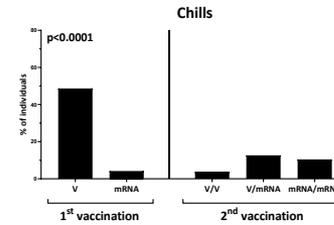
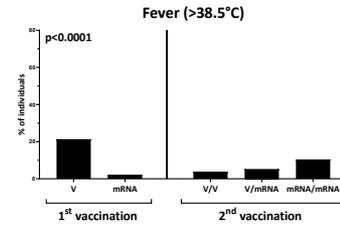
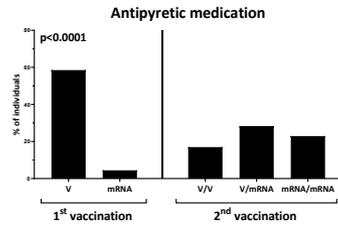
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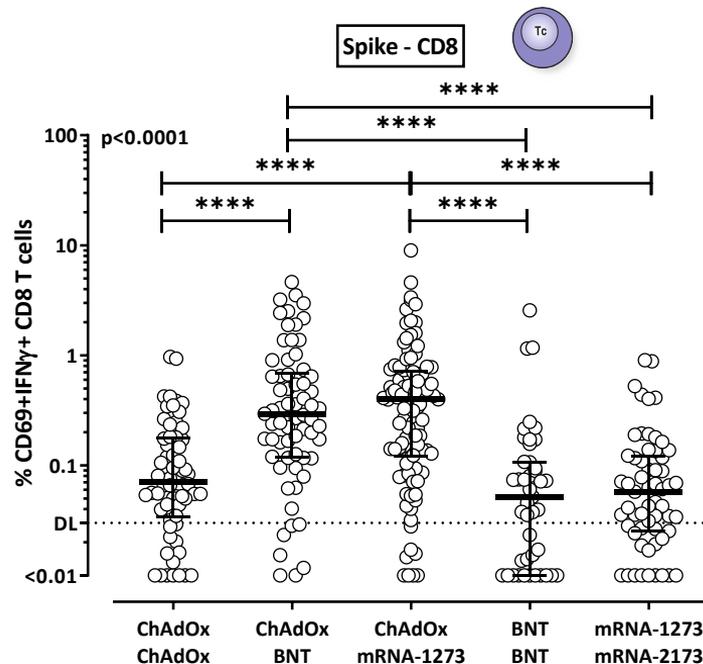
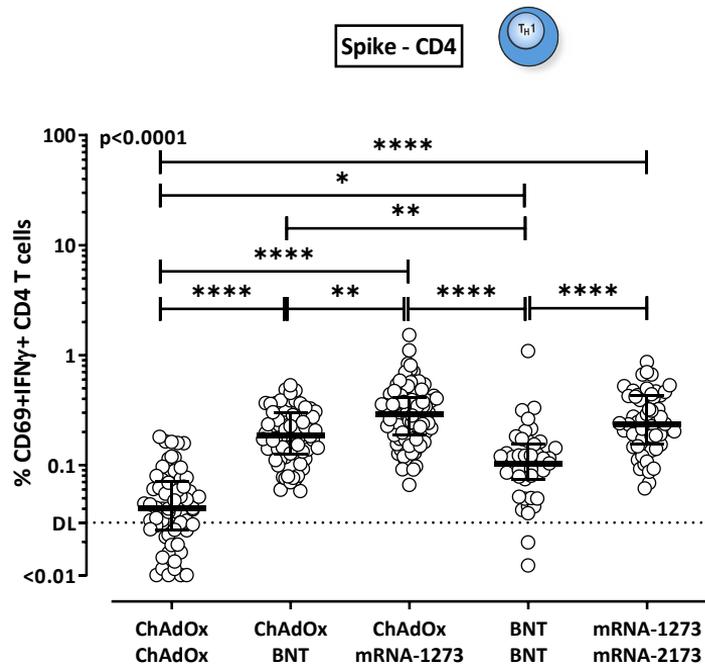
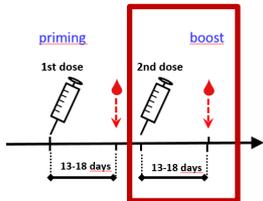
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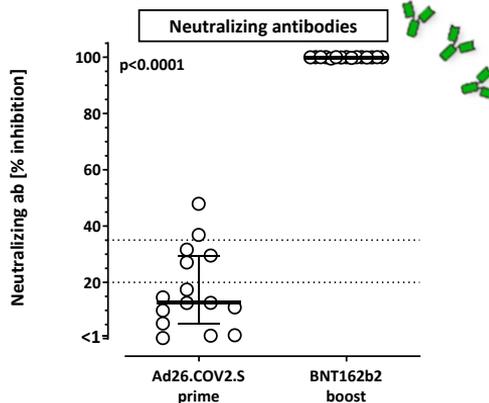
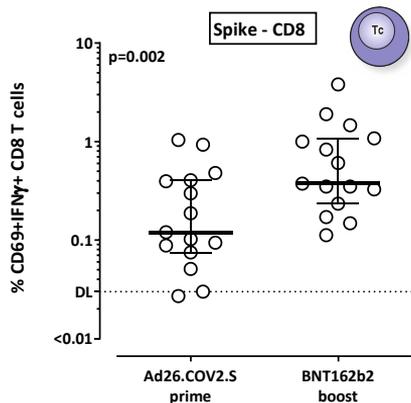
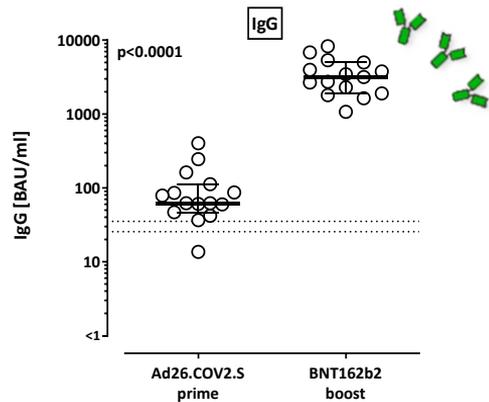
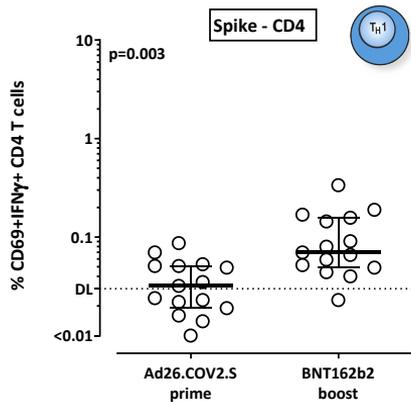
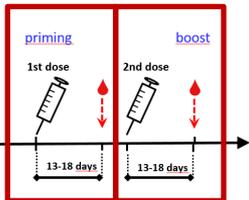
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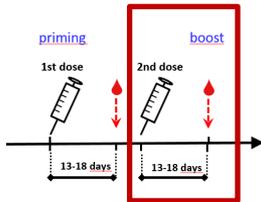


Vergleichende Analyse aller Regime

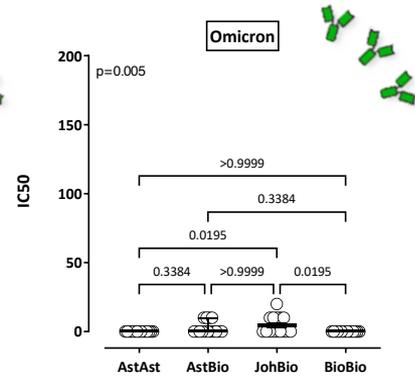
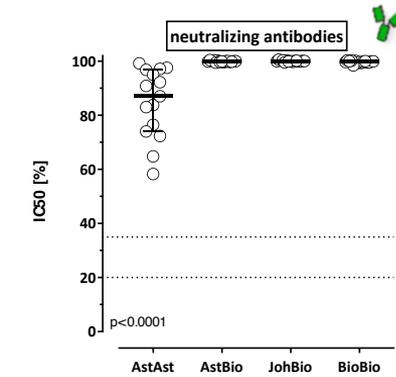
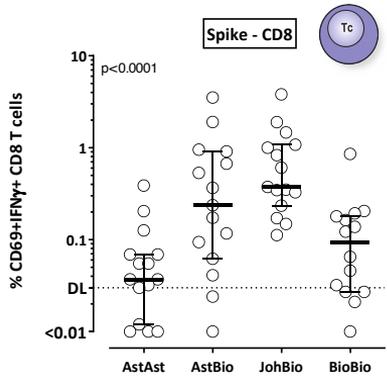
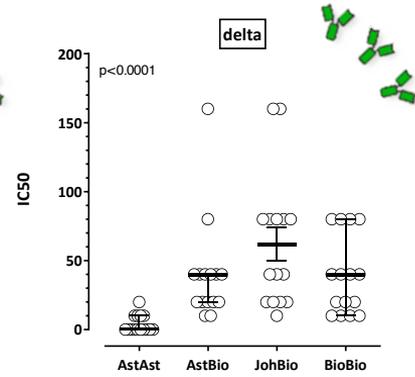
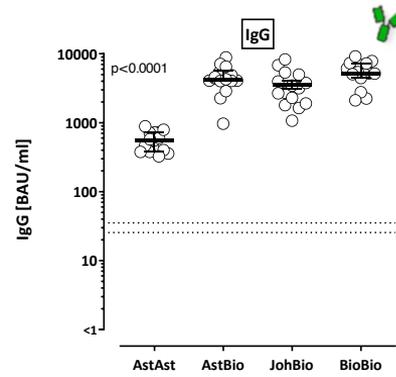
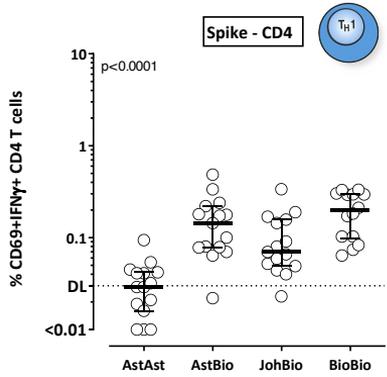


Heterologer Boost zur Optimierung einer J&J Einfachimpfung

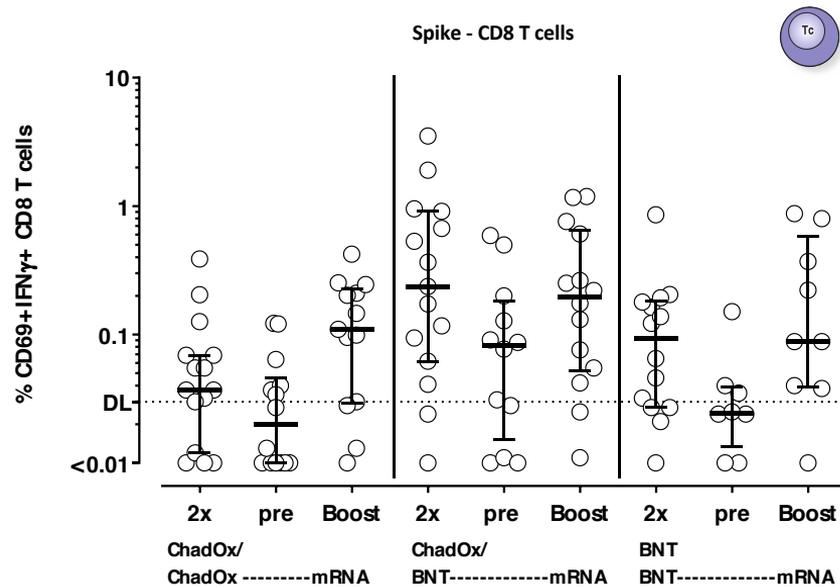
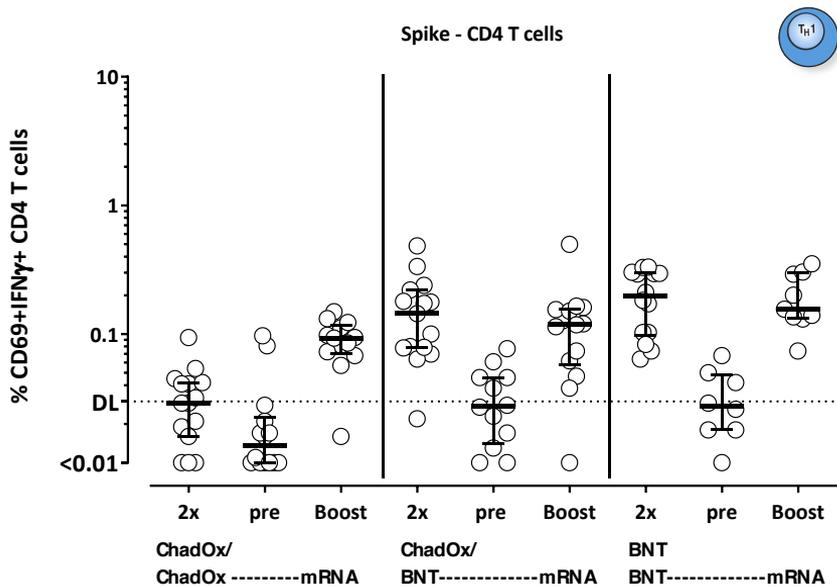
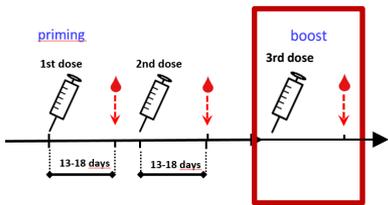




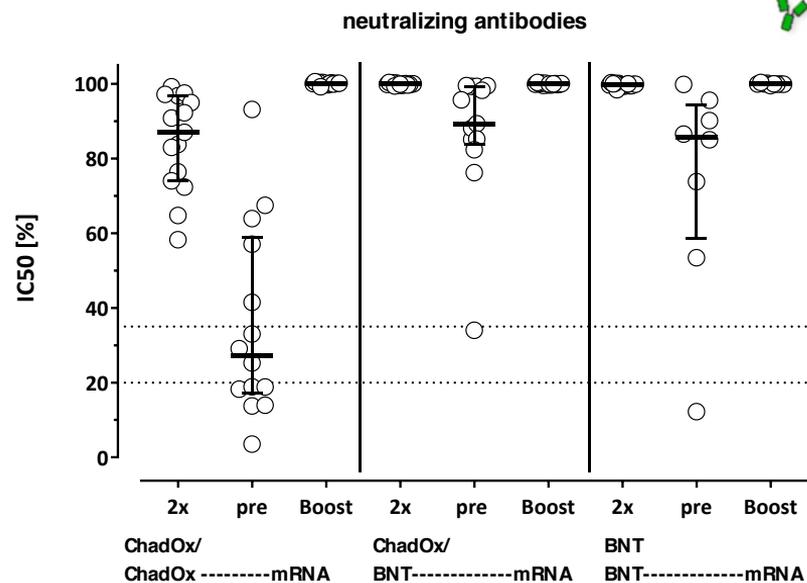
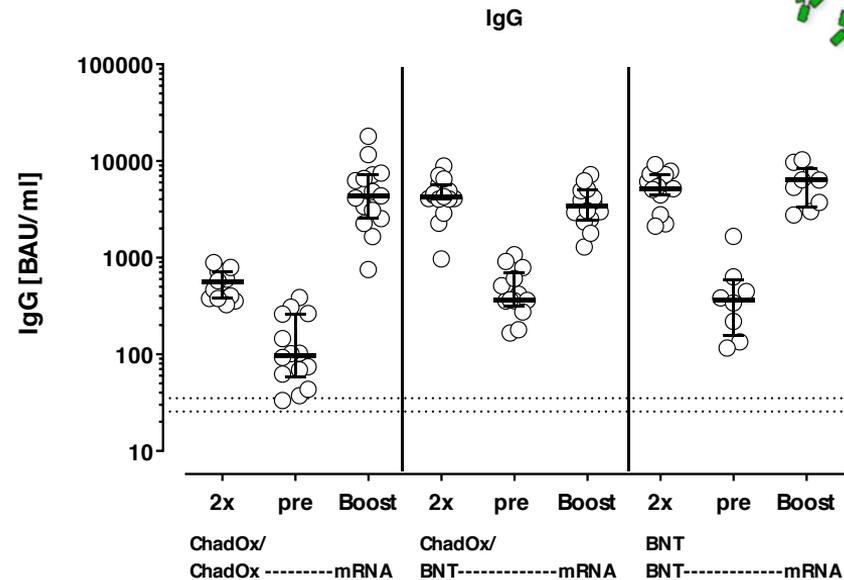
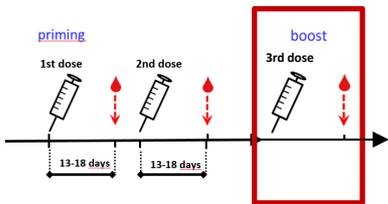
Vergleich verschiedener Regime



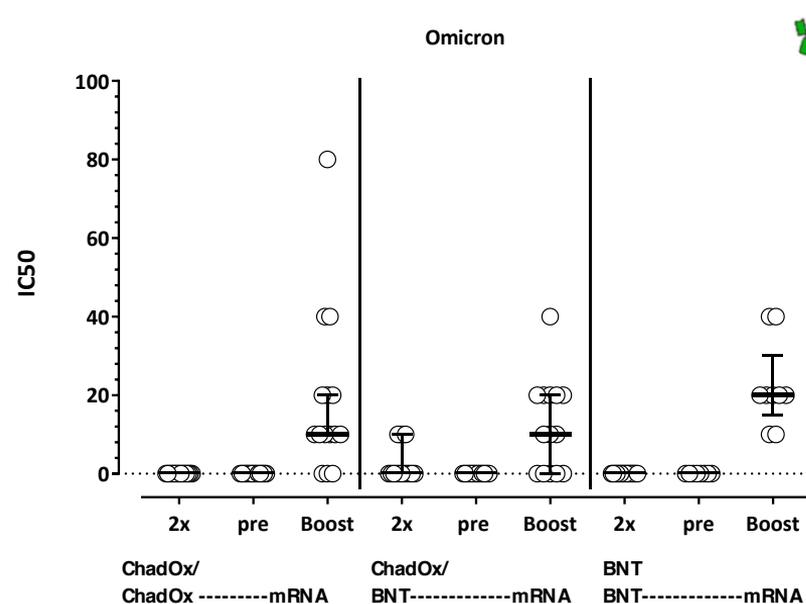
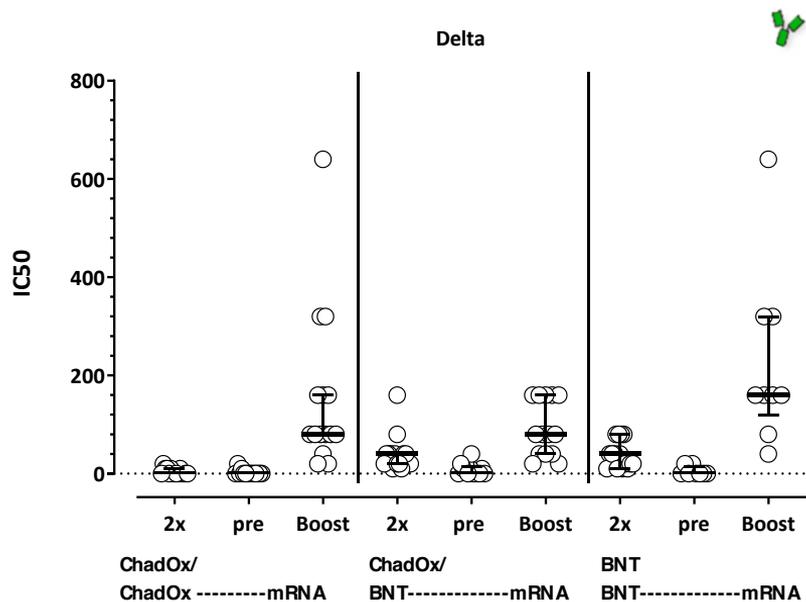
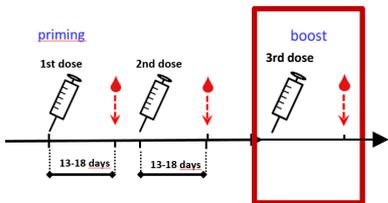
Effekt der Drittimpfung



Effekt der Drittimpfung

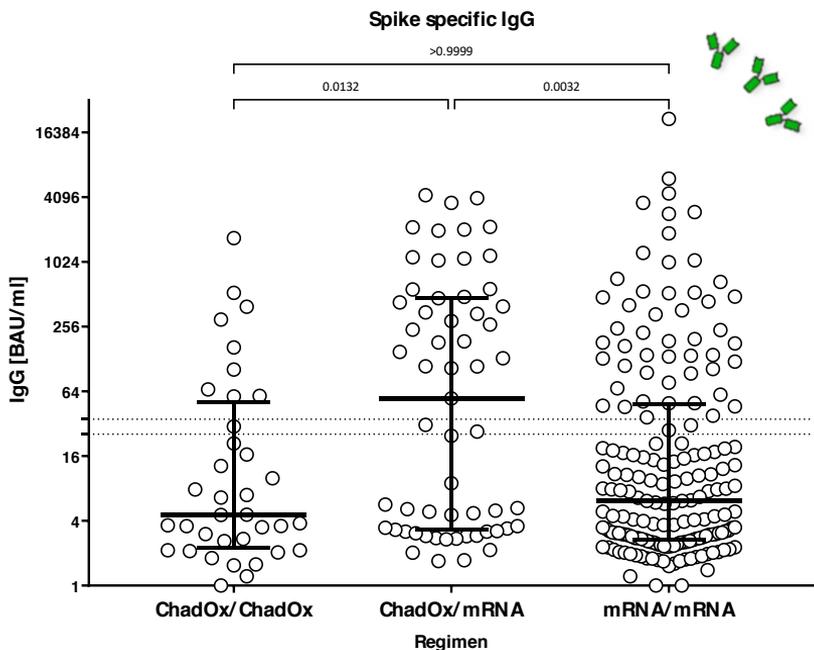


Effekt der Drittimpfung





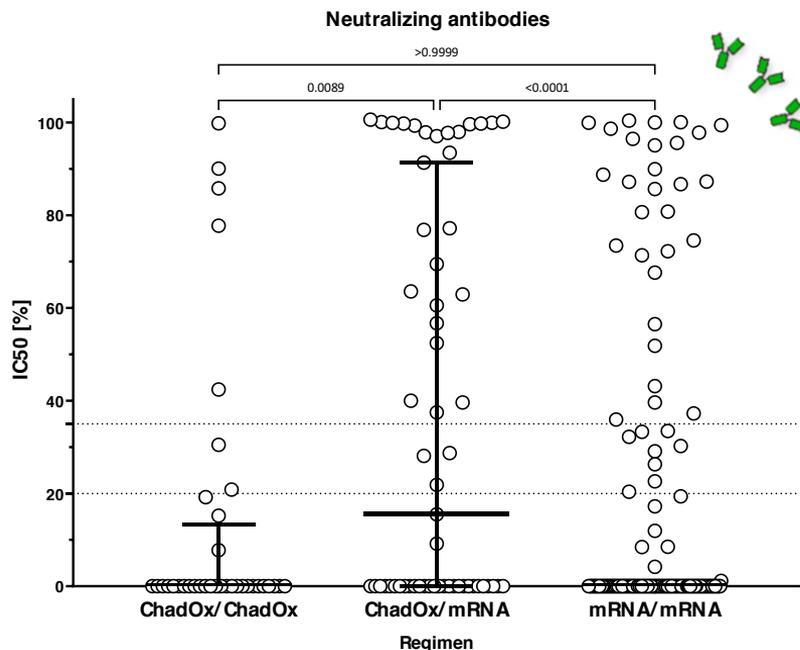
Überlegenheit der heterologen Impfung bei Transplantierten



25.0%

51.7%

27.4%



13.9%

44.8%

15.6%

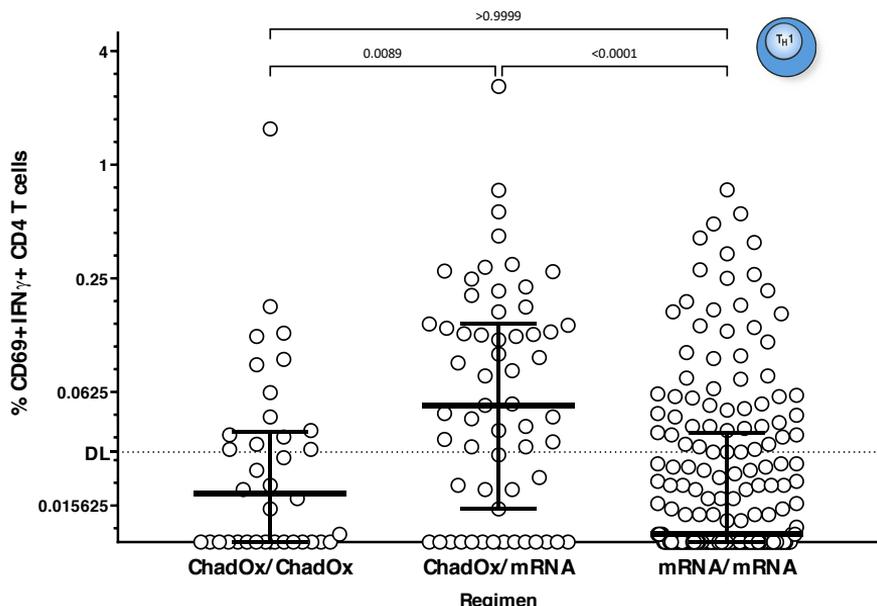
273 Patient*innen nach SOT

Schmidt et al. (2021) Am J Transplant
Schmidt et al. unveröffentlicht



Überlegenheit der heterologen Impfung bei Transplantierten

Spike specific CD4 T cells



38.9%

65.5%

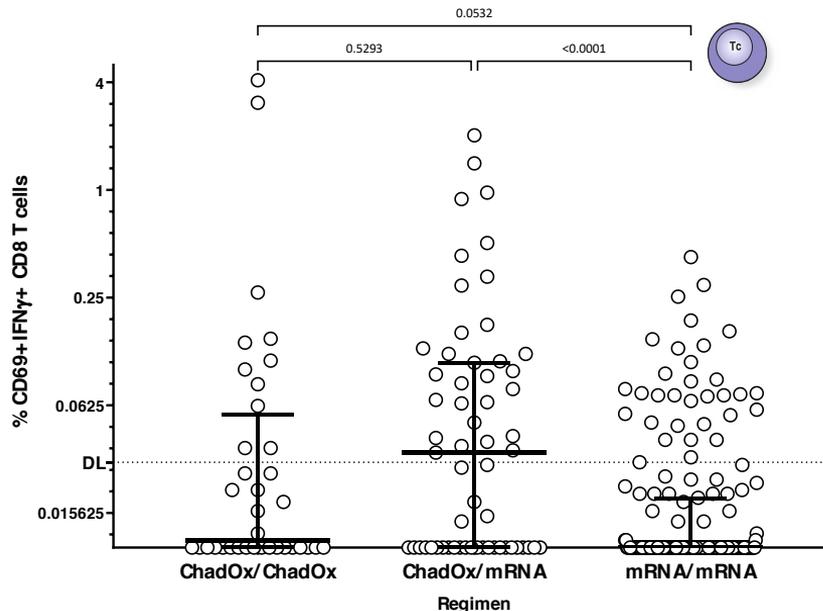
30.9%

CD4 und/oder CD8 T Zellen
Antikörper und/oder T Zellen

50.0%
52.8%

69.0%
72.4%

Spike specific CD8 T cells



30.6%

51.7%

18.0%

39.2%
43.8%

Schmidt et al. (2021) Am J Transplant
Schmidt et al. unveröffentlicht

Zusammenfassung

- Alle Regime führen zu einer Immunität
- Heterologe Impfung mit Vektor/mRNA führt zu einer deutlichen Induktion von Antikörpern und T Zellen
 - Deutlicher ausgeprägt als nach homologer Vektor-Impfung
 - Ähnlich/stärker ausgeprägt als nach homologer mRNA-Impfung
 - Stärkste Induktion von CD8 T Zellen nach heterologer Impfung
- Heterologe Impfung wird gut toleriert
- Eingeschränkte neutralisierende AK Wirkung gegen VOCs
- Bei Transplantierten ist die heterologe Impfung anderen Schemata überlegen



Vielen Dank für die
Aufmerksamkeit