

# Bio 345 - molecular genetics - protein paper

[Science](#), [Biology](#)



## Molecular Genetics Protein paper s Answer1

Figure 2A is northern blot data which denotes the effect of Rap1p on enhanced mRNA decay from both constructs A and B. The effect of Rap1p on construct B is much more as compared to construct A.

Figure 2B is a graphical representation of the amount of mRNA from both the constructs A and B.

Figure 3 A shows different constructs B , C and D. Construct B contains Rap1p binding site along with T rich regions separating it from the TATA box. Construct C contains the Rap1p binding site adjacent to the TATA box and T rich regions. Construct D contains only the rap1p binding region along with the TATA box.

Figure 3 B and C indicates the relative mRNA level from the constructs B, C and D.

Figure 3 D and E indicates another construct E which contains the construct E which contains UAS adjacent to the Rap1p binding site.

Figure 3 F and G gives a graphical representation of the relative mRNA level.

Figure 4 indicates that by knocking down Rap1p using siRNA the amount of mRNA from both constructs A and B increases.

The cis factors that influence RNA quantity derived from these constructs include the T rich sequences and the location of the Rap1p binding site, along with the presence of UAS. The trans- acting factors include Rap1p.

## Answer 2

A model to explain exactly how transcription from different promoter/ UAS sequences influences the steady state of DNA includes the promotion mRNA synthesis. Transcription from different promoter/UAS sequences is affected

by different activators which enhance mRNA decay. Certain factors such as cis acting factors influences the RNA level (Aleman, 2000). These activators such as Rap1p might enhance mRNA synthesis and decay. This combination of enhanced synthesis and decay allows acquisition of a new steady state level.

#### References

Aleman, C. et al. (2000). Cis-acting influences on Alu RNA levels. *Nucleic acid research*, 28 (23), 4755-4761.