

A protein sequence

MSTREENVYMA
KLAEQAERYEE
MVEFMEKVAKT
VDVEELSVEER
NLLSVAYKNVI
GARRASWRIISSI
EQKEESKGN...

protein texts

we have isolated
two rare cold-
inducible (rci1
and rci2) cdnas
by screening a
cdna library
prepared ...

ESM_1

\mathbf{X}_s

BioBERT

\mathbf{X}_t

$N \times$

Linear

\mathbf{V}_s

\mathbf{K}_s

\mathbf{Q}_s

T

Softmax

Add&Norm

$\hat{\mathbf{X}}_s$

Linear

\mathbf{Q}_t

\mathbf{K}_t

\mathbf{V}_t

T

Softmax

Add&Norm

$\hat{\mathbf{X}}_t$

LR

Prediction values

1) Feature extraction

2) Adaptive fusion module

3) Classification