

Electronic Supplementary Material (ESI) for RSC Medicinal Chemistry.

NMR ^1H , ^{19}F -based screening of the four stem-looped structure 5_SL1-SL4 located in the 5'-untranslated region of SARS-CoV 2 RNA

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Table 1 SI: CSP values and T_2 reduction quotients of all RNA binders from the DRTL-F library.

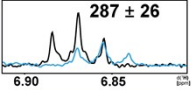
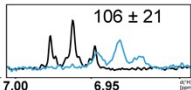
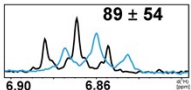
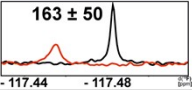
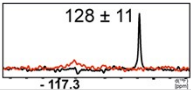
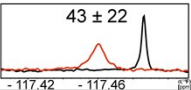
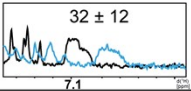
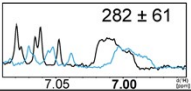
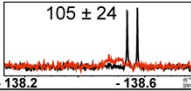
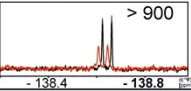
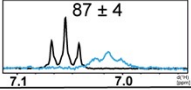
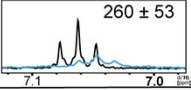
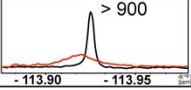
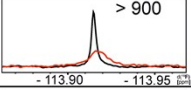
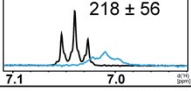
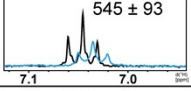
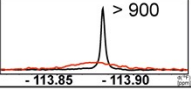
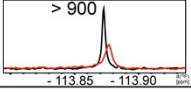
	compound	5_SL1234			5_SL1			5_SL2+3 ^{ext}			5_SL4		
		^1H CSP	^{19}F CSP	^{19}F T_2 Q.	^1H CSP	^{19}F CSP	^{19}F T_2 Q.	^1H CSP	^{19}F CSP	^{19}F T_2 Q.	^1H CSP	^{19}F CSP	^{19}F T_2 Q.
strong binders to 5_SL1234	DRTLA04	14	17	78	2.6	10	0	8	24	100	3	13	17
	DRTL B04	13	27	96	0	11	78	2.7	17	100	3	7	92
	DRTL D04	26	6.5	100	1	2	2	0.7	0	39	2	2	48
	DRTLA05	20	1.6	100	2	7	20	1.8	7	43	0.8	6	11
	D02	12	11.5	100									
medium binders to 5_SL1234	E05	5	18	100									
	G10	3.6	0.4	40									
weak binders to 5_SL1234	DRTL C01	14	1.5	59									
	DRTL E02	5	4.2	100									
	DRTL F02	0	8	2									

Table 2 SI: CSP, LOGSY factor and T_2 reduction quotients of the 5_SL1234 binders from the DSI library

	Ligand 1			Ligand 2			Ligand 3			Ligand 4			Ligand 5		
	^1H CSP	LOGSY factor	^1H T_2 Q.	^1H CSP	LOGSY factor	^1H T_2 Q.	^1H CSP	LOGSY factor	^1H T_2 Q.	^1H CSP	LOGSY factor	^1H T_2 Q.	^1H CSP	LOGSY factor	^1H T_2 Q.
5_SL2+3 ^{ext}	12.0	2.0	15%	8.0	1.1	68%	3.0	6.6	31%	11.0	6.2	91%	7.0	5.1	35%

Binding criteria: ^1H CSP \geq 6 Hz; LOGSY factor $>$ 1; ^1H T_2 Q. \geq 20%. Hit identification when 2 of 3 criteria are fulfilled.

Table 3 SI: K_D^{est} of the three RNA subconstructs with with the four most promising binder from DRTL-F library.

		5_SL1	5_SL2+3 ^{ext}	5_SL4
DRTL A04	$^1\text{H } K_D^{est} [\mu\text{M}]$			
	$^{19}\text{F } K_D^{est} [\mu\text{M}]$			
DRTL B04	$^1\text{H } K_D^{est} [\mu\text{M}]$			
	$^{19}\text{F } K_D^{est} [\mu\text{M}]$			
DRTL D04	$^1\text{H } K_D^{est} [\mu\text{M}]$			
	$^{19}\text{F } K_D^{est} [\mu\text{M}]$			
DRTL A05	$^1\text{H } K_D^{est} [\mu\text{M}]$			
	$^{19}\text{F } K_D^{est} [\mu\text{M}]$			

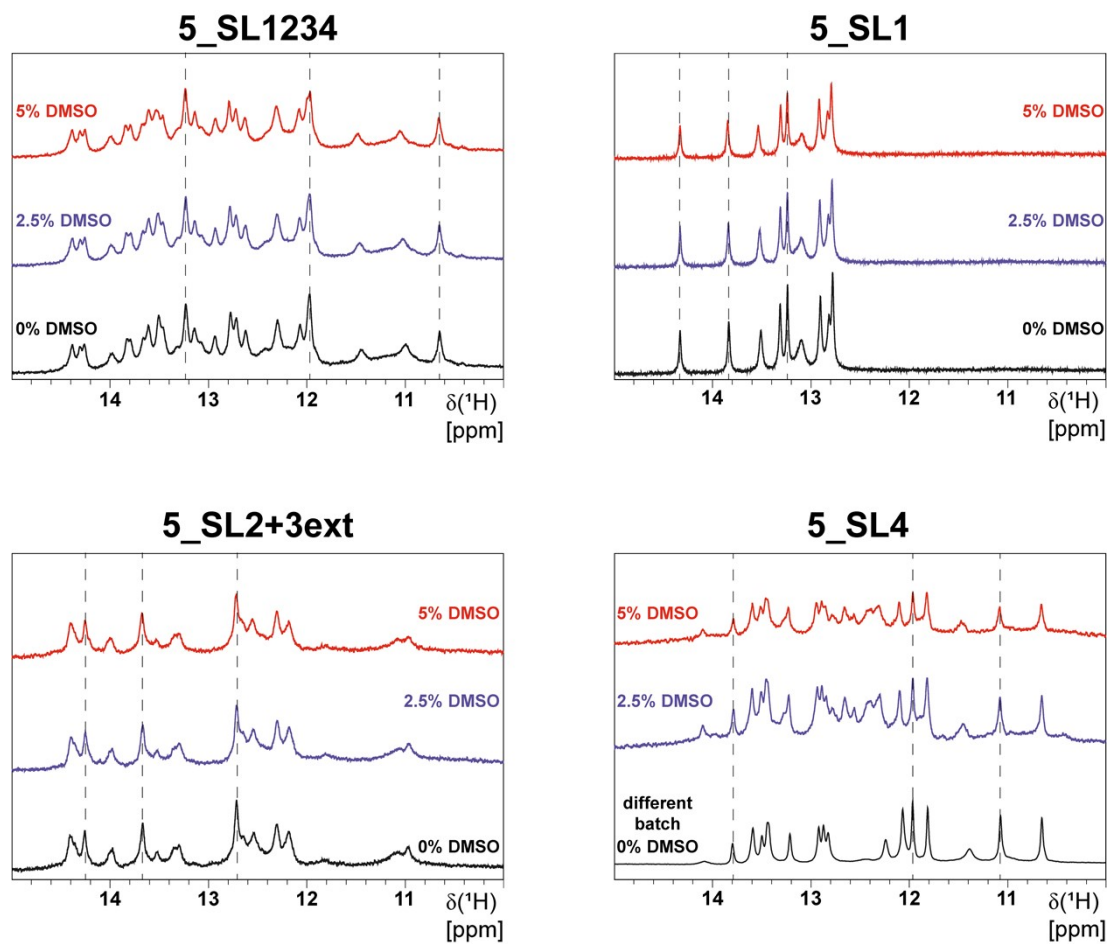


Figure 1: DMSO titrations with all used RNA constructs.

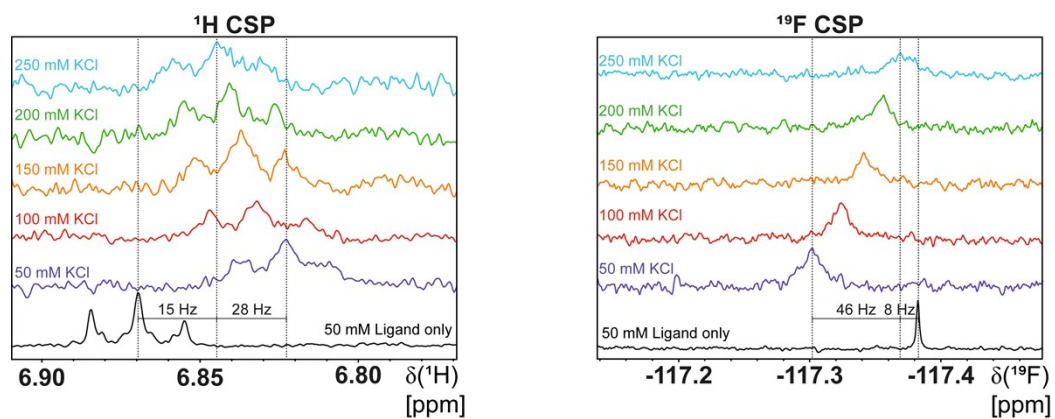


Figure 2: Effect of the salt concentration on the CSP. The spectrum in black shows the measurement of the Ligand DRTL A04 with 50 mM KCl in absence of RNA 5_SL2+3^{ext}. The other spectra represent measurements with increasing salt concentration and a Ligand-RNA ratio of 1:1.

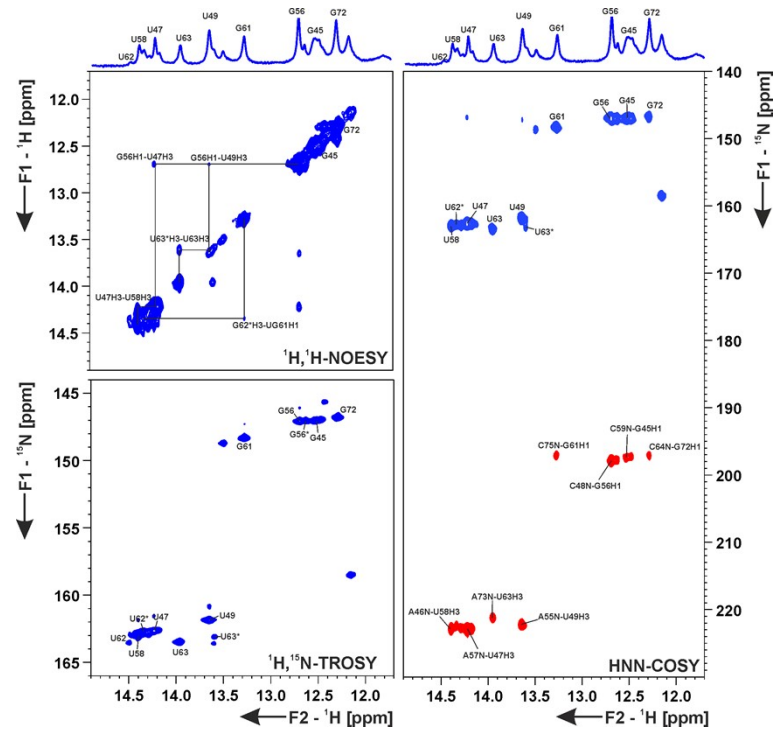
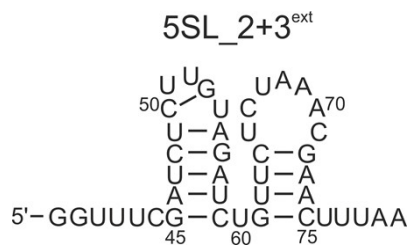


Figure 3: Secondary structure of 5_{SL2}+3^{ext} and assignment of the resonances of its imino region using ¹H-¹H-NOESY, ¹H-¹⁵N-BEST-TROSY and HNN-COSY experiments. The resonances marked with a star belong to a second confirmation of the RNA sub-element.