

# **Novel 3D printed modular tablets containing multiple anti-viral drugs: A case of high precision drop-on-demand drug deposition**

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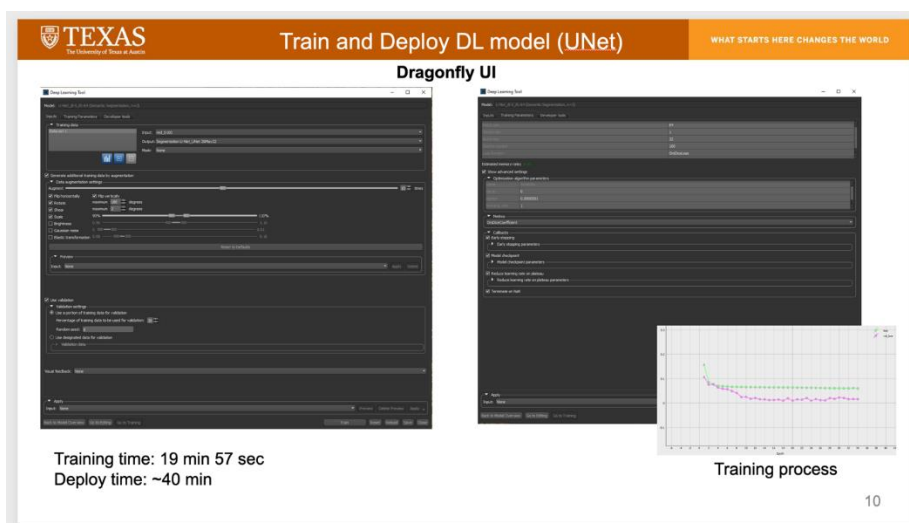
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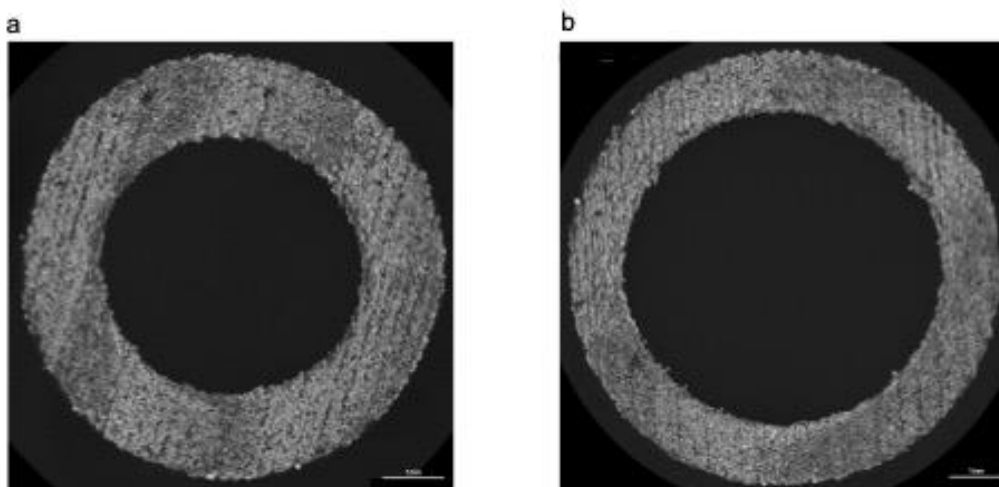
## Supplementary Data:



**Figure S1:** Size-optimized figure of the CI distribution. Left: Blank; Right: HCS tablet.



**Figure S2:** Screenshot of the model's method summary. [For the loss function and metrics, we used the default ones in the software (OrisDiceLoss & OrisDiceCoefficient)].



**Figure S3:** XRCT images of favipiravir (a) and ritonavir (b) 3D-printed tablets.

**Table S1.** *In Vitro* drug release data (n=3)

Drugs	Concentration (mg/ml)	Dispersion Volume ( $\mu$ l)	Total drug ( $\mu$ g)	Drug released amount after 240 min ( $\mu$ g)	Drug released ratio after 240 min (%)
HCS	100	44	4400	1678.70 $\pm$ 144.58	38.15 $\pm$ 3.29
Favipiravir	8	95	760	567.96 $\pm$ 16.89	74.73 $\pm$ 2.22
Ritonavir	10	110	1100	1016.19 $\pm$ 13.88	92.38 $\pm$ 1.26

**Table S2.** Drug amount calculated by flow rate.

Drugs	Concentration (mg/ml)	Dispersion Time (s)	Flow rate ( $\mu$ l /s)	Dispersion Volume ( $\mu$ l)	Calculated total drug ( $\mu$ g)
HCS	100	38	1.19	45.22	4522
Favipiravir	8	37	1.19	44.03	352.24
Ritonavir	10	52	1.19	61.88	618.8

**Table S3.** Drug amount calculated by collected volume.

Drugs	Concentration (mg/ml)	Dispersion Volume ( $\mu$ l)	Total drug ( $\mu$ g)	Drug loading (%)
HCS	100	44	4400	0.62
Favipiravir	8	95	760	0.11
Ritonavir	10	110	1100	0.16

**Table S4.** Drug content detected by UV method

Drugs	Concentration (mg/ml)	Mass (mg)	Total drug (mg)	Drug loading (%)
HCS	0.204	144.056	2.05	0.29
Favipiravir	0.058	229.583	0.58	0.08
Ritonavir	0.19	340.09	1.88	0.26

**Table S5.** Drug content detected by HPLC method

Drugs	Concentration (mg/ml)	Volume (ml)	Total drug (mg)	Drug loading (%)
HCS	0.097	50	4.852	0.68
Favipiravir	0.079	50	0.397	0.055
Ritonavir	0.031	50	1.574	0.22