

SUPPLEMENTARY INFORMATION

IMPROVEMENT OF THE ACTIVITY OF THE ANTI-HIV-1 INTEGRASE APTAMER T30175 BY INTRODUCING A MODIFIED THYMIDINE INTO THE LOOPS

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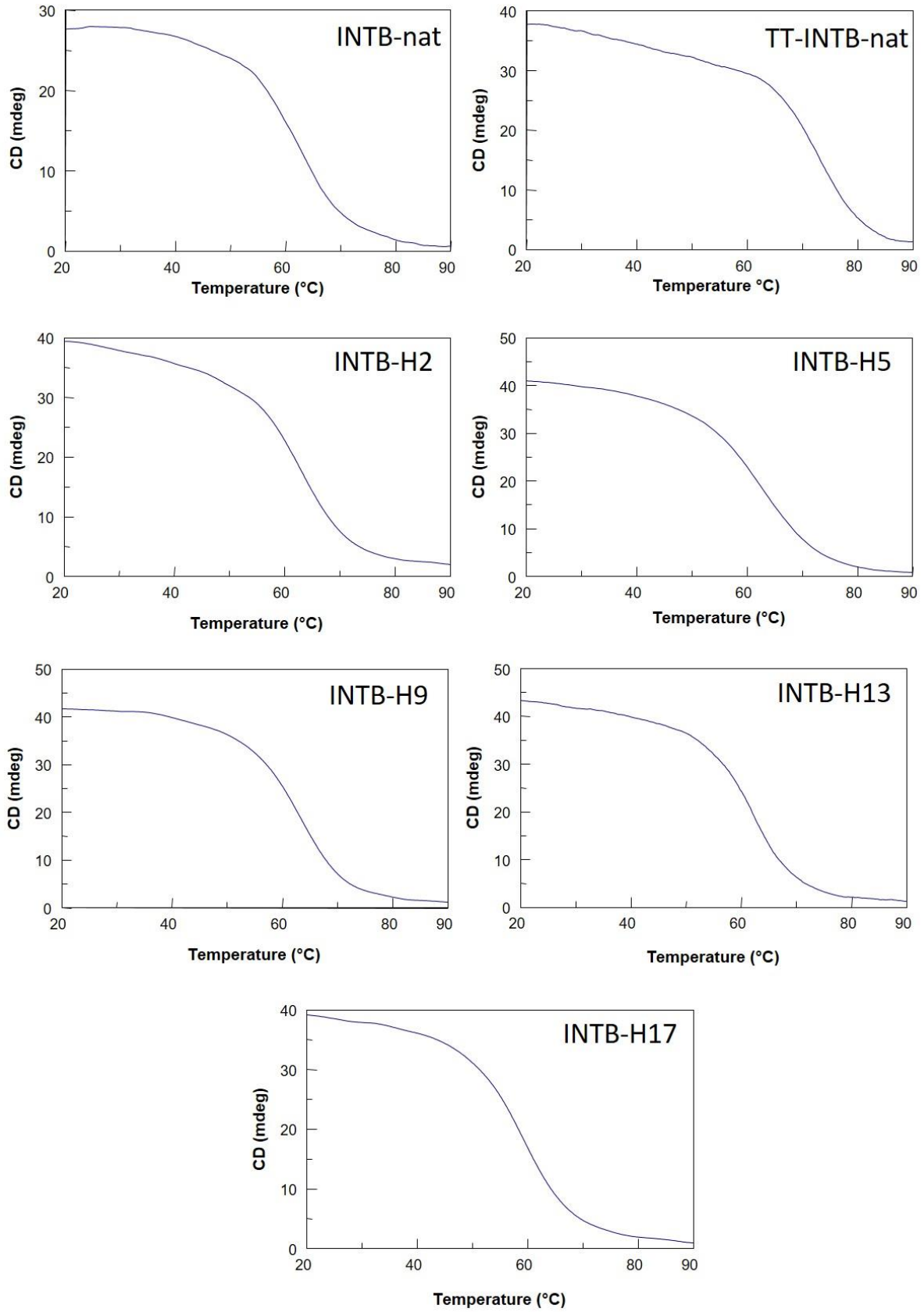


Figure S1: CD melting curves of the modified T30175 aptamers investigated and their reference ODNs **INTB-nat** and **TT-INTB-nat**.

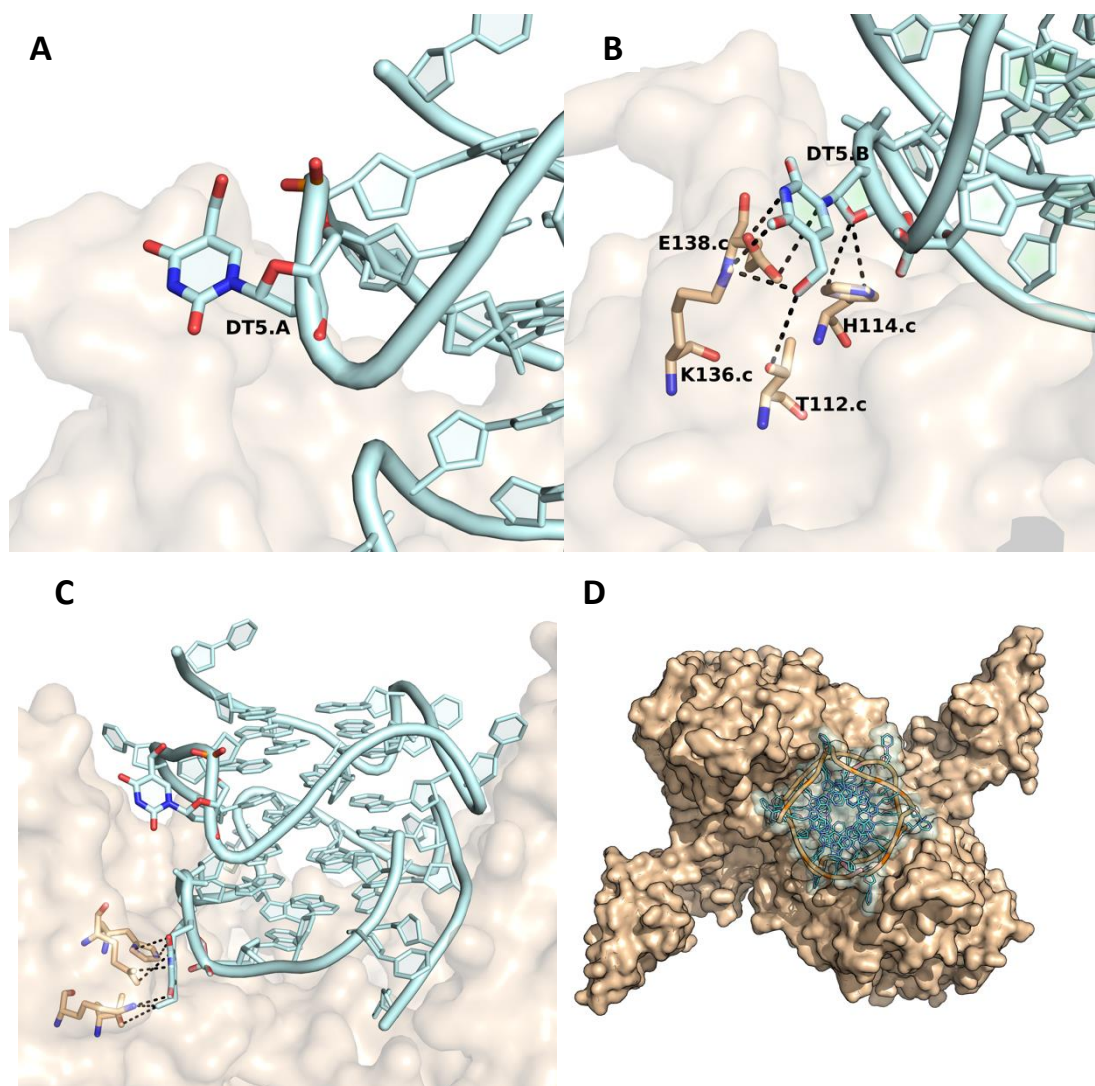


Figure S2: (A) Details of the interactions formed by the **H** residue at position 5 in chain A and (B) chain B of the aptamer **INTB-H5**. (C) Side view and (D) top view of the protein-aptamer complex. HIV-1 IN has been coloured beige and represented as a surface, the aptamer **INTB-H5** has been represented as a cartoon and coloured in light cyan.

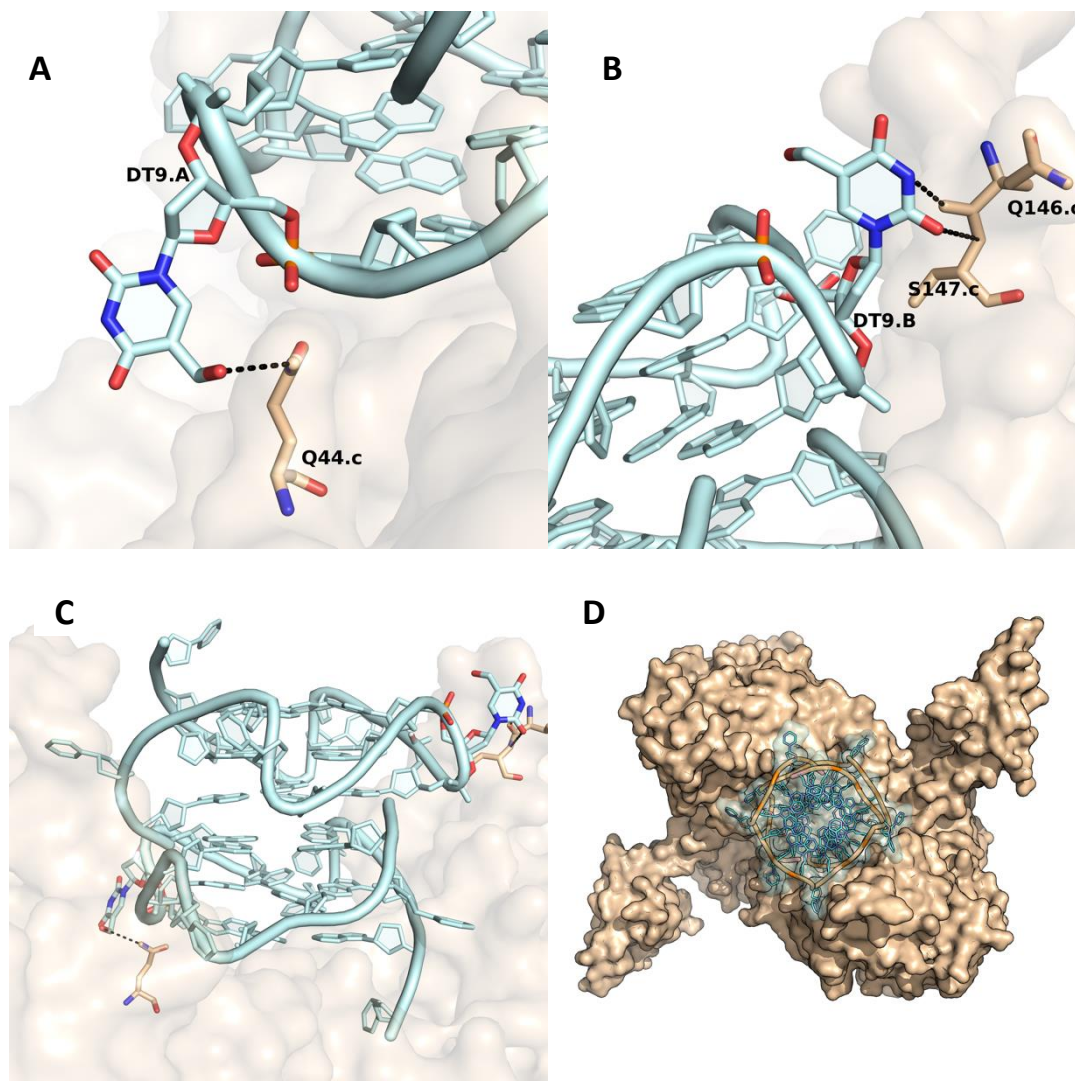


Figure S3: (A) Details of the interactions formed by the **H** residue at position 9 in chain A and (B) chain B of the aptamer **INTB-H9**. (C) Side view and (D) top view of the protein-aptamer complex. HIV-1 IN has been coloured beige and represented as a surface, the aptamer **INTB-H9** has been represented as a cartoon and coloured in light cyan.

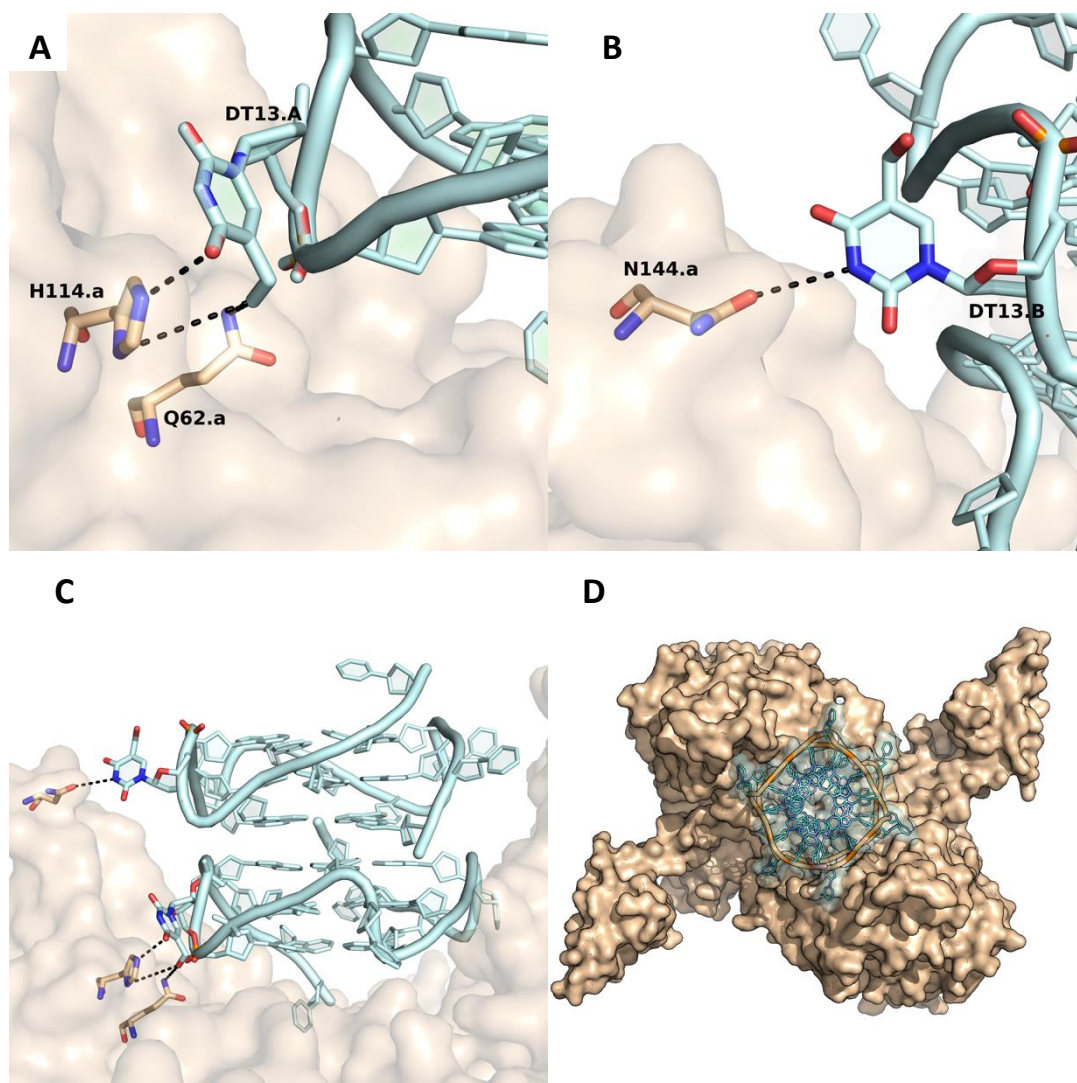


Figure S4: (A) Details of the interactions formed by the **H** residue at position 13 in chain A and (B) chain B of the aptamer **INTB-H13**. (C) Side view and (D) top view of the protein-aptamer complex. HIV-1 IN has been coloured beige and represented as a surface, the aptamer **INTB-H13** has been represented as a cartoon and coloured in light cyan.

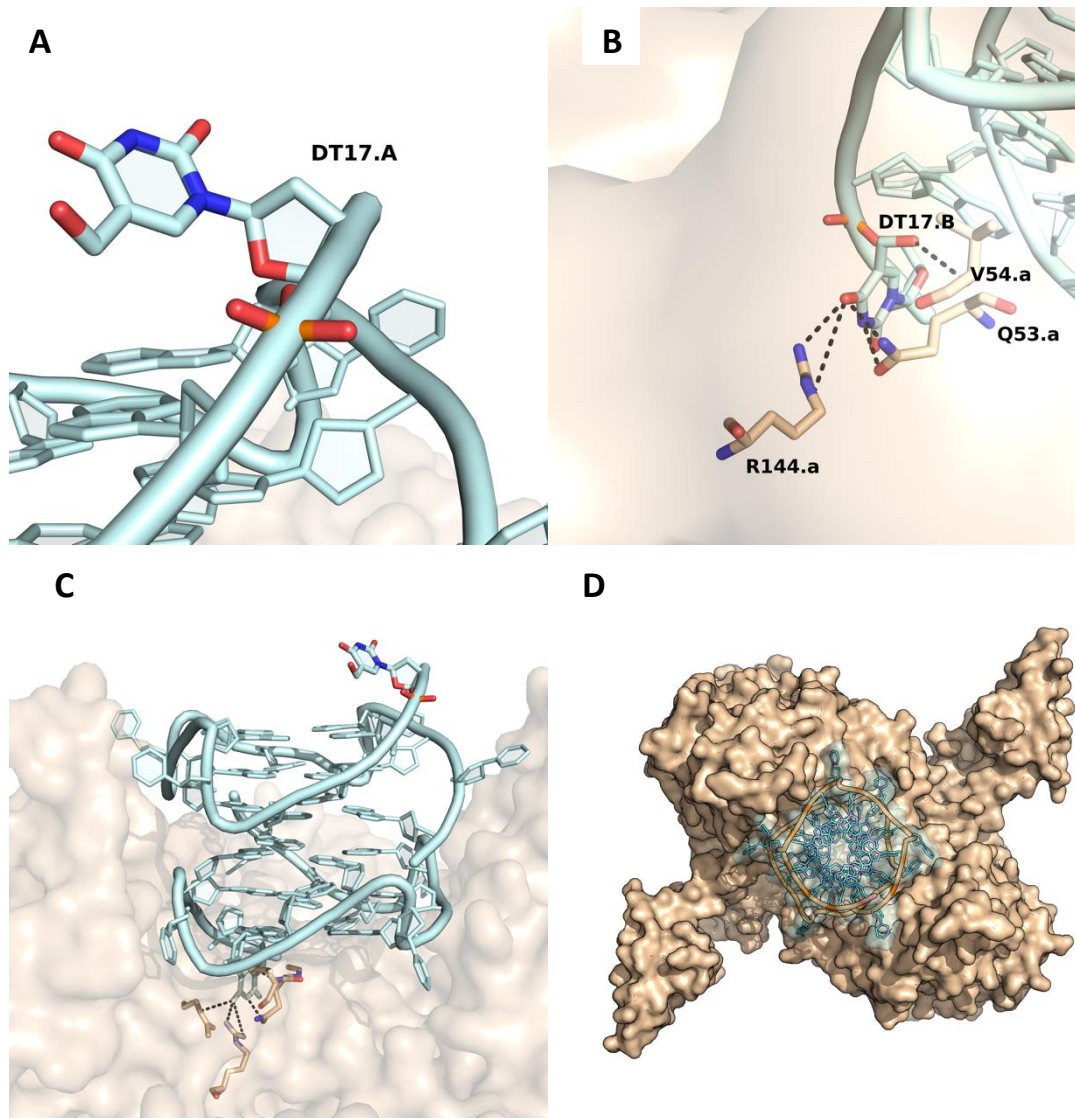


Figure S5: (A) Details of the interactions formed by the **H** residue at position 17 in chain A and (B) chain B of the aptamer **INTB-H17**. (C) Side view and (D) top view of the protein-aptamer complex. HIV-1 IN has been coloured beige and represented as a surface, the aptamer **INTB-H17** has been represented as a cartoon and coloured in light cyan.

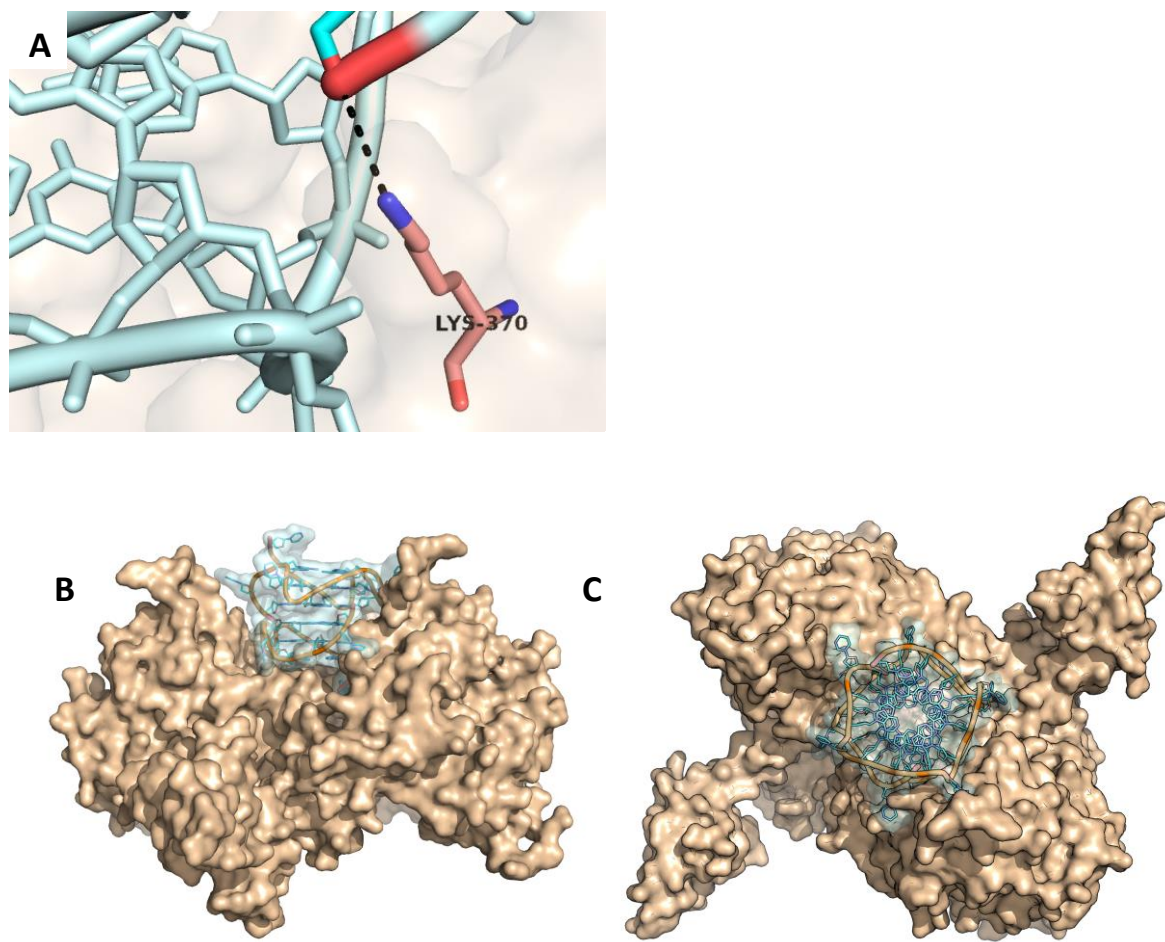


Figure S6: (A) Details of the interactions involving chain A of aptamer **INTB-nat** (A). (B) Side view and (C) top view of the protein-aptamer complex. HIV-1 IN has been coloured beige and represented as a surface, the aptamer **INTB-nat** has been represented as a cartoon and coloured in light cyan.

Sequence	$\Delta H_{v.H.}$ (kJ/mol) ^a	$\Delta H_{v.H.}$ (kJ/mol)
	Unfolding model	
	$Q_2 \rightarrow 2S$	$Q \rightarrow S$
INTB-nat (T30175)	154	225
INTB-H2	167	220
INTB-H5	131	200
INTB-H9	148	205
INTB-H13	175	238
INTB-H17	155	210
TT-INTB-nat	-	255

^a Enthalpy changes are reported per mole of monomer.
Errors on ΔH_{vH} is within $\pm 10\%$.

Table S1. Enthalpy changes obtained from the van't Hoff analysis of the CD melting curves by using different unfolding models.