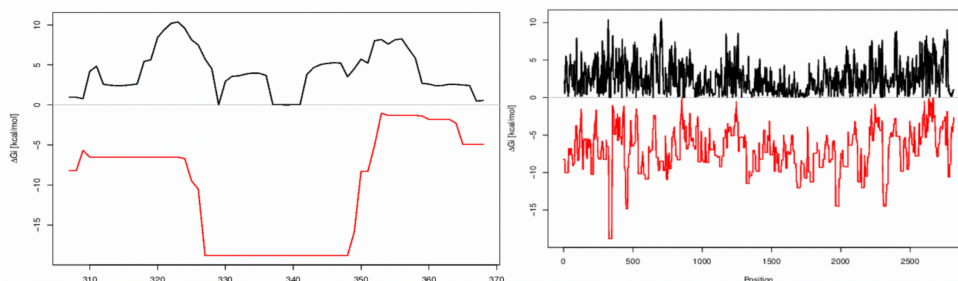


Total free energy of binding: -18.82 kcal/mol  
Energy from duplex formation: -43.58 kcal/mol  
Opening energy for the longer sequence: 8.82 kcal/mol  
Opening energy for the shorter sequence: 15.94 kcal/mol  
(((((((((((.((((((((((I&)))))))).).)))))))))

### Graphical output

The plot below shows the interaction free energy (RED)  $\Delta G_i$  and the energy needed to open existing structures in the longer sequence (BLACK) for the target region (top) and the whole range (bottom).



**Panel A.** RNA-RNA interaction related to TSPYL2 (black) and UBE2C (red).

**Protein:** MASQNRDPAATSVAAARKGAEPSSGAARGPVGKRLQQELMTLMMMSGDKGISAFPESDNLFWVGTHIGAAGTVYEDLRYKLKSLFEPSSGYPNAPT VKFLTPCYHPNVDQTQGNICLDLKEKWSALYDVRTILLSIQSLLGEPNIDSPLNTHAAELWKNPTAFKKYLOETYSKQVTSQEP

[illegible]

### Interaction probabilities

Prediction using RF classifier	0.9
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Prediction using SVM classifier	0.76
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RPISeq gives interaction probabilities in the range between 0 and 1. In performance evaluation experiments, predictions with probabilities  $> 0.5$  is considered “positive,” i.e., representing that RNA and protein are likely to interact.

**Panel B.** Protein-RNA interaction related to UBE2C protein (top) and TSPYL2 RNA (down).

Predicted Sites				
Position	Peptide	Score	Cutoff	Type
45 - 48	PLPPPQ <b>RPRL</b> QEETEA	5.351	5.164	D-box

Enter sequence(s) in FASTA format

```

>TSPYL2
MDRDPDEGPPAKTRRLSSSESPQRDP PPPPPPLRLPLPPQQRPLQEETEAQVLADMRGVGLGALPPPPPVILEECIRAYFTLCAECPQWDSTIESCYGEAPPTESLEALPTPEASGCSLEIDFQ
VVQSSFGGEGALETCSAVGWAPRLVDPKSEEAIIIVEDEDEDERESMRSSRRRRRRRRKQKVKRESRENAERMESILQALEDIQLDLEAVNIKAGKAFRLRKFIQMRPFLERRDLIIQHIFGF
WVKAFLNHPRISILNRRDEDIFRYLTNLQVQDLRHISMGYKMKLYFQTNPYFTNMVYKEFQRNRSCLVSHSTPRWHRCQEPQARRHCNQDASHSF5WFSNHSLEADRIAEIKNDLWVNPRL
YYLRGCSRIKQKQEMKKRTRGACEVIMEDAPDYAYVEDIFSEISDIDETHDKISDFMETDYFETDNETDININICDSENPDHNEVPNNETDANNESADHETDANNESADNNENPEDN
NKNTDDNEENPNNNENTYGCNFFKCGFWCSHGCMNQDSSDSDEADSEASDDEDDNDCNECDNECSDDDCNECDNECSDDDDRDIEYKEVIEDFDKQADYEDVIEIISDIFVEECIEEGIQQD
EDIYEEGNVEECSEDWEECEDSDSDLEDVLQVNGWANPCKRCKTG

```

Threshold

☒ D-box    Medium    ☒ KEN-box    Low

Console

**Panel C.** The presence of D-box in TSPYL2 protein.