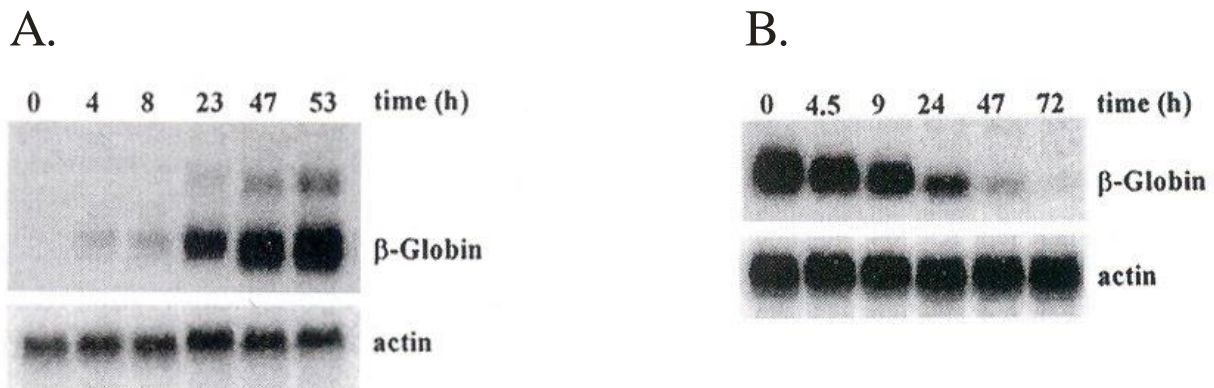


EXPRESSION OF THE β -GLOBIN GENE

Terms to be familiar with before you start to analyze the figure

*β -globin * plasmid * promoter * tetracyclins * transfection * Northern blot * actin*

The figure



The human β -globin gene was inserted into a plasmid under the control of a promoter that can be regulated by doxycyclin (a tetracyclin-type antibiotic). A human cell line was transfected with this recombinant plasmid and stable transfectants were isolated.

- (A.) Transfectants were cultured in a medium containing doxycyclin for the indicated time periods, followed by Northern blot analysis using β -globin and actin specific probes.
- (B.) The cells were cultured for 3 days in the presence of doxycyclin, followed by incubation in doxycyclin-free medium for the indicated time periods. Northern blotting with β -globin and actin probes was carried out.

Study the figures and answer the following questions!

1. What are the characteristics of “stable transfectants”? How are they isolated?
2. What was the aim of Northern blot analysis?
3. What was the aim of using an actin-specific probe?
4. What conclusion can be drawn from figure A.?
5. What conclusion can be drawn from figure B.?

The source of the figure

Andibert,A., D. Weil, F. Dantry (2002) In vivo kinetics of mRNA splicing and transport in mammalian cells. Mol. Cell. Biol. 22, 6706-6718.

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