

cEDIII	NS1 Δ C
--------	----------------

FIG. 1A

cEDIII	Linker-1	NS1 Δ C
--------	----------	----------------

FIG. 1B

cEDIII	truncated NS1 Δ C
--------	--------------------------

FIG. 1C

cEDIII	Linker-1	truncated NS1 Δ C
--------	----------	--------------------------

FIG. 1D



FIG. 2A

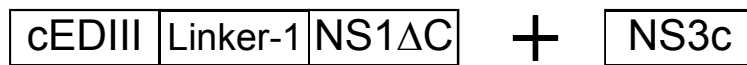


FIG. 2B

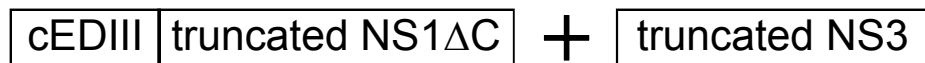


FIG. 2C

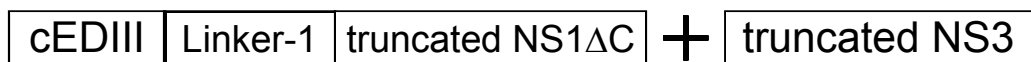


FIG. 2D

cEDIII	NS1 Δ C	NS3c
--------	----------------	------

FIG. 3A

cEDIII	Linker-1	NS1 Δ C	NS3c
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FIG. 3B

cEDIII	NS1 Δ C	Linker-2	NS3c
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FIG. 3C

cEDIII	Linker-1	NS1 Δ C	Linker-2	NS3c
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FIG. 3D

cEDIII	truncated NS1 Δ C	truncated NS3
--------	--------------------------	---------------

FIG. 3E

cEDIII	Linker-1	truncated NS1 Δ C	truncated NS3
--------	----------	--------------------------	---------------

FIG. 3F

cEDIII	truncated NS1 Δ C	Linker-2	truncated NS3
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FIG. 3G

cEDIII	Linker-1	truncated NS1 Δ C	Linker-2	truncated NS3
--------	----------	--------------------------	----------	---------------

FIG. 3H

NS1 Δ C	cEDIII
----------------	--------

FIG. 4A

NS1 Δ C	Linker-1	cEDIII
----------------	----------	--------

FIG. 4B

truncated NS1 Δ C	cEDIII
--------------------------	--------

FIG. 4C

truncated NS1 Δ C	Linker-1	cEDIII
--------------------------	----------	--------

FIG. 4D



FIG. 5A



FIG. 5B



FIG. 5C

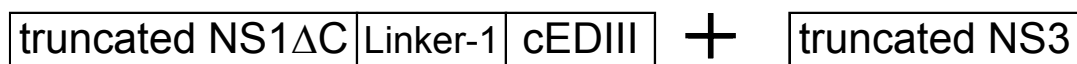


FIG. 5D



FIG. 6A

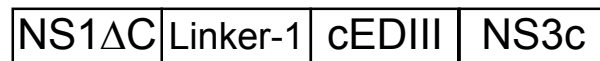


FIG. 6B



FIG. 6C



FIG. 6D

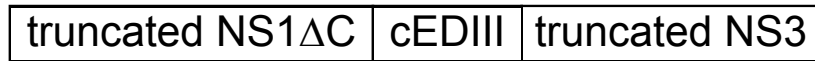


FIG. 6E

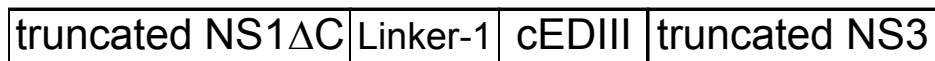


FIG. 6F



FIG. 6G



FIG. 6H

truncated NS1 Δ C	truncated NS3
--------------------------	---------------

FIG. 7A

truncated NS1 Δ C	Linker-1	truncated NS3
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FIG. 7B

truncated NS3	truncated NS1 Δ C
---------------	--------------------------

FIG. 8A

truncated NS3	Linker-1	truncated NS1 Δ C
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FIG. 8B

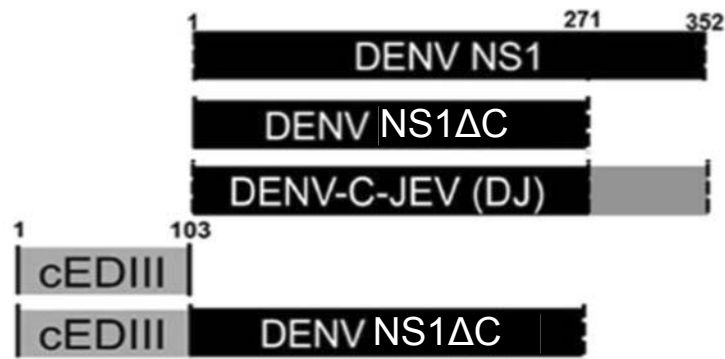


FIG. 9A

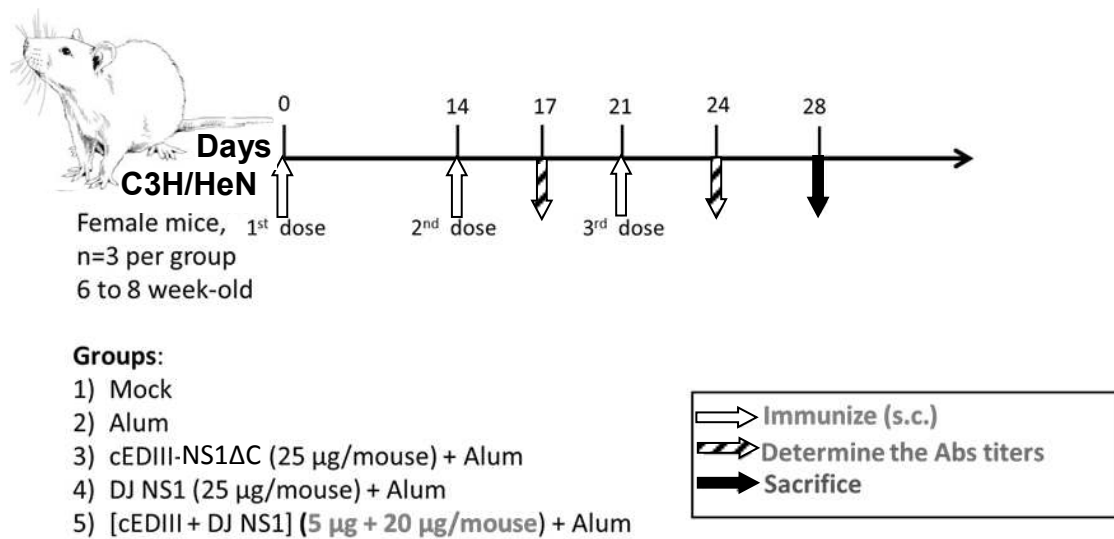


FIG. 9B

Times of immunization	Antibody titer ($\times 10^3$)											
	DJ NS1 serum (25 μ g)		cEDIII-NS1 Δ C serum (25 μ g)						cEDIII + DJ NS1 serum (5 μ g + 20 μ g)			
	Anti-DJ NS1		Anti-cEDIII		Anti-DJ NS1		Anti-NS1 Δ C		Anti-cEDIII		Anti-DJ NS1	
	IgM	IgG	IgM	IgG	IgM	IgG	IgM	IgG	IgM	IgG	IgM	IgG
2 nd	2 ¹	2 ¹	2 ³	2 ³	2 ³	2 ³	2 ⁴	2 ⁴	2 ⁴	2 ⁴	2 ⁴	2 ⁴
3 rd	2 ²	2 ⁴	2 ⁵	2 ⁷	2 ⁶	2 ⁷	2 ⁶	2 ⁷	2 ⁵	2 ⁶	2 ⁴	2 ⁶

FIG. 9C

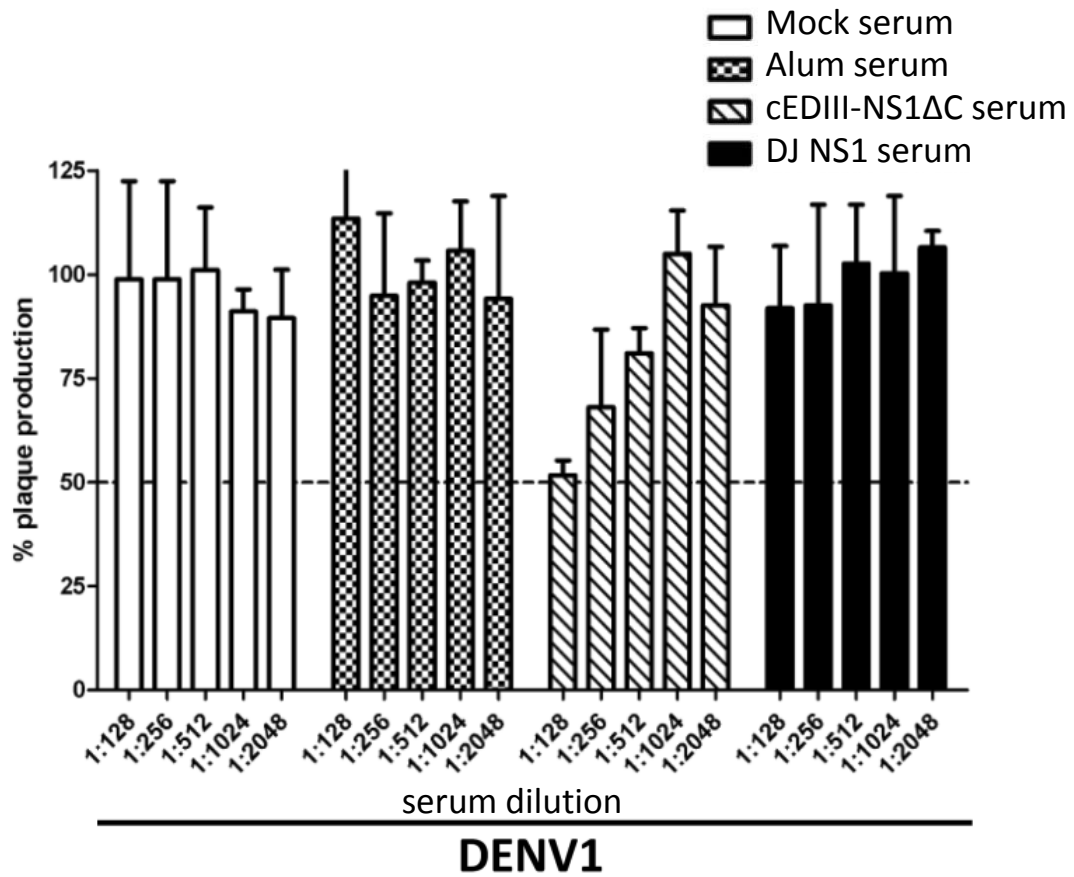


FIG. 10A

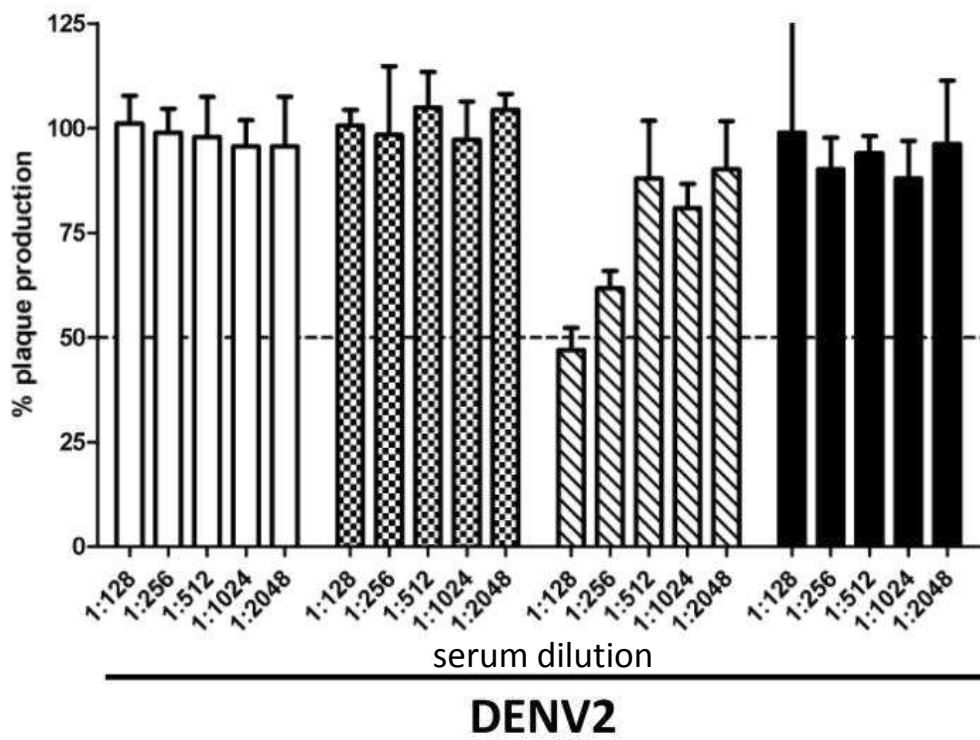
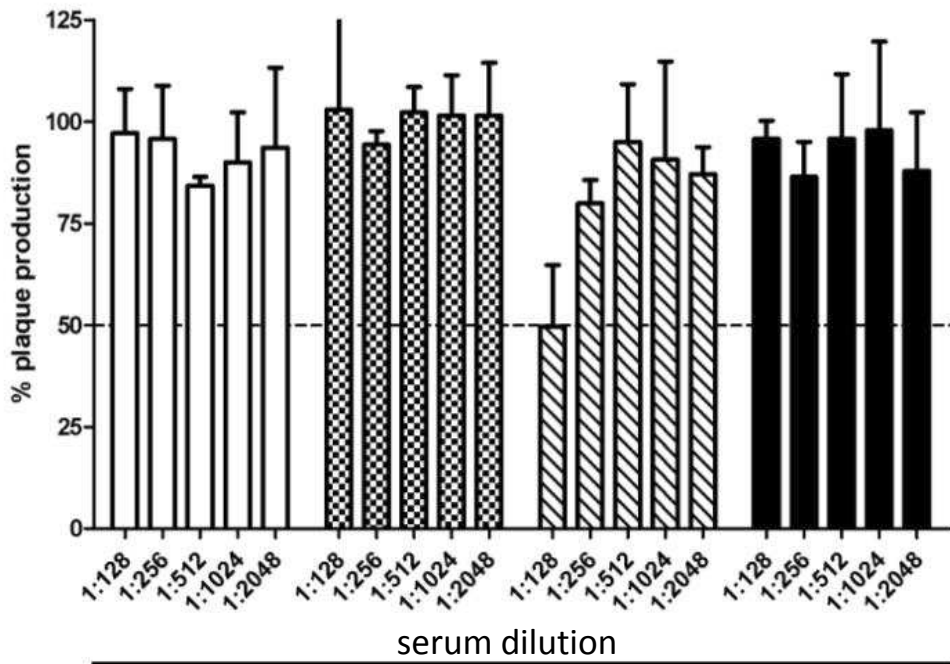
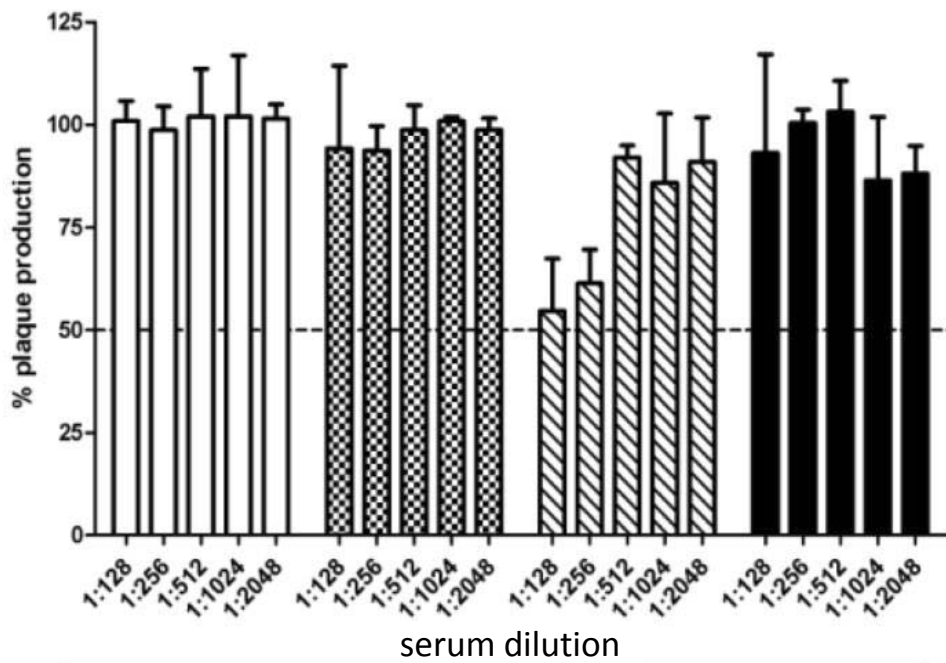


FIG. 10B

**DENV3****FIG. 10C****DENV4****FIG. 10D**

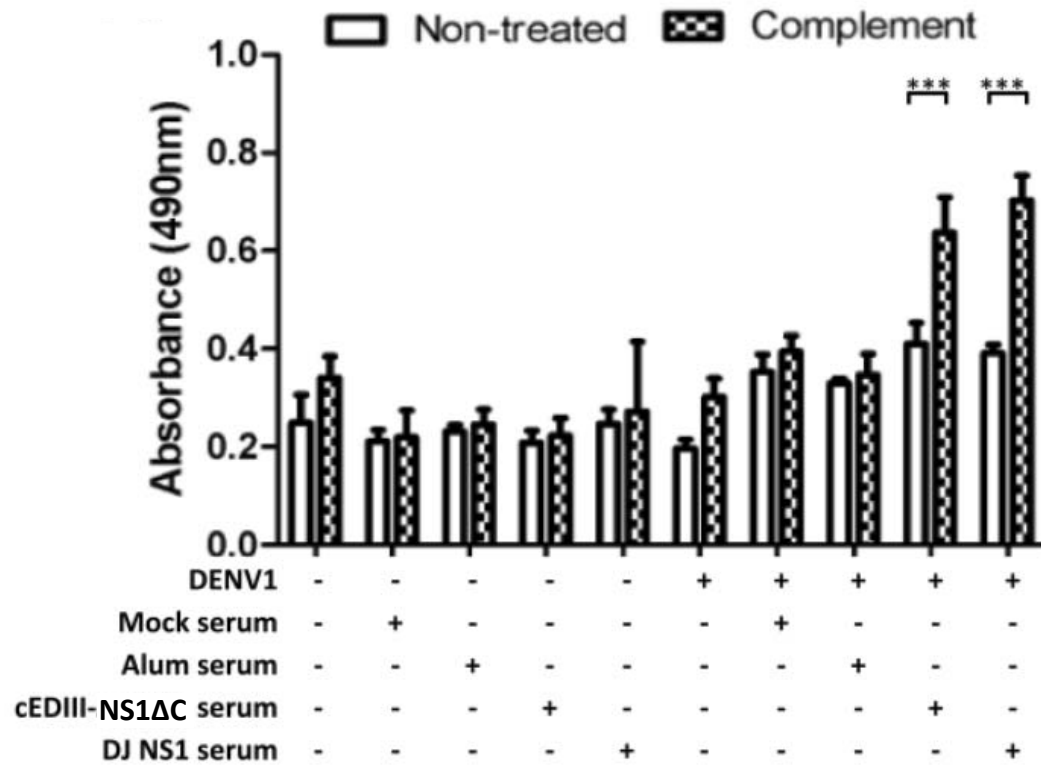


FIG. 11A

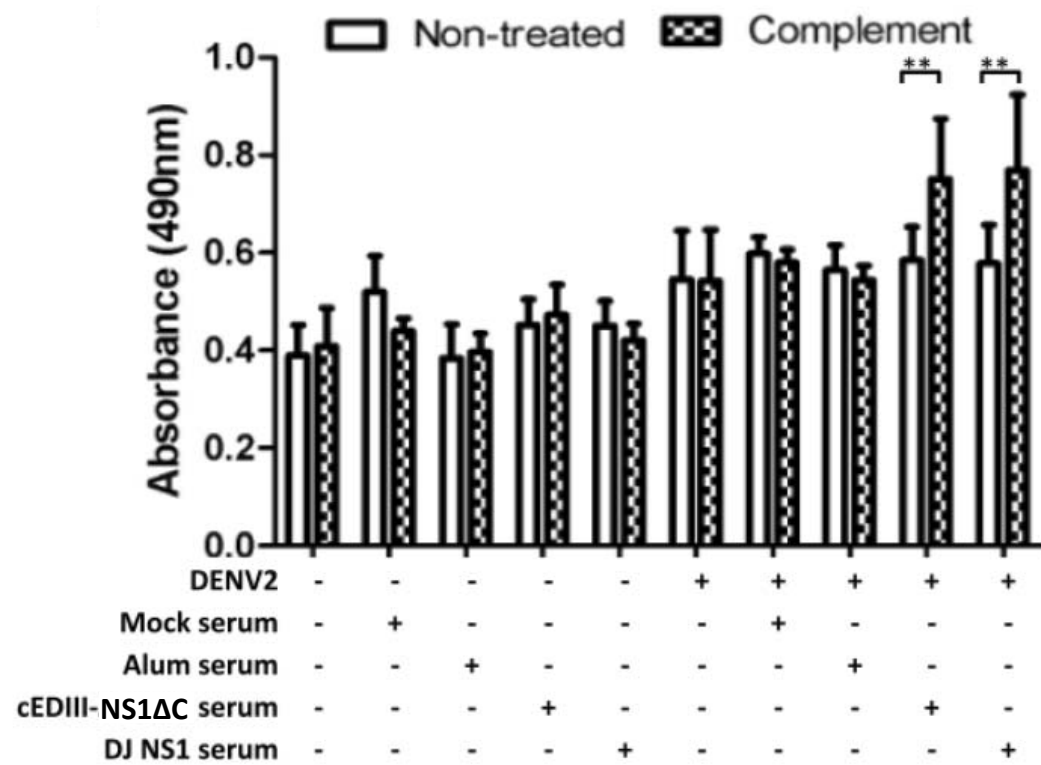


FIG. 11B

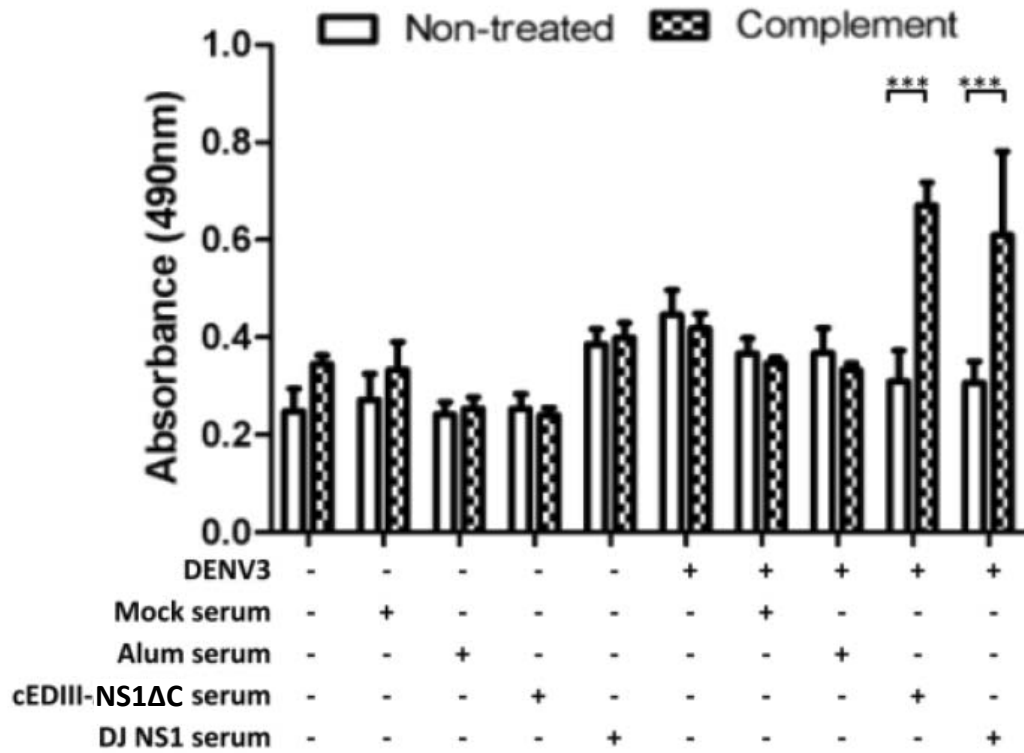


FIG. 11C

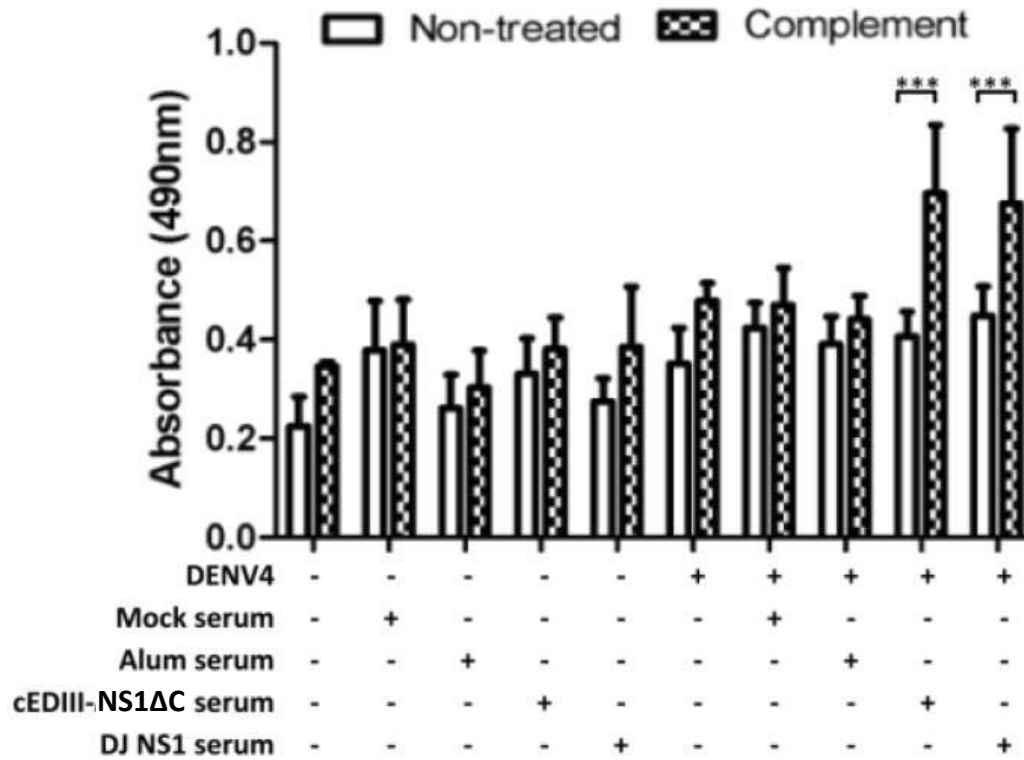


FIG. 11D

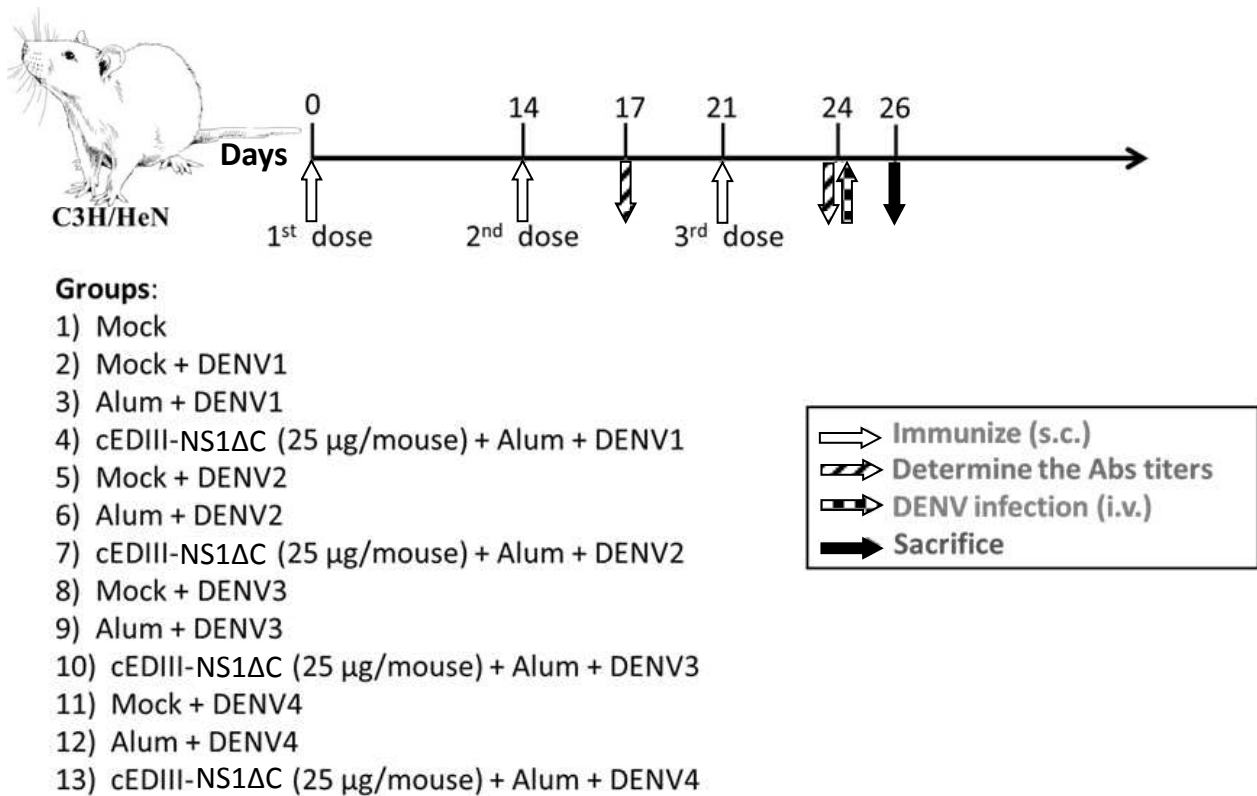


FIG. 12A

Times of Immunization	Antibody titer ($\times 10^3$)															
	DENV1				DENV2				DENV3				DENV4			
	Anti-cEDIII		Anti-NS1ΔC		Anti-cEDIII		Anti-NS1ΔC		Anti-cEDIII		Anti-NS1ΔC		Anti-cEDIII		Anti-NS1ΔC	
	IgG	IgM	IgG	IgM	IgG	IgM	IgG	IgM	IgG	IgM	IgG	IgM	IgG	IgM	IgG	IgM
2 nd	2 ⁴	2 ³	2 ⁴	2 ⁴	2 ⁵	2 ³	2 ⁴	2 ³	2 ⁵	2 ³	2 ⁵	2 ⁴	2 ⁵	2 ²	2 ⁵	2 ³
3 rd	2 ⁷	2 ³	2 ⁷	2 ⁴	2 ⁸	2 ⁴	2 ⁸	2 ⁵	2 ⁸	2 ³	2 ⁸	2 ⁵	2 ⁸	2 ³	2 ⁸	2 ⁵

FIG. 12B

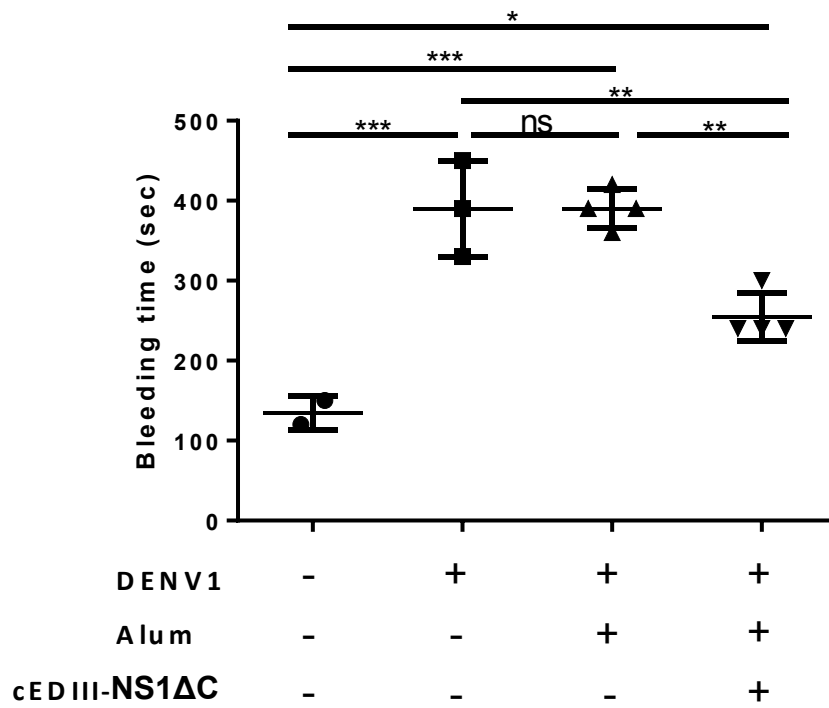


FIG. 13A

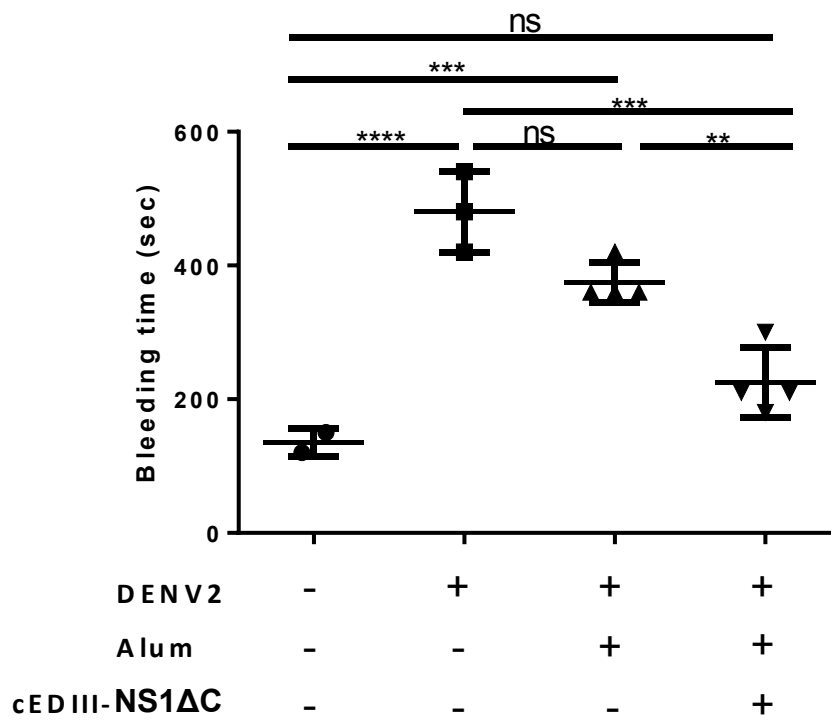


FIG. 13B

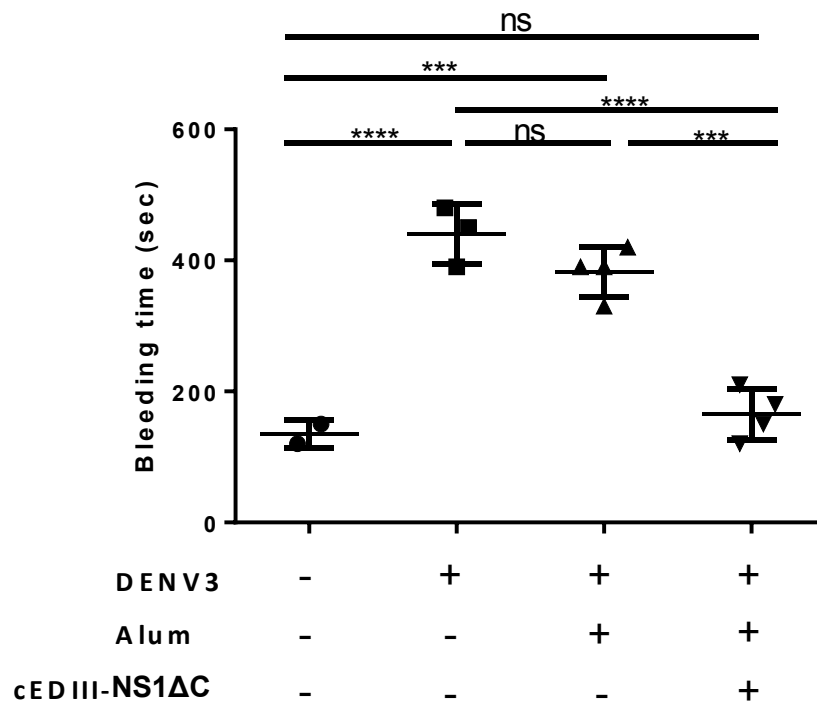


FIG. 13C

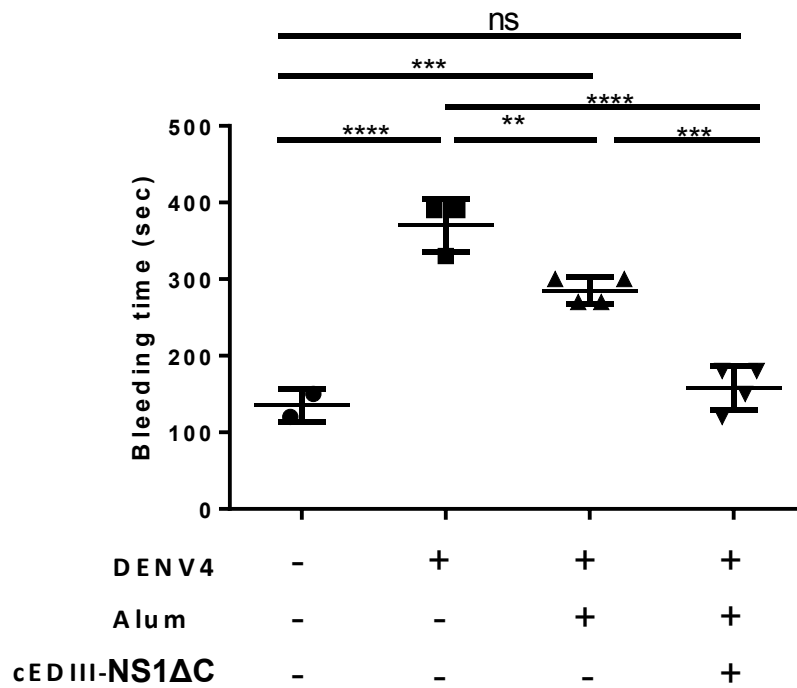


FIG. 13D

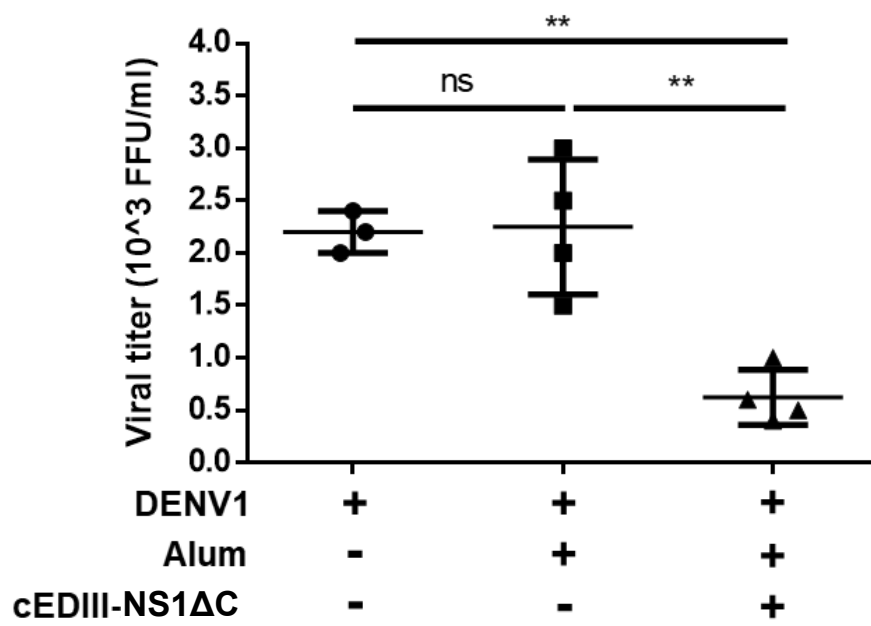


FIG. 14A

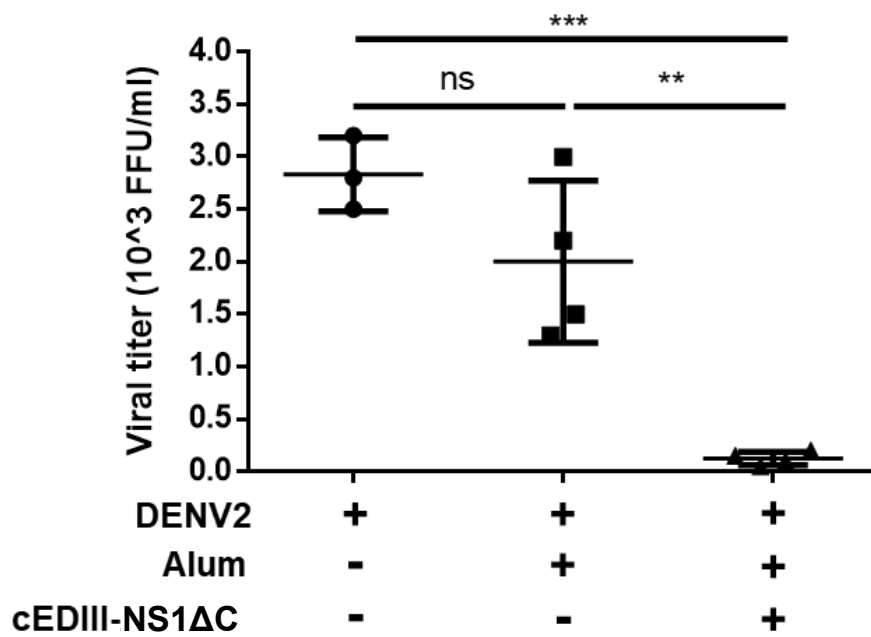


FIG. 14B

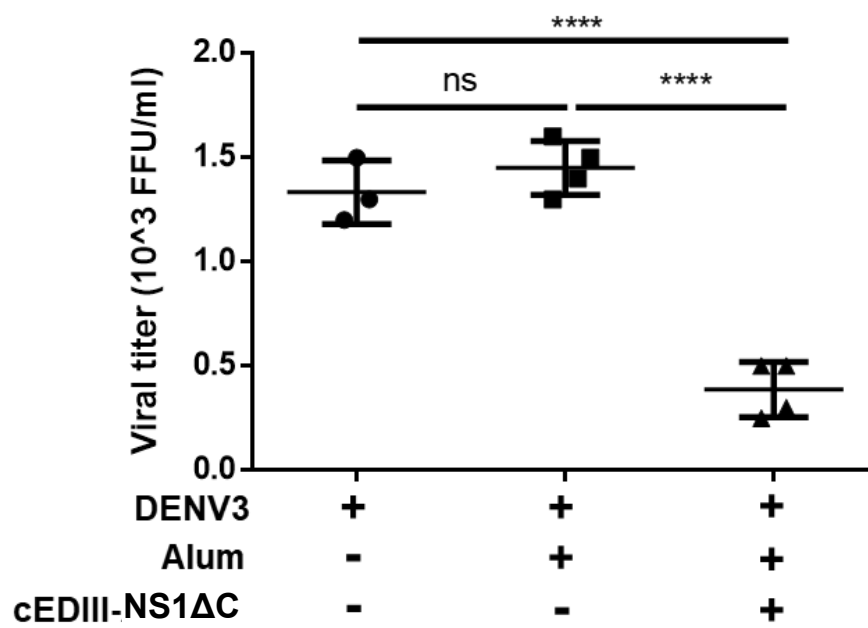


FIG. 14C

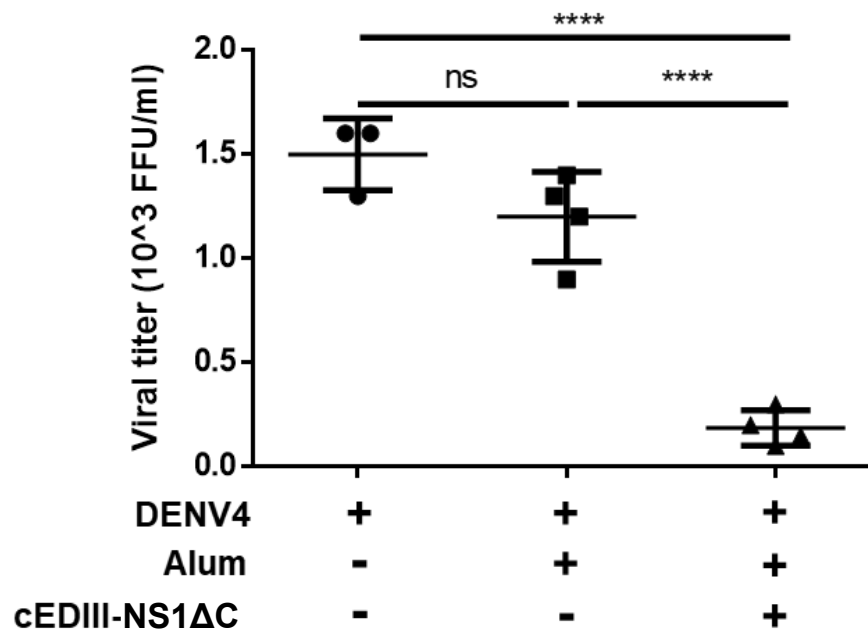


FIG. 14D

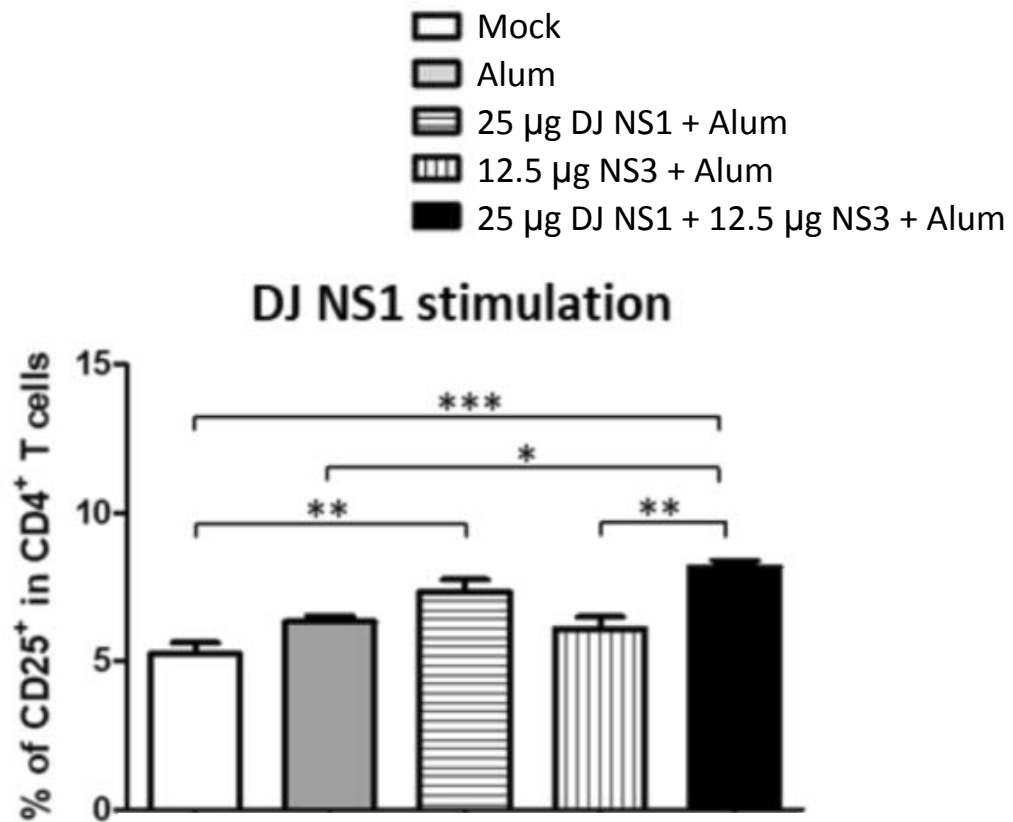


FIG. 15A

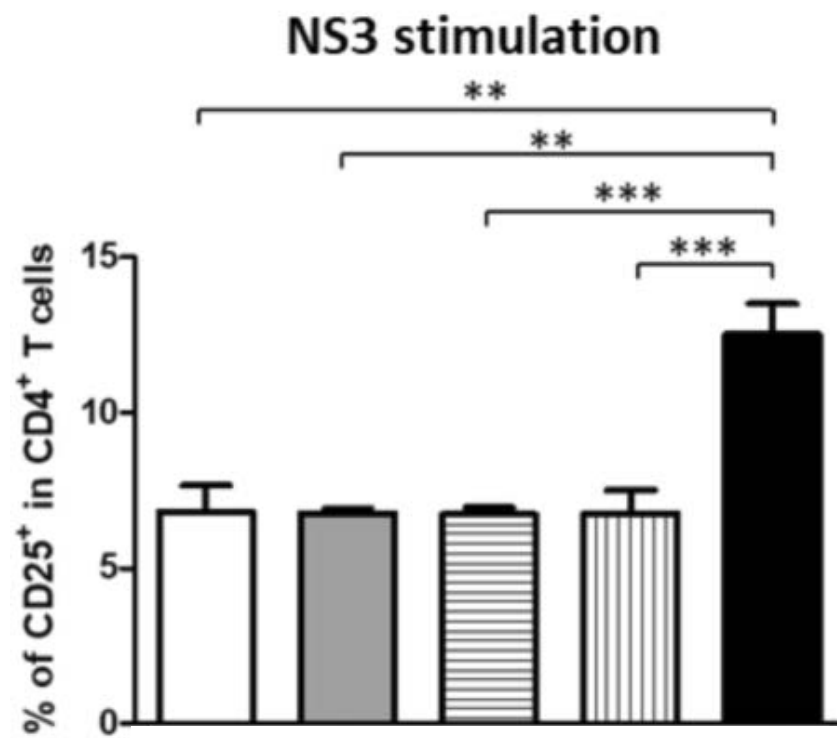
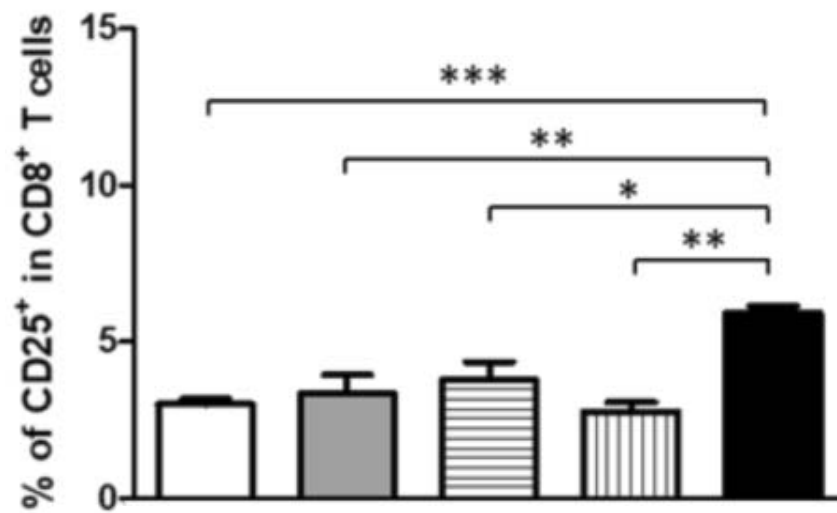
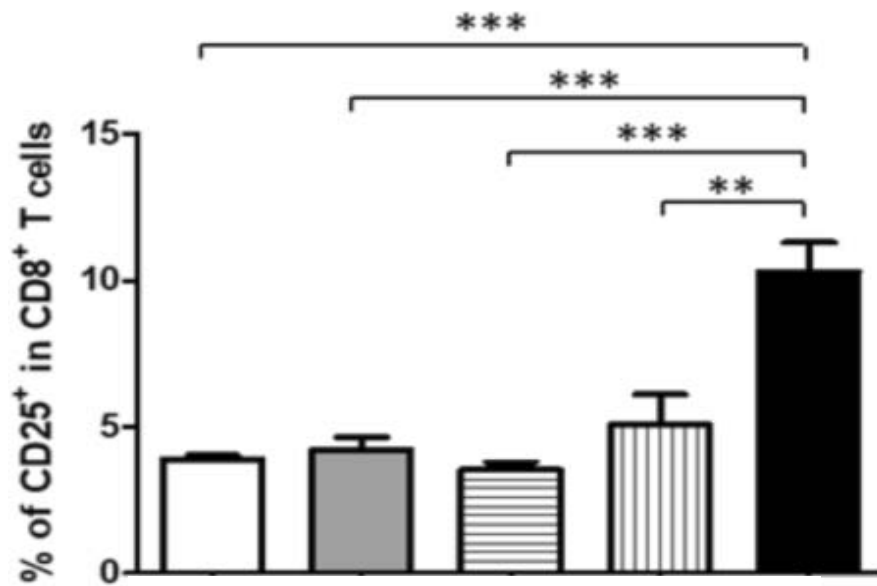


FIG. 15B

DJ NS1 stimulation**FIG. 15C****NS3 stimulation****FIG. 15D**

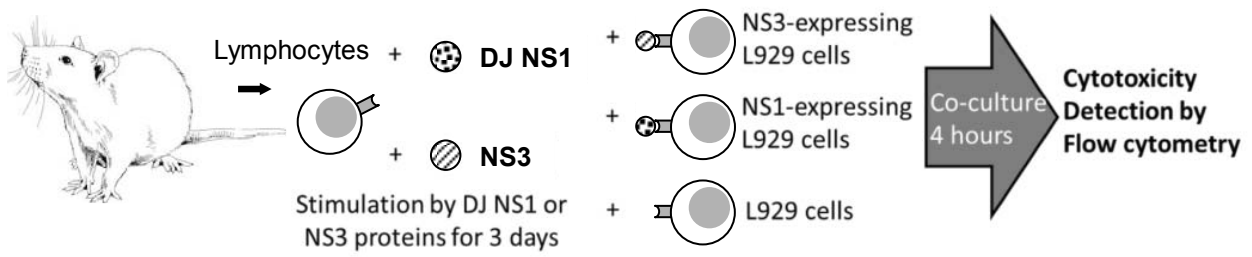


FIG. 16A

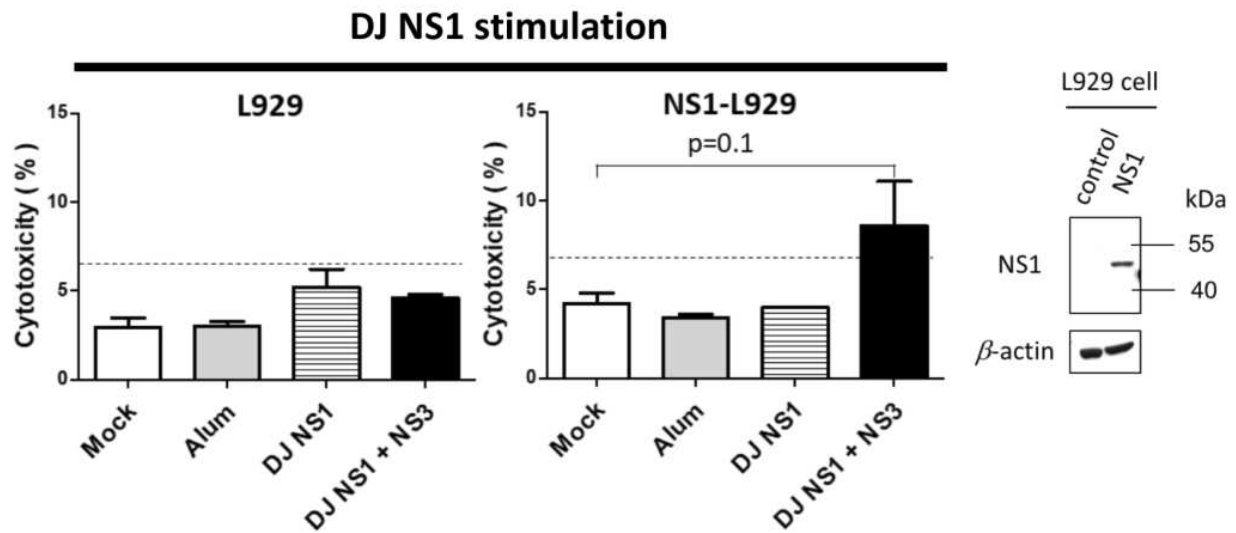


FIG. 16B

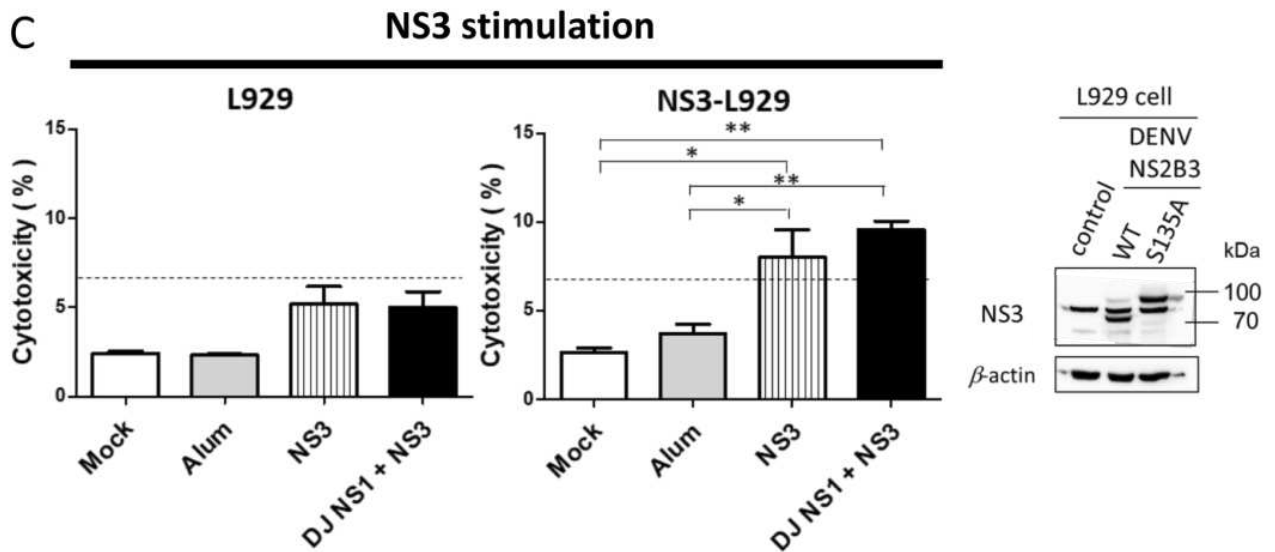


FIG. 16C

- Mock
- Alum
- 25 μ g DJ NS1 + Alum
- 12.5 μ g NS3 + Alum
- 25 μ g DJ NS1 + 12.5 μ g NS3 + Alum

DJ NS1 stimulation

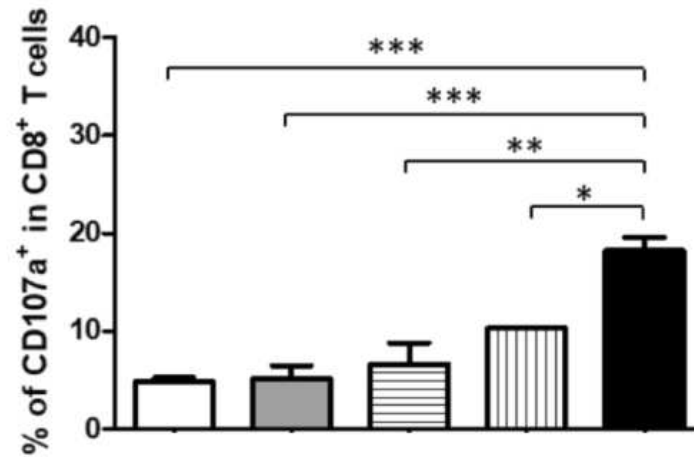


FIG. 17A

NS3 stimulation

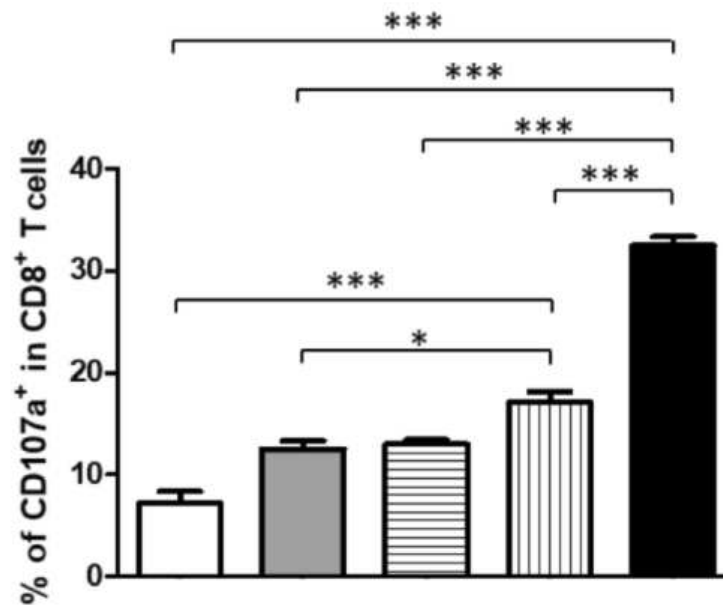
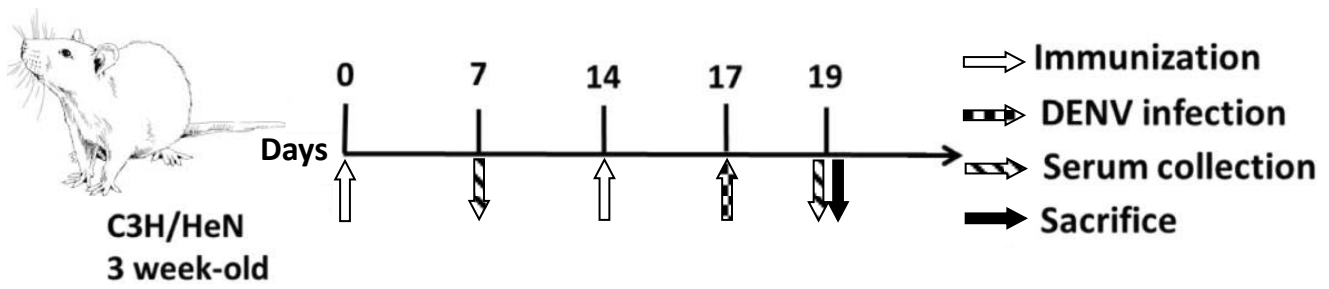


FIG. 17B



➤ **Groups:**

- | | |
|------------------------|---|
| 1. Mock | 4. 25 μ g DJ NS1 + Alum + DENV2 |
| 2. PBS + DENV2 | 5. 12.5 μ g NS3 + Alum + DENV2 |
| 3. Alum + DENV2 | 6. 25 μ g DJ NS1 + 12.5 μ g NS3 + Alum + DENV2 |

FIG. 18A

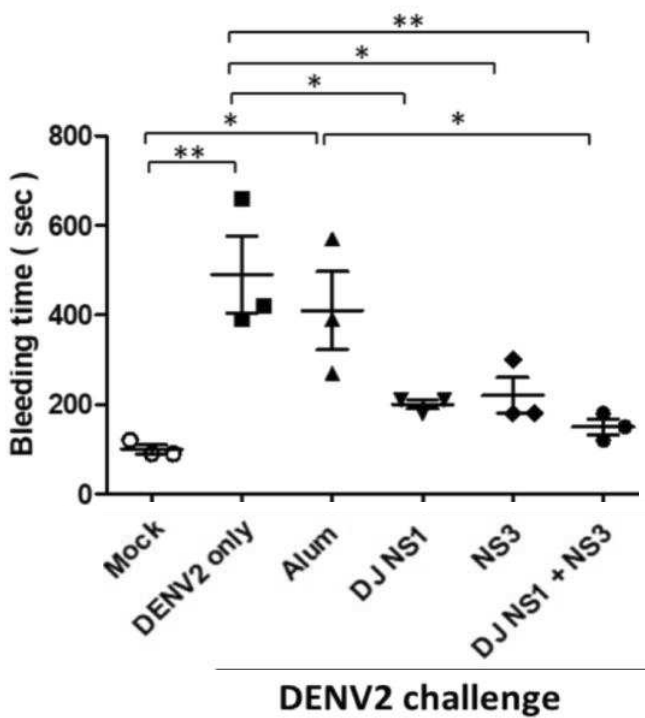


FIG. 18B

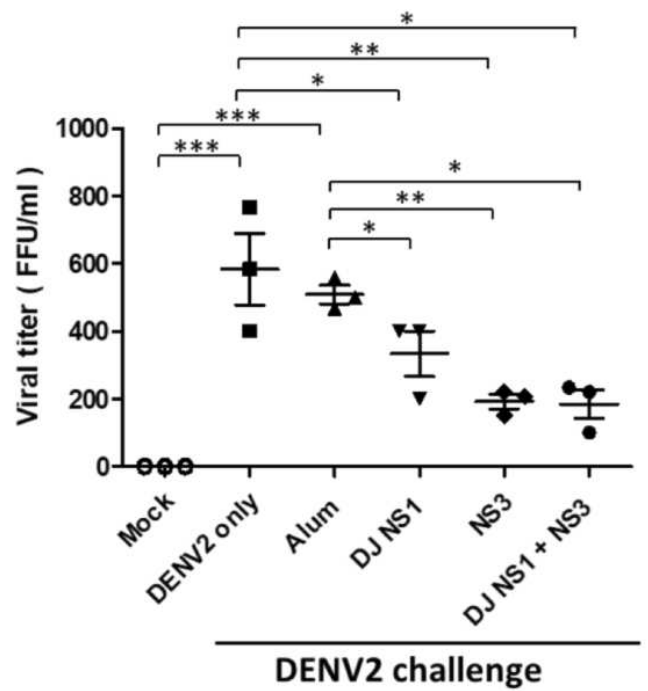


FIG. 18C

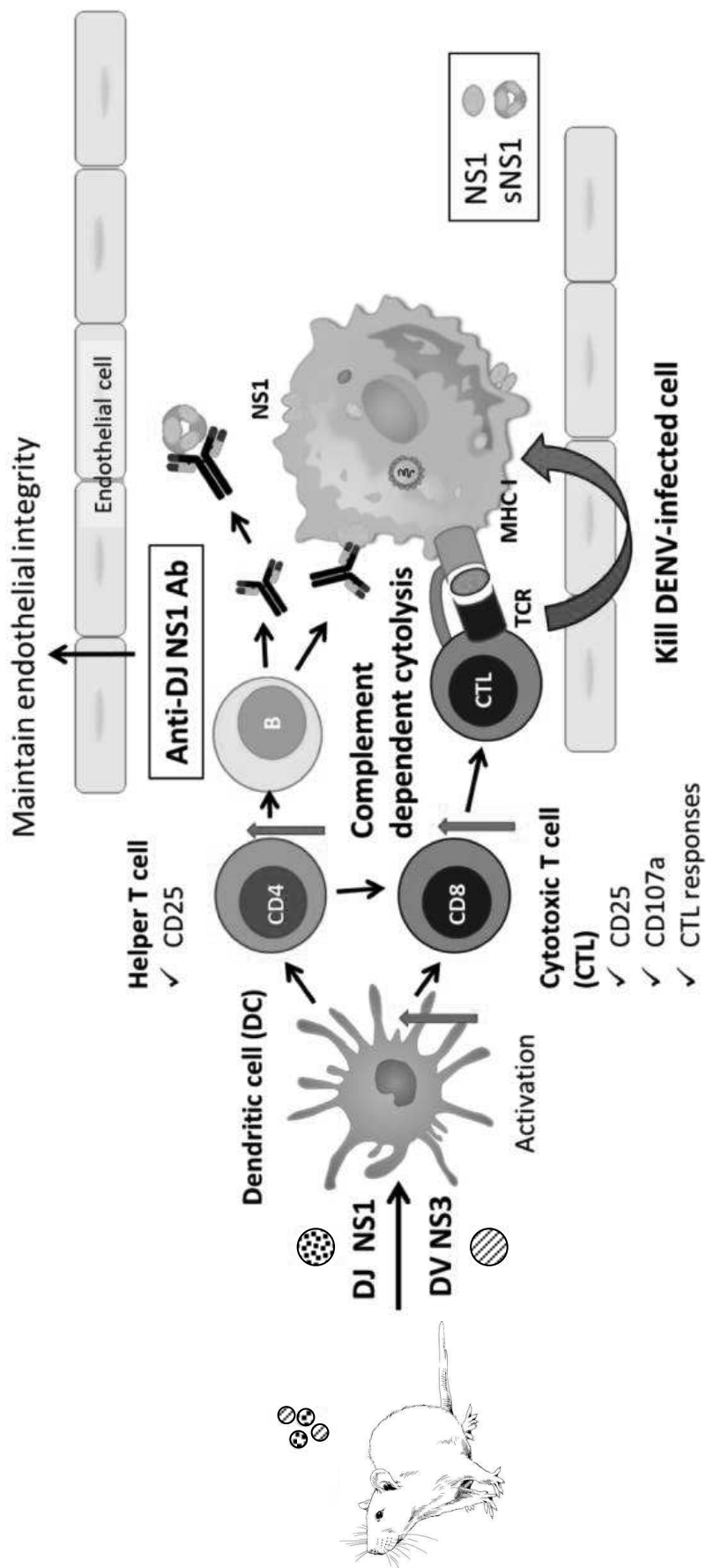


FIG. 19

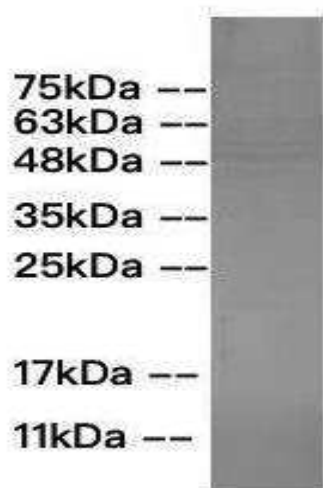


FIG. 20A

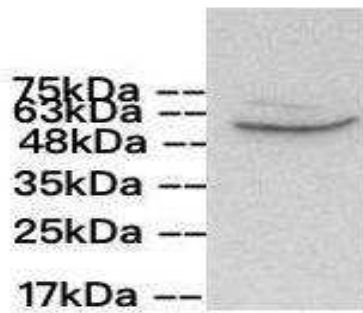


FIG. 20B

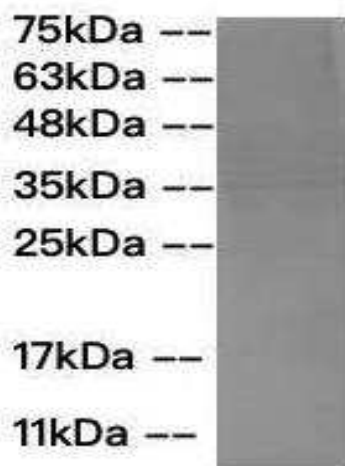


FIG. 20C

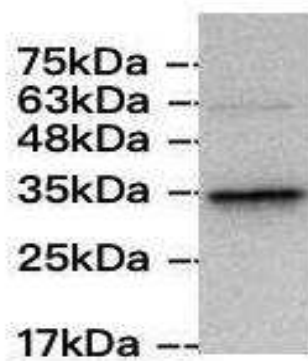
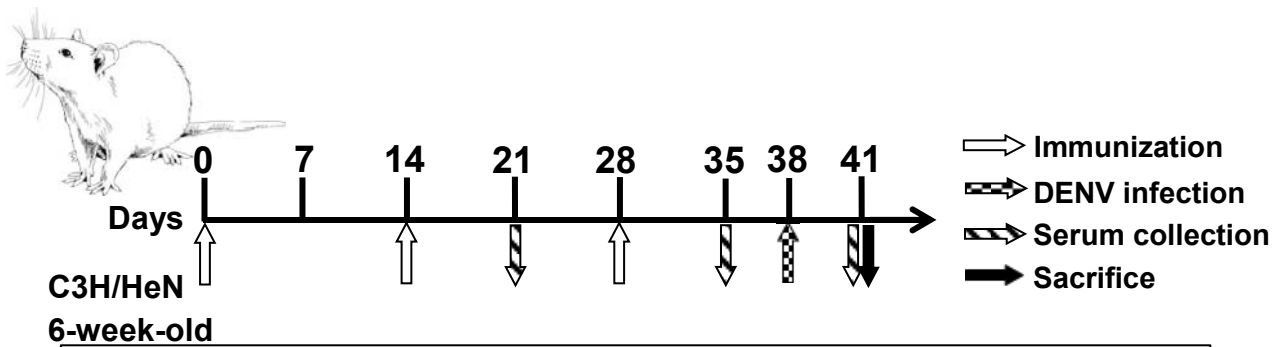


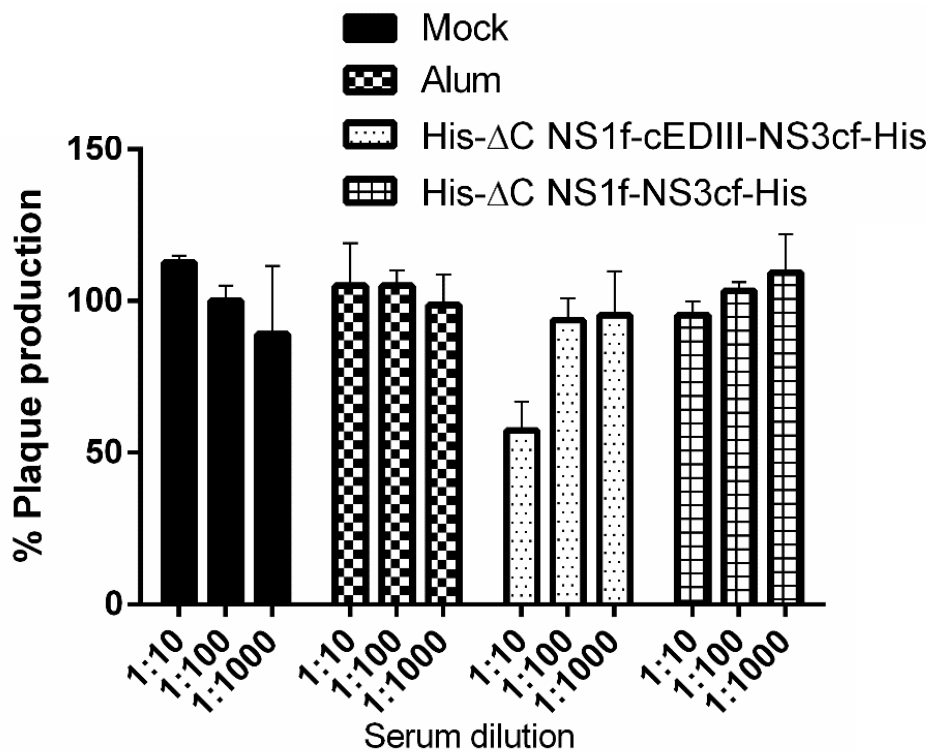
FIG. 20D



➤ **Groups:**

1. Mock (2% FBS RPMI medium)
 2. Mock + **DENV2**
 3. Alum + **DENV2**
 4. His-ΔC NS1f-NS3cf-His + Alum + **DENV2**
 5. His-ΔC NS1f-cEDIII-NS3cf-His + Alum + **DENV2**
- Infection with **DENV2 454009A** 5×10^7 PFU/mouse (intravenous)
- Immunize with fusion protein **25 μg/mouse**
- Protein purified from **293F cells**

FIG. 21A



DENV2

FIG. 21B

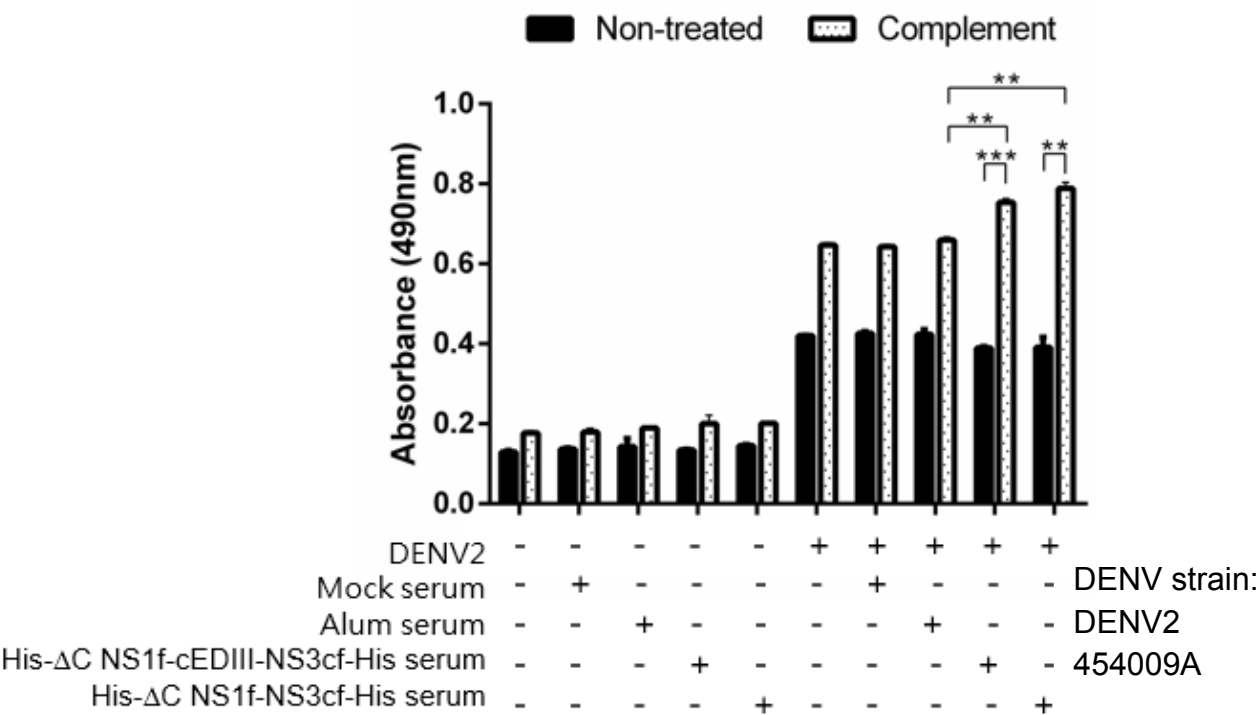


FIG. 21C

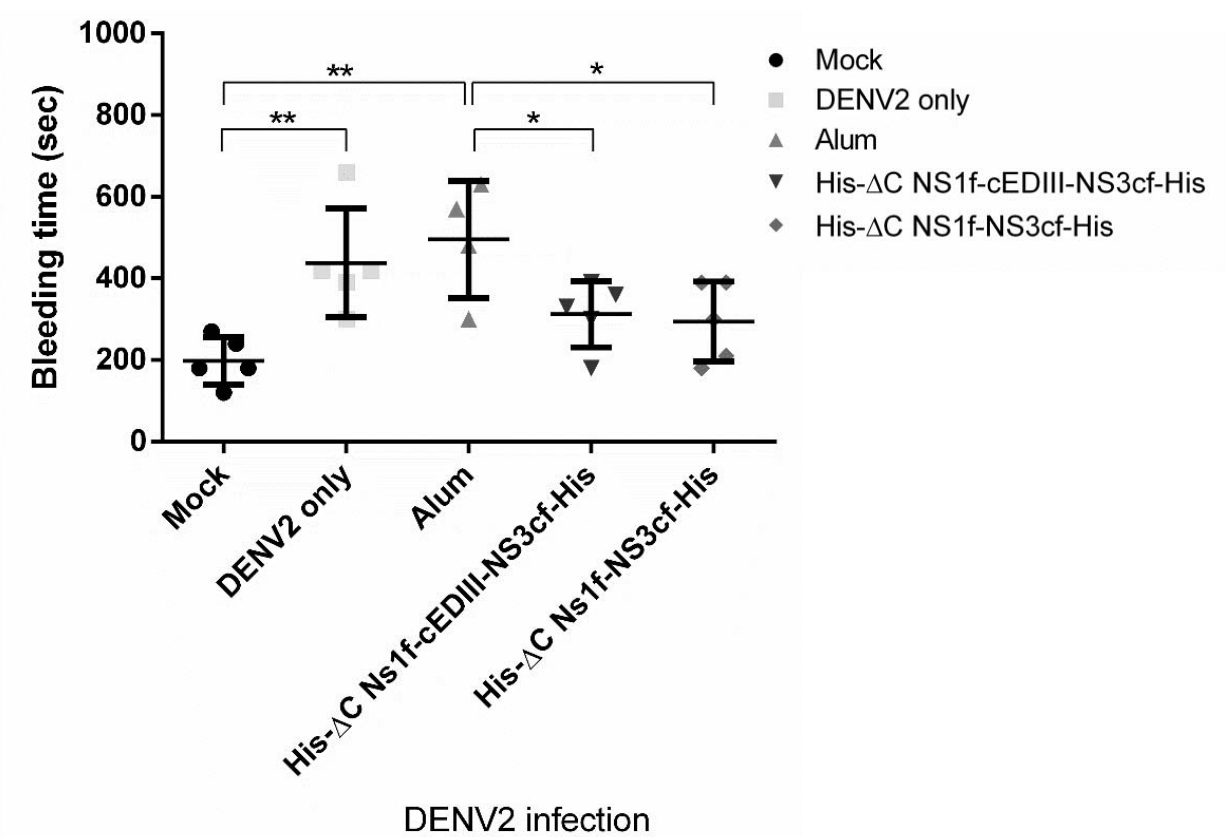
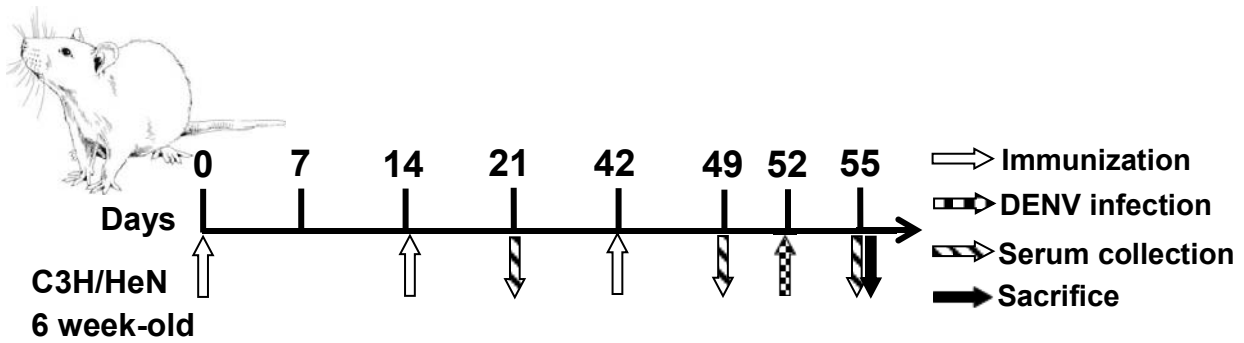


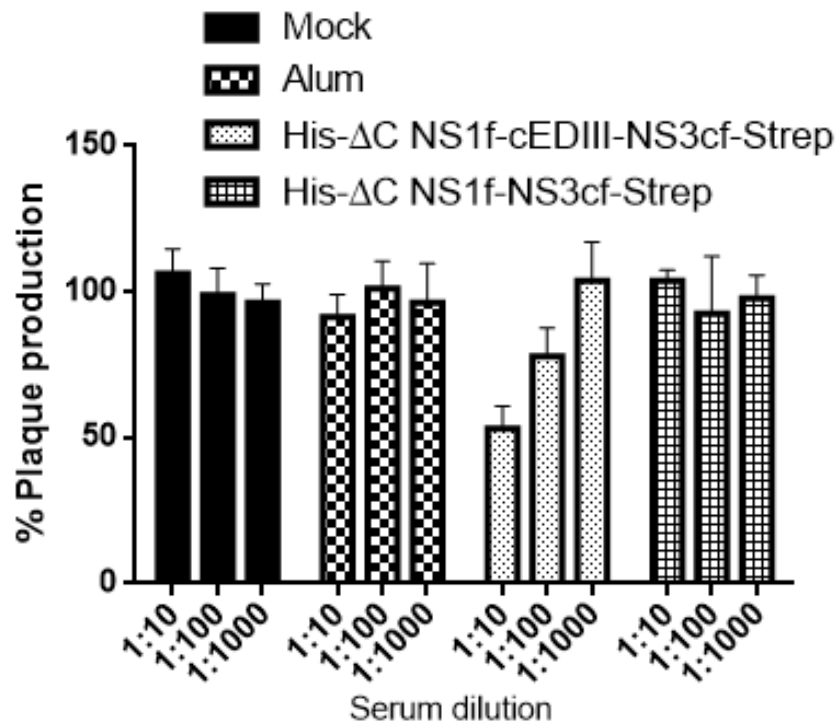
FIG. 21D



➤ **Groups:**

1. Mock (2% FBS RPMI medium)
 2. Mock + **DENV2**
 3. Alum + **DENV2**
 4. His-ΔC NS1f-NS3cf-Strep + Alum + **DENV2**
 5. His-ΔC NS1f-cEDIII-NS3cf-Strep + Alum + **DENV2**
- Infection with **DENV2 454009A** 1×10^8 PFU/mouse (intravenous)
- Immunize with fusion protein **25 μg/mouse**
- Protein purified from **Drosophila S2 cells**

FIG. 22A



DENV2

FIG. 22B

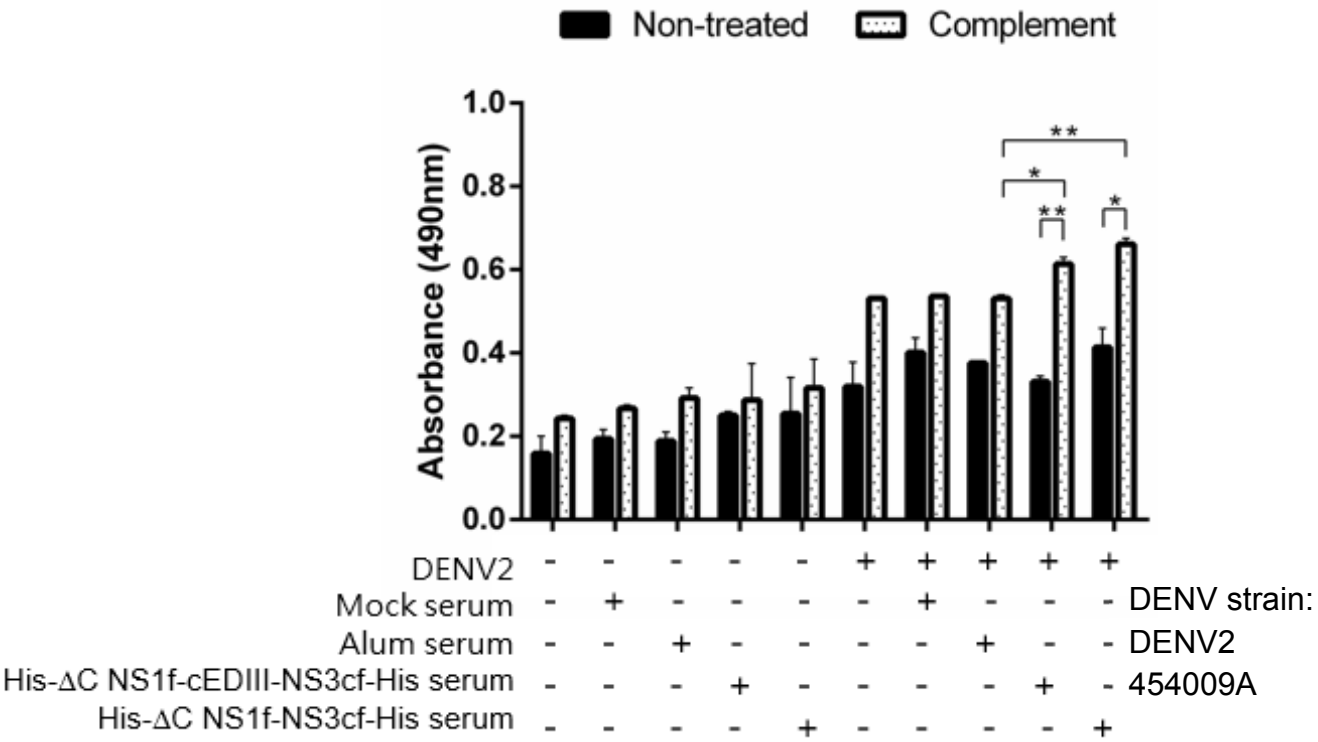
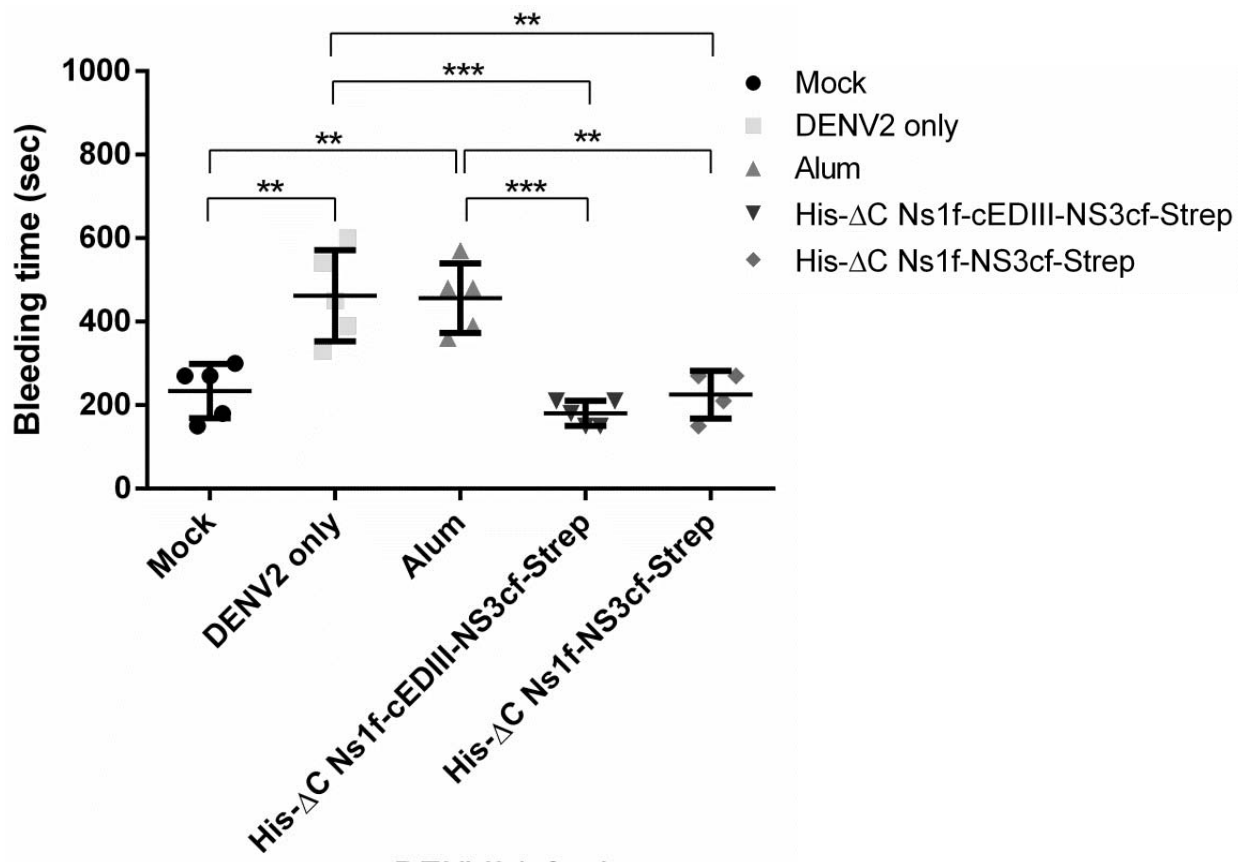


FIG. 22C



DENV2 infection
FIG. 22D