

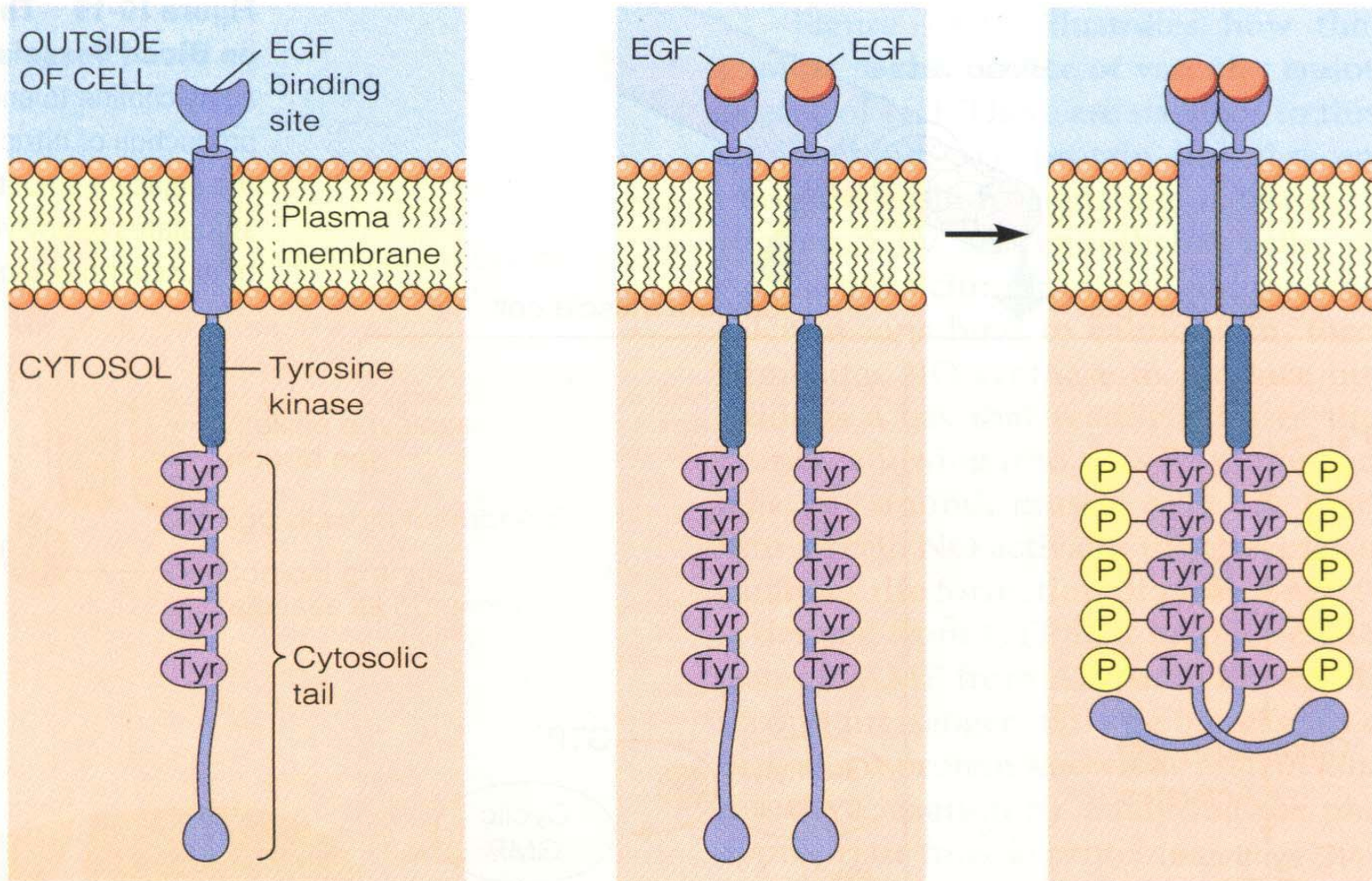
Nuclear localization of EGF receptor and its potential new role as a transcription factor



Shiaw-Yih Lin, Keishi Makino, Weiya Xia, Angabin Matin, Ka Yin Kwong, Lilly Bourguignon and Mien-Chie Hung

Nature Cell Biol. 3: (9) 802-808 SEP 2001

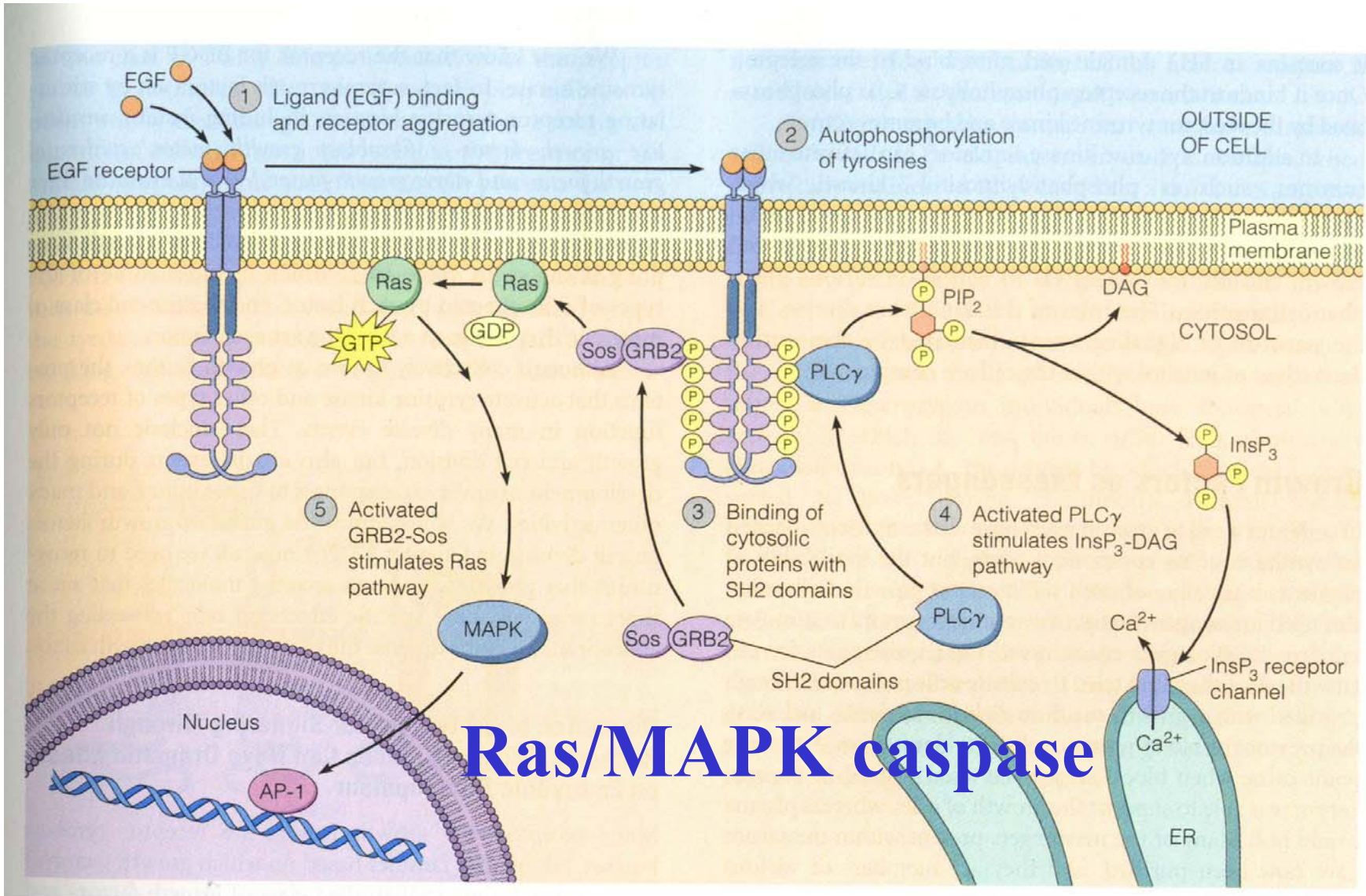
EGFR is Activated as a Dimer.



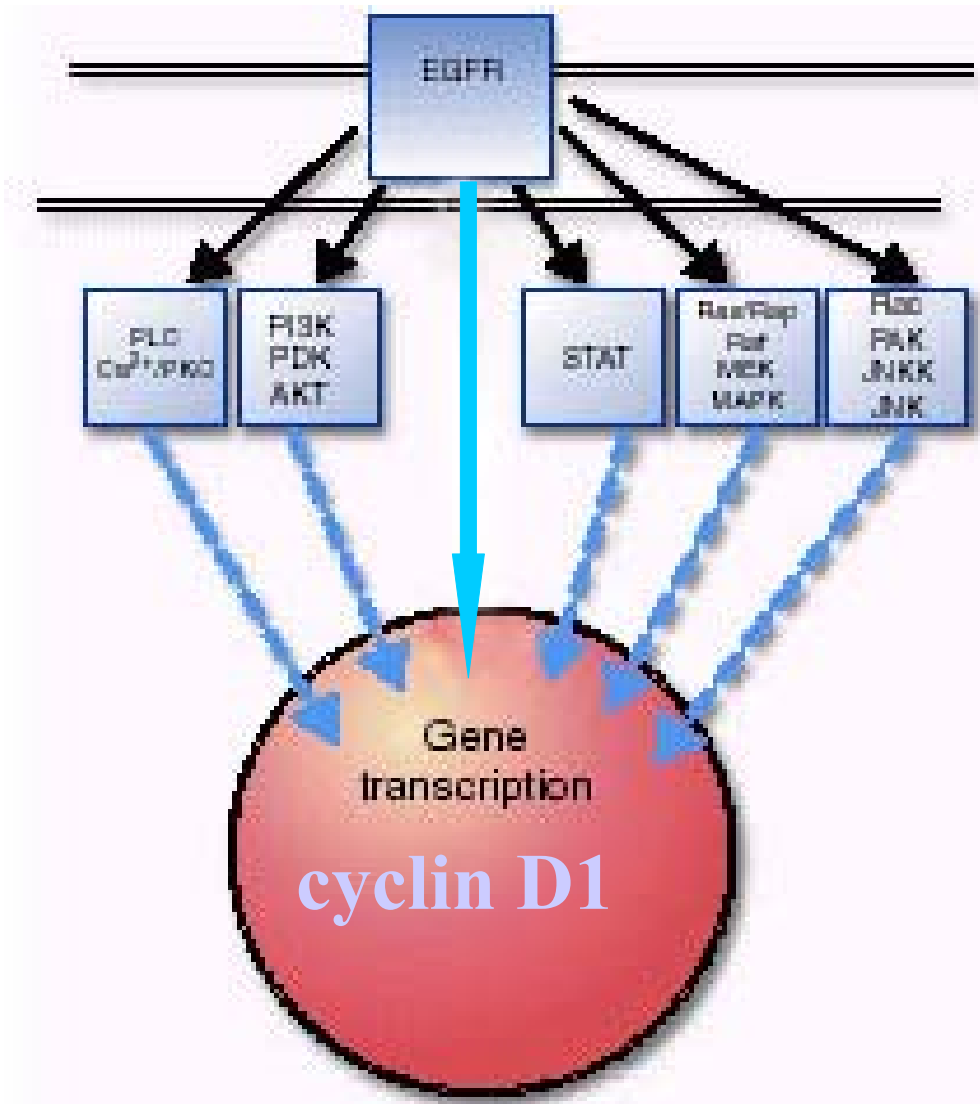
(a) Inactivated

(b) Activated in the presence of EGF.

Role of EGF & EGFR



What They Found?



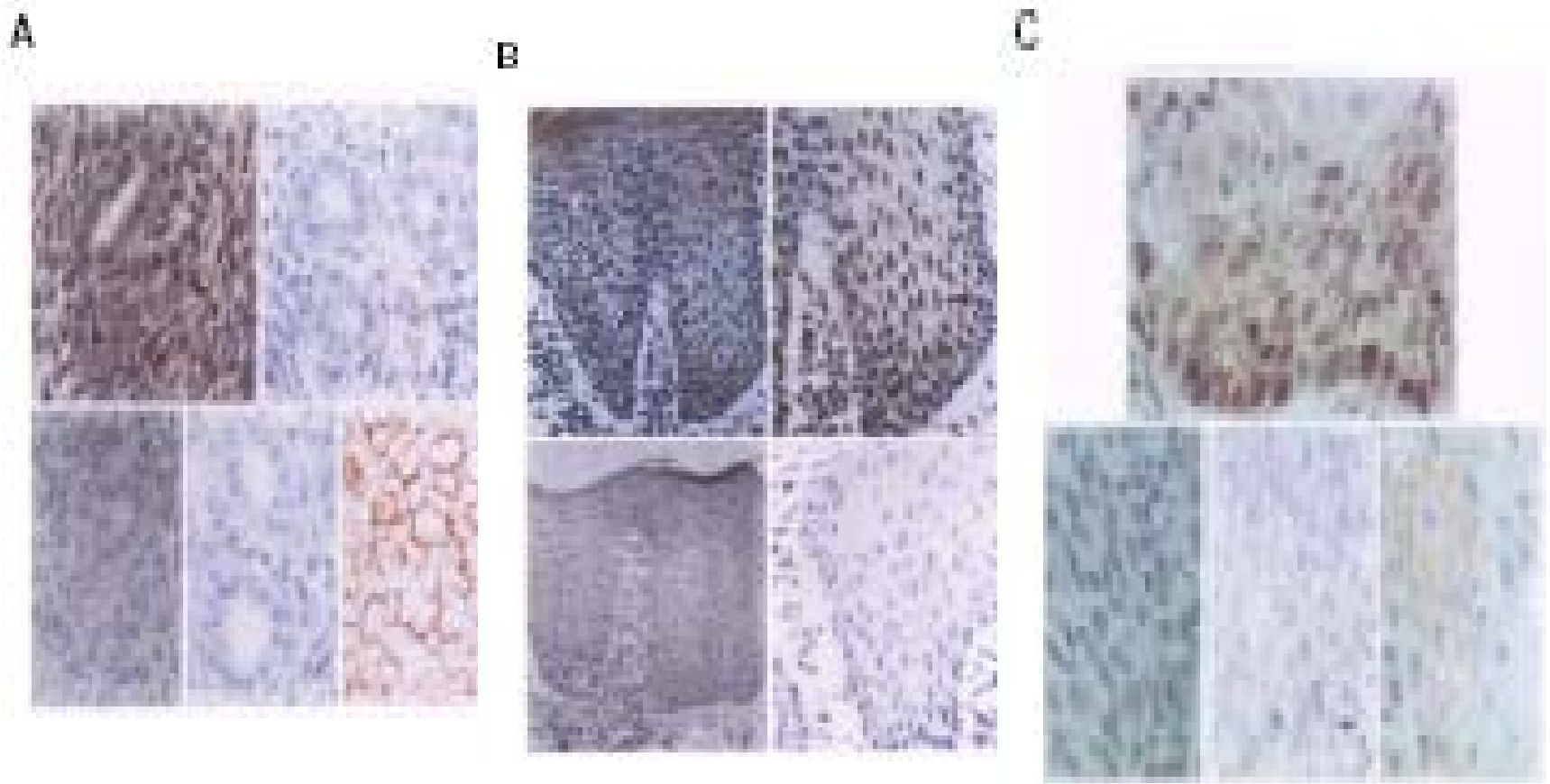
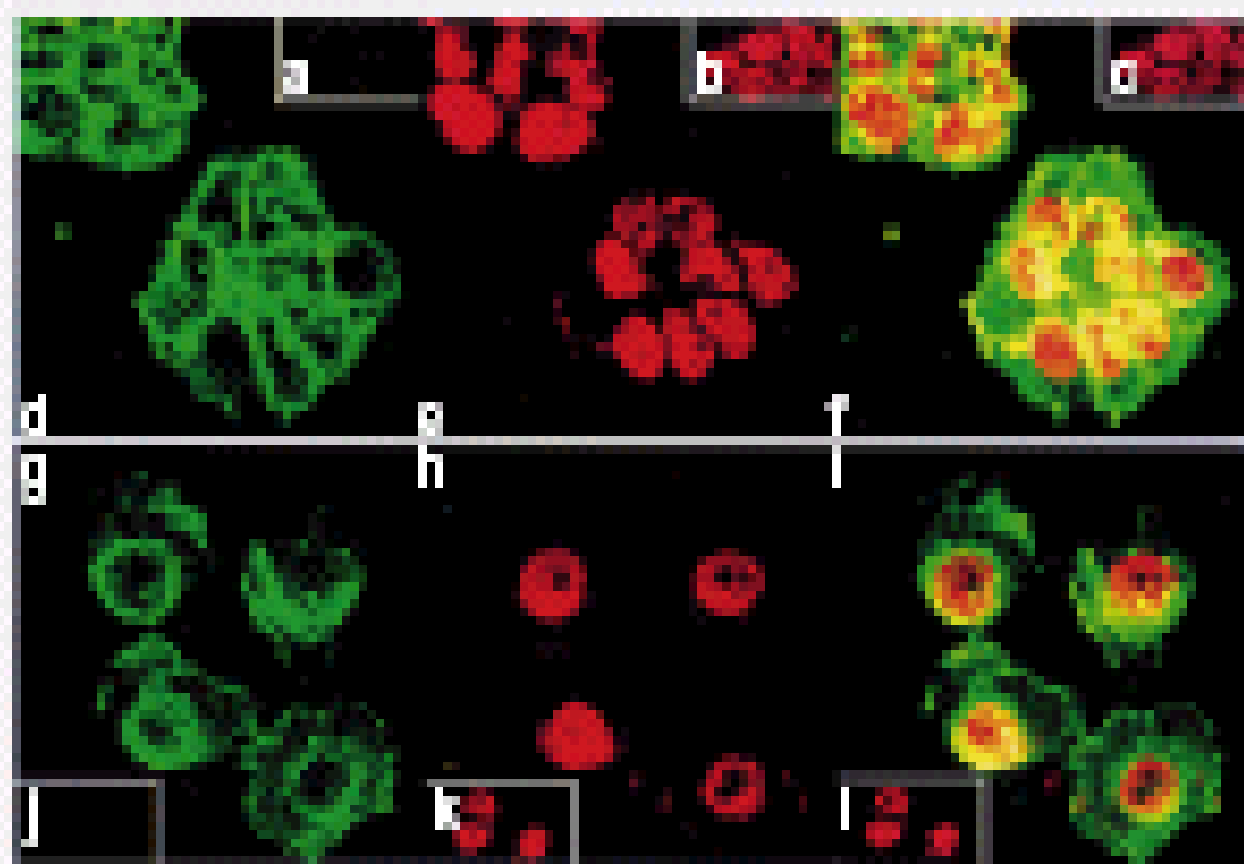


Figure 1
Immunohistochemical Staining (in vivo)



A431

**MDA-
MB-468**

Figure1 Continued (in vitro)

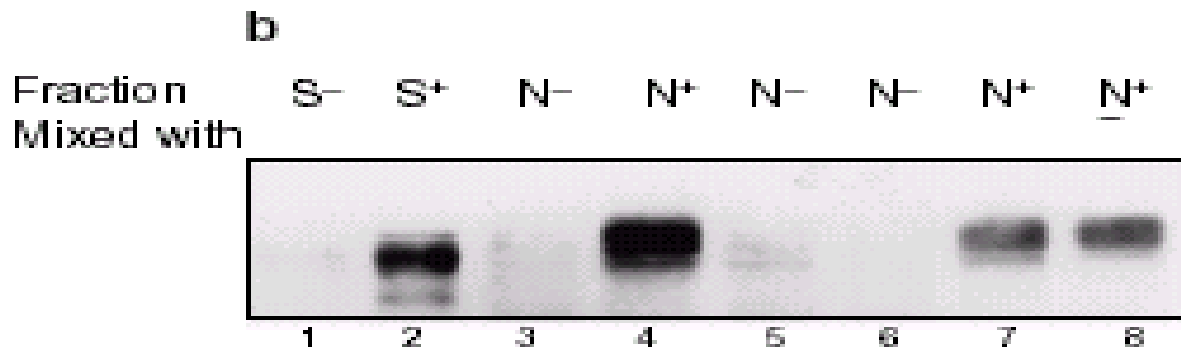
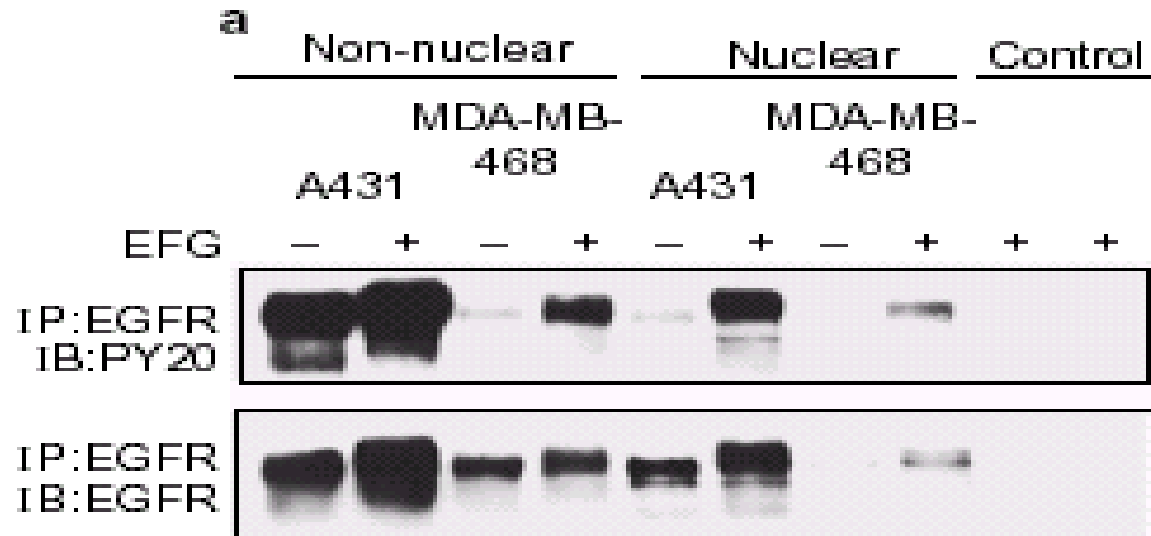


Figure 2 Detection of EGFR in the nuclear fractions of A431 & MDA-MB-468 cells

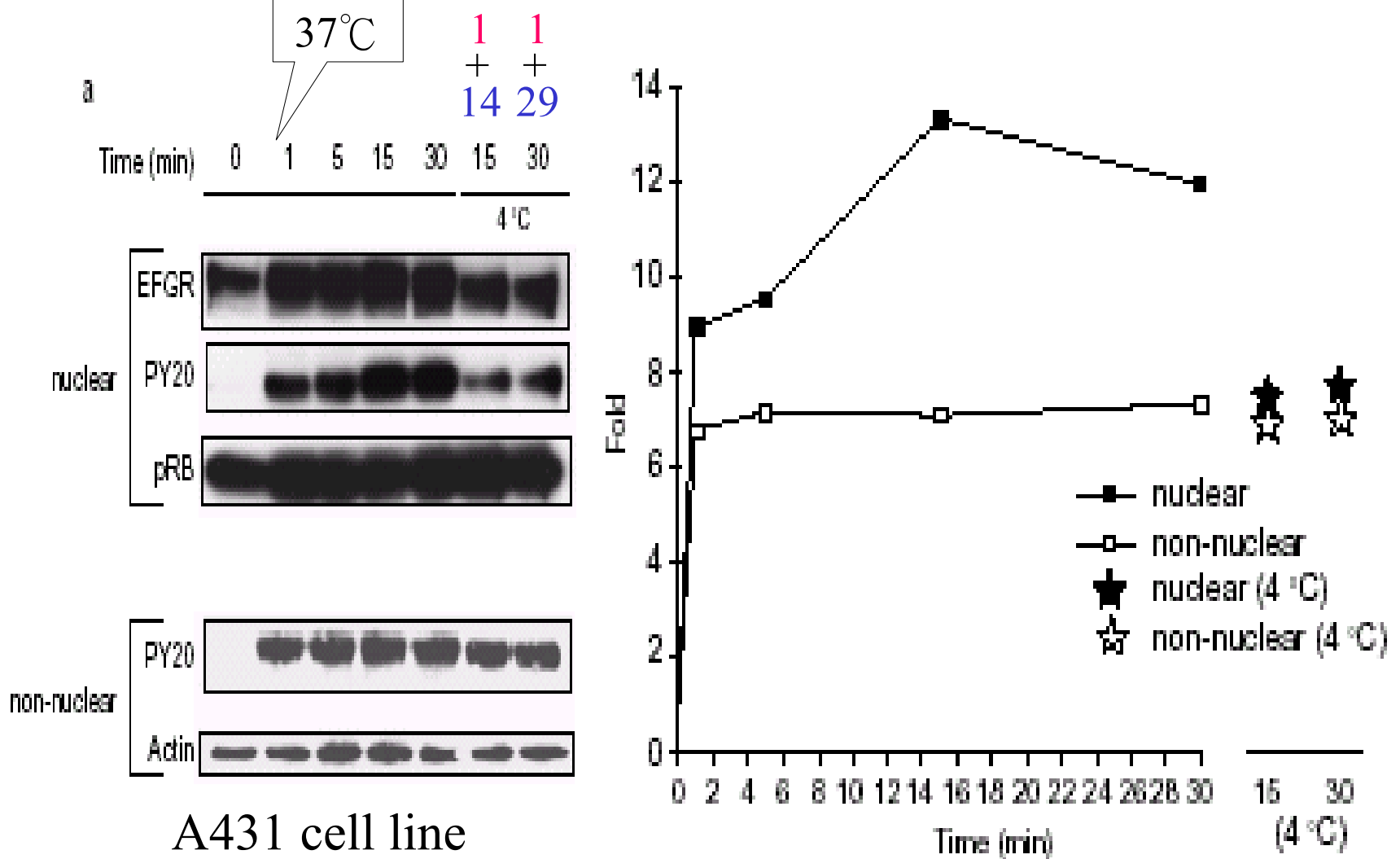


Figure3 Time-course study of EGFR nuclear localization.

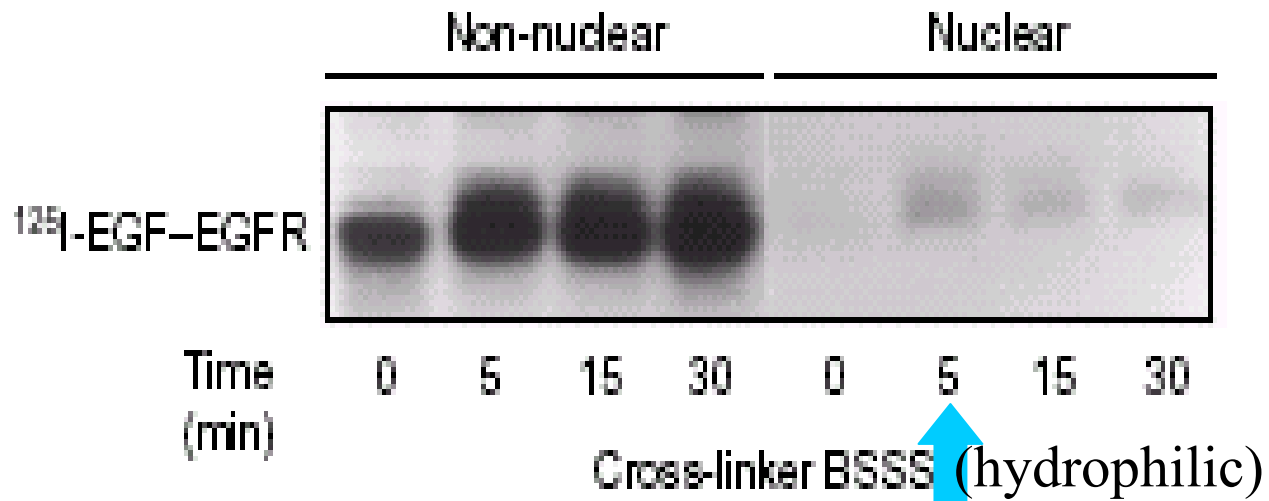
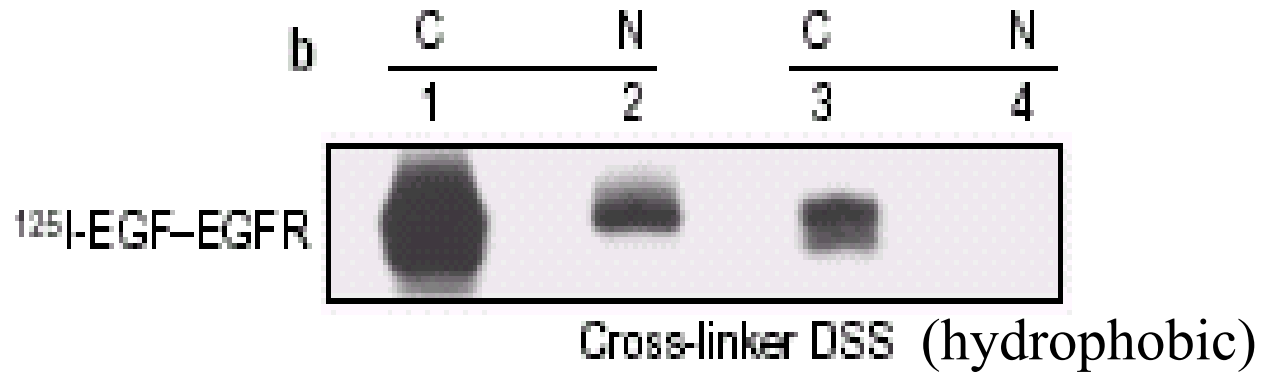
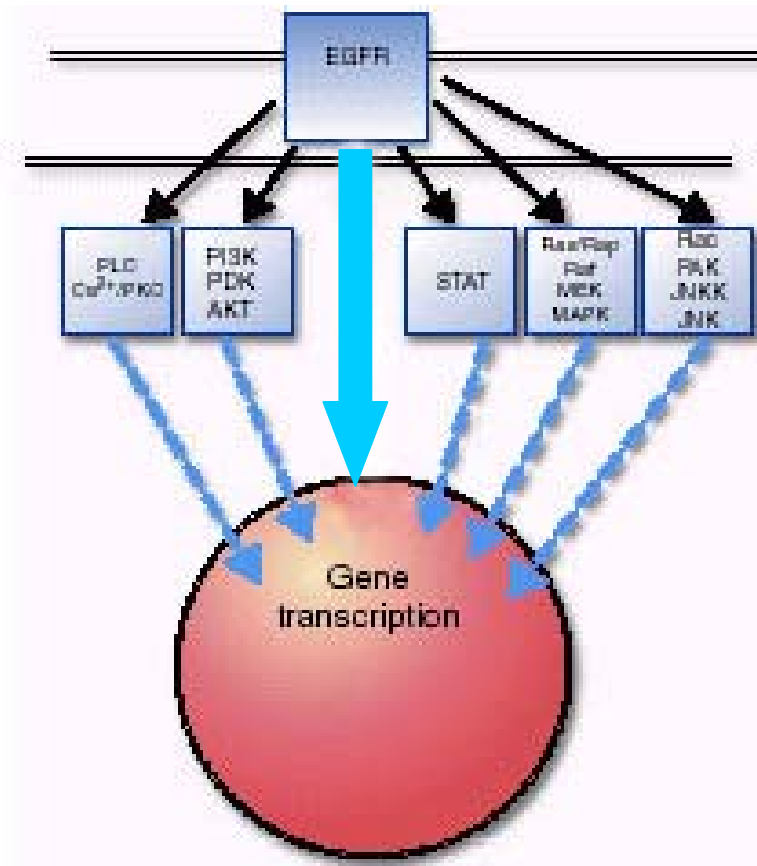
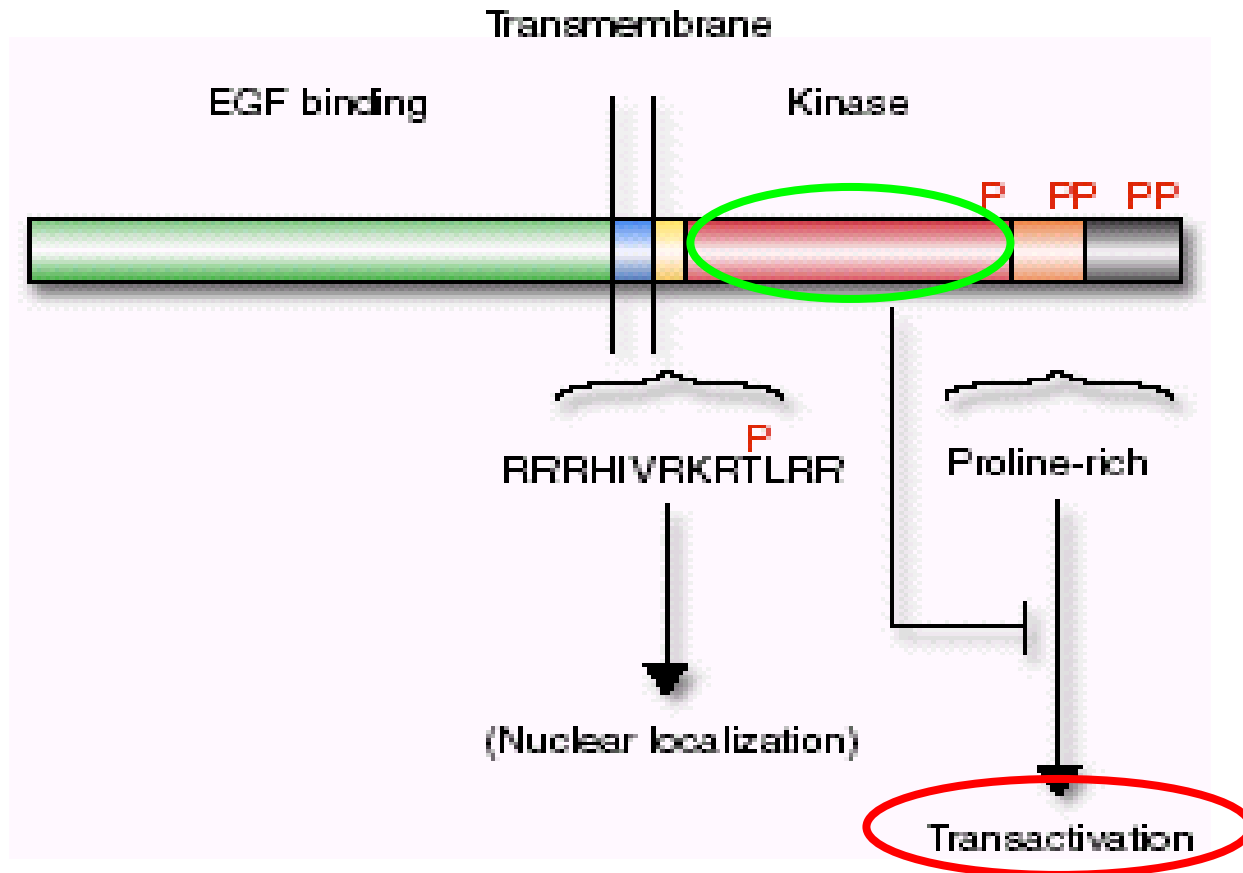


Figure 3 continued.

Successful from cell membrane to the nuclear membrane



EGFR domain topology



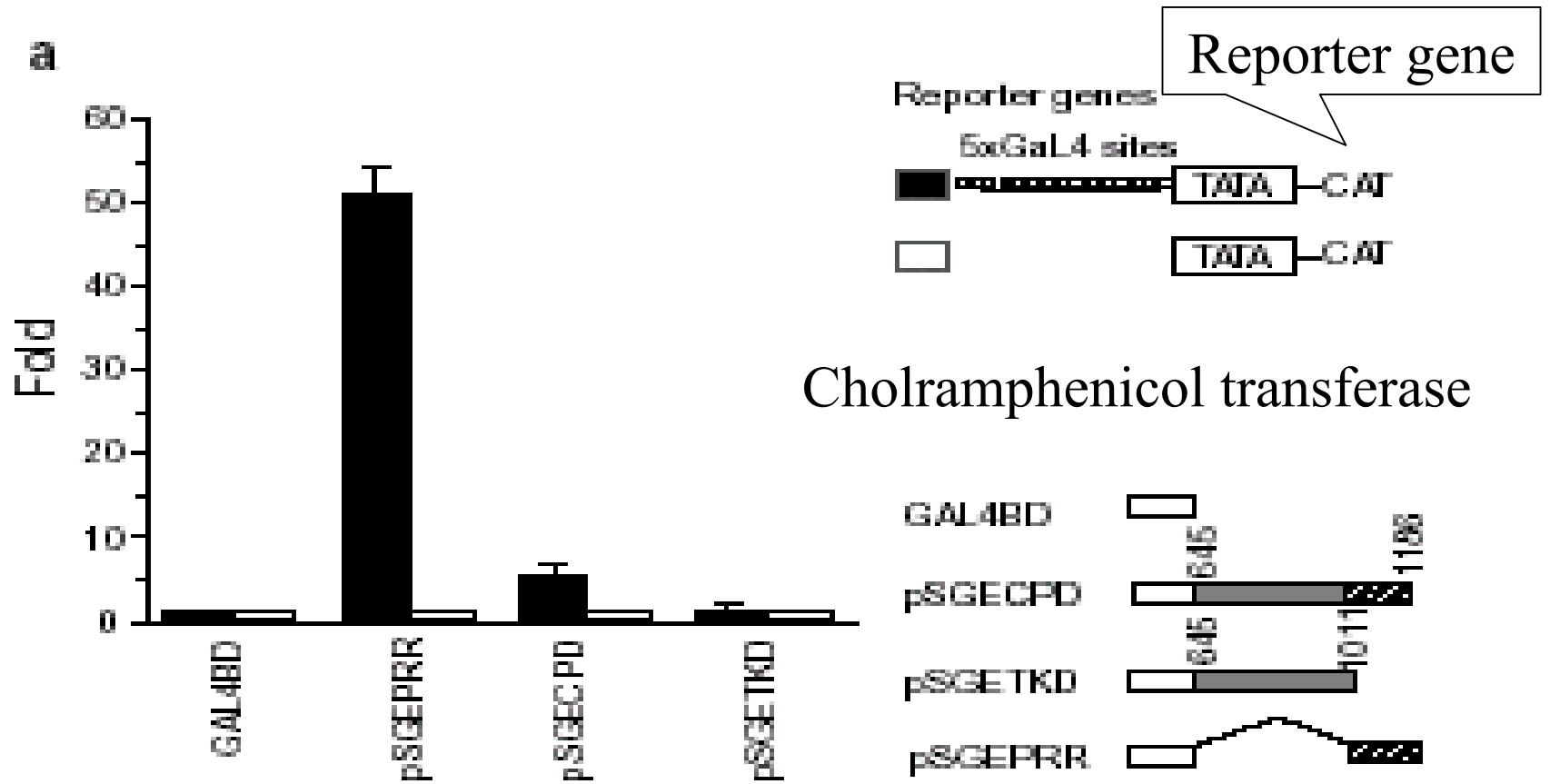
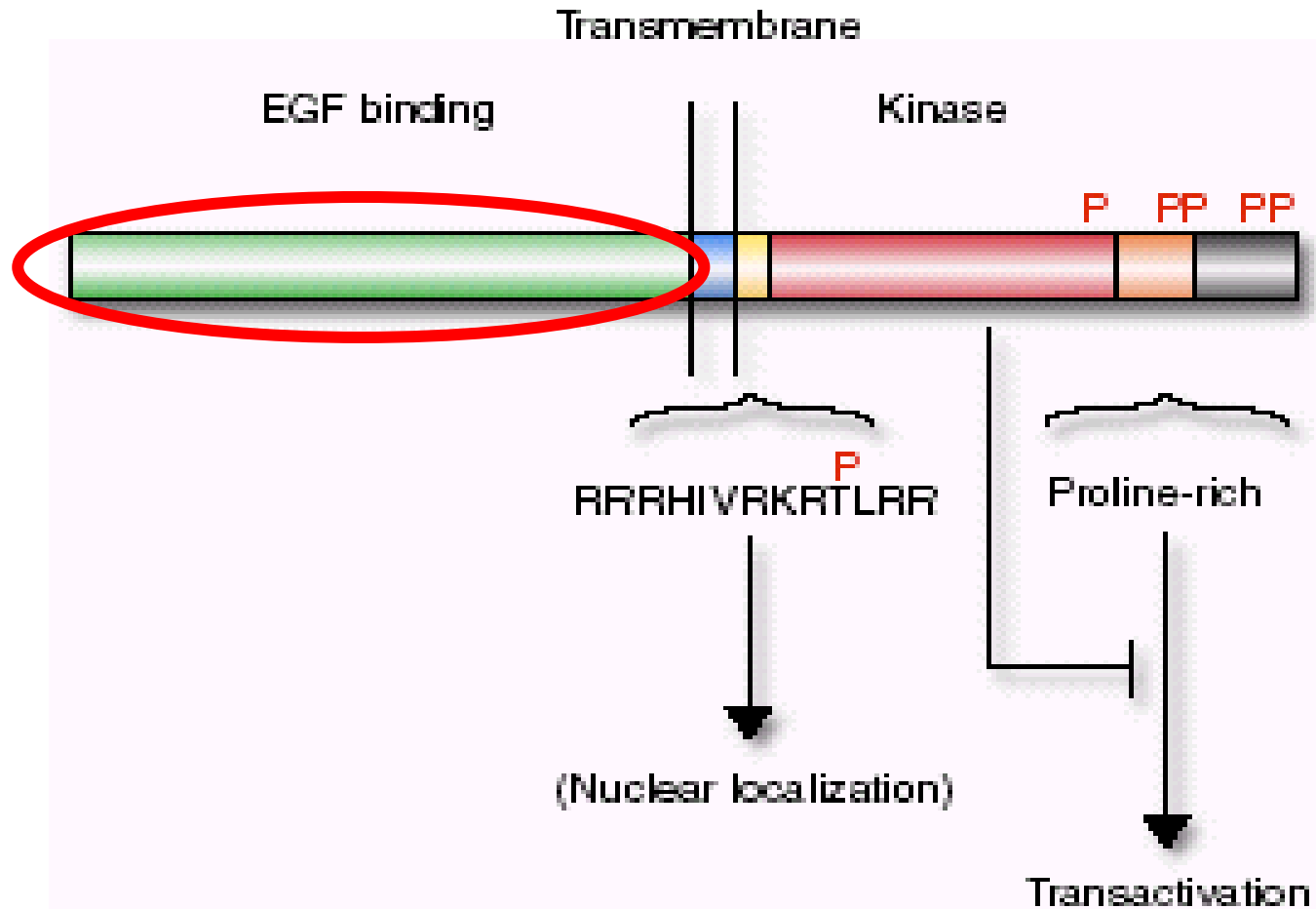


Figure 4 Activation of Gene expression by the C-terminus of EGFR

EGFR domain topology



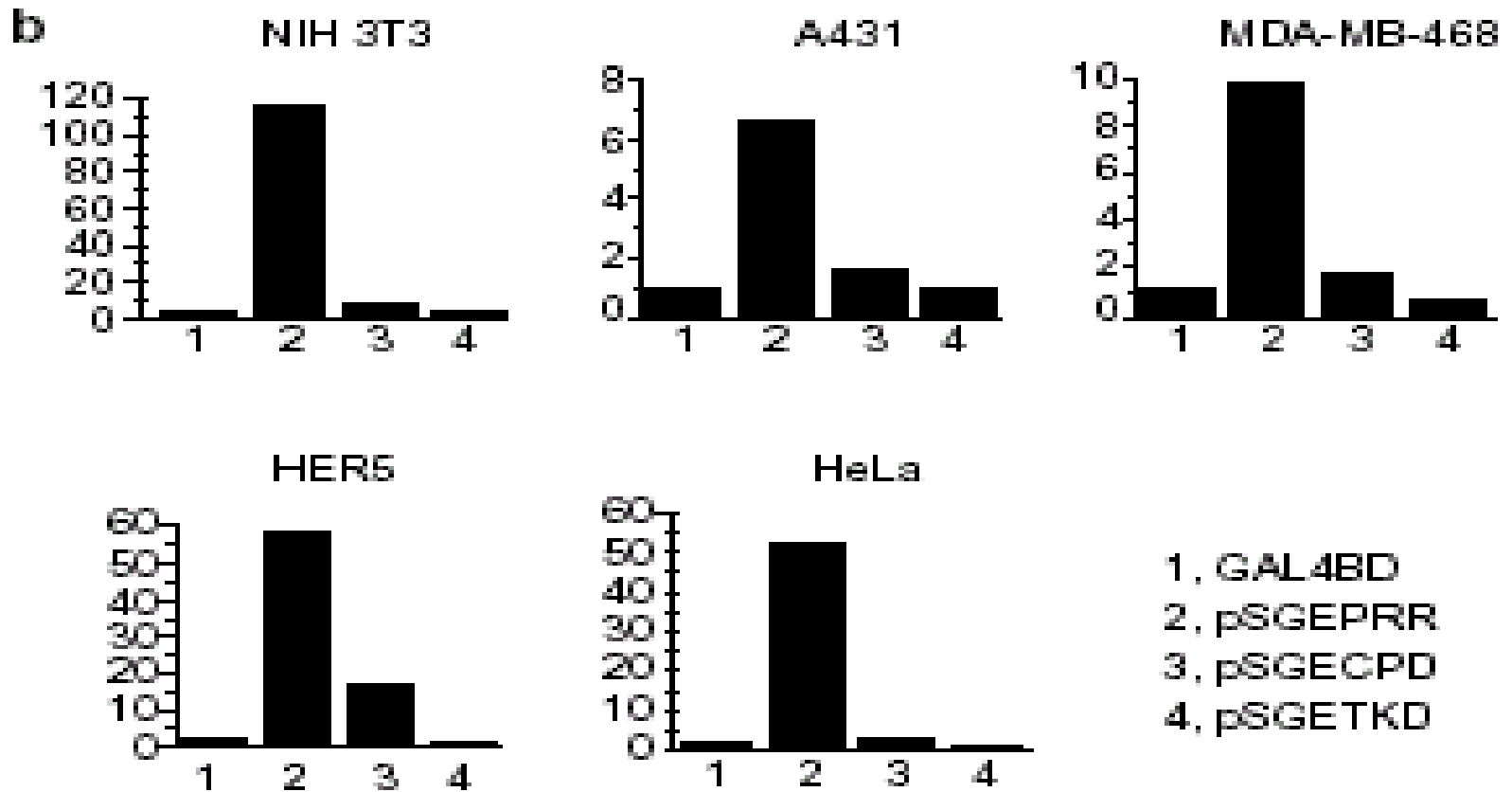


Figure4 continued (in general)

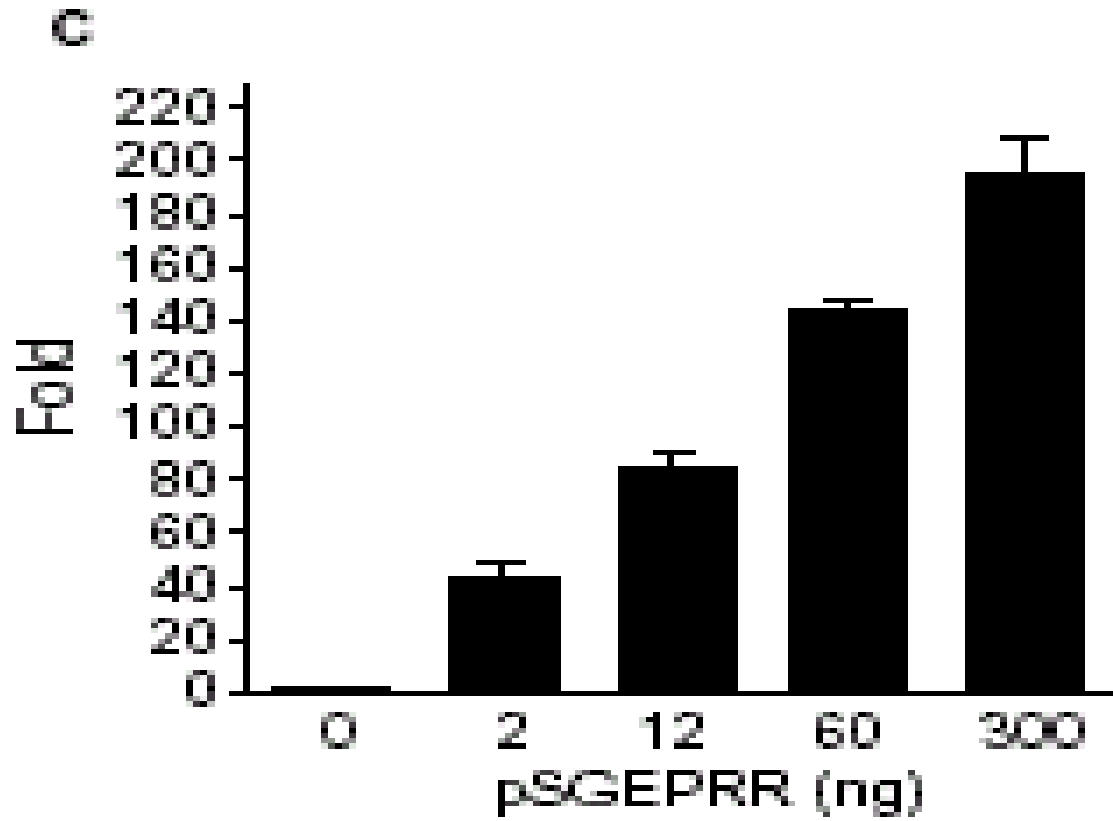
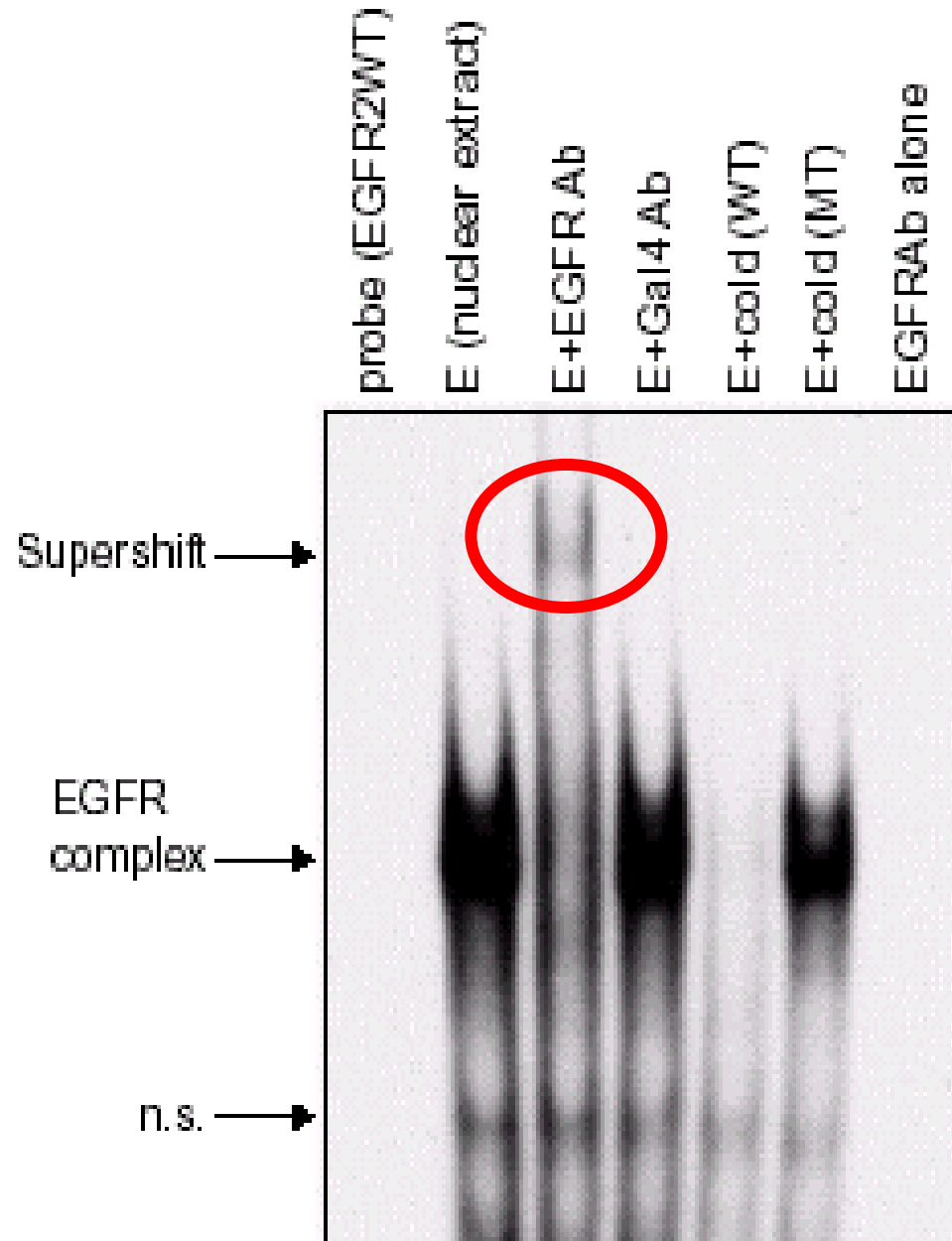


Figure4 continued (dose-dependent)

Figure 5
AT-rich
consensus
seq. (ATRs)
identified
by
CASTing



a

```
TTTTATGCGCCTTCGTGATGCTTTTCCGCTCGTG  
CTTGTACGGTCCCCCATTTTACGCTGGTCCT  
CAGACCTGAGTCTGTTGTGGCCCTTCGTGTTCT  
TTGGTGTCCGGCTGCTCCTAATGTCGTAAATGCCT  
TTTGGGTATAATGTTCTGTTCGCCCCCTTGTCTT  
GTGCCTTGCCTTGCACCTCACTCCCGTGTTCCTCTT
```

Consensus sites: TTTT
TTTNT



AT-rich sequences (ATRSS)

b

```
EGFR2WT: CTGTTACGGTCCCCCATTTTACGCTGGTCCT  
EGFR2MT: CTAGTCCACGGTCCCCCATCTGGTACGCTGGTCCT
```

Figure5 continued

Reporter gene=Luciferase

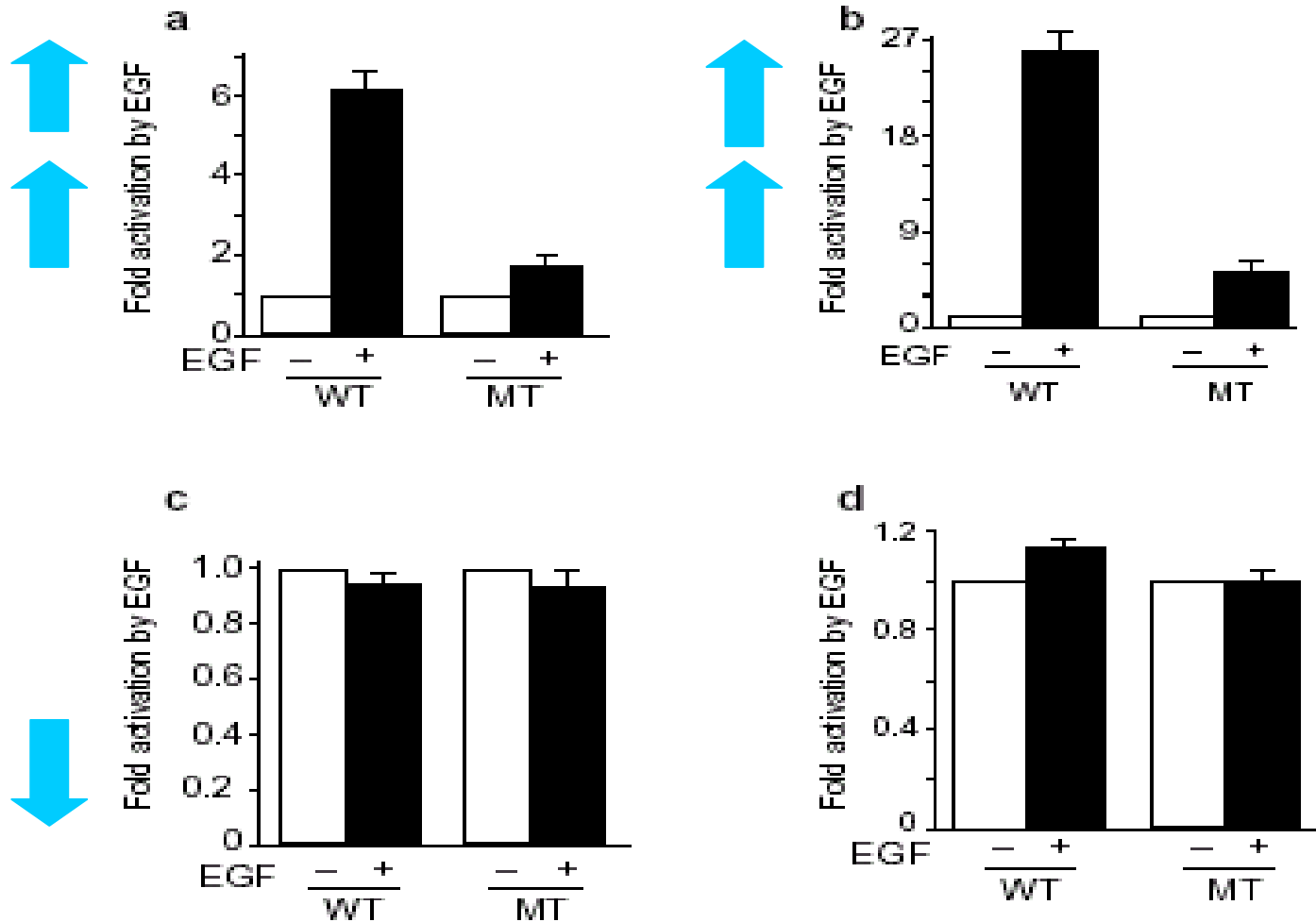


Figure 6 Activation of ATRs-specific reporter gene expression by EGF.

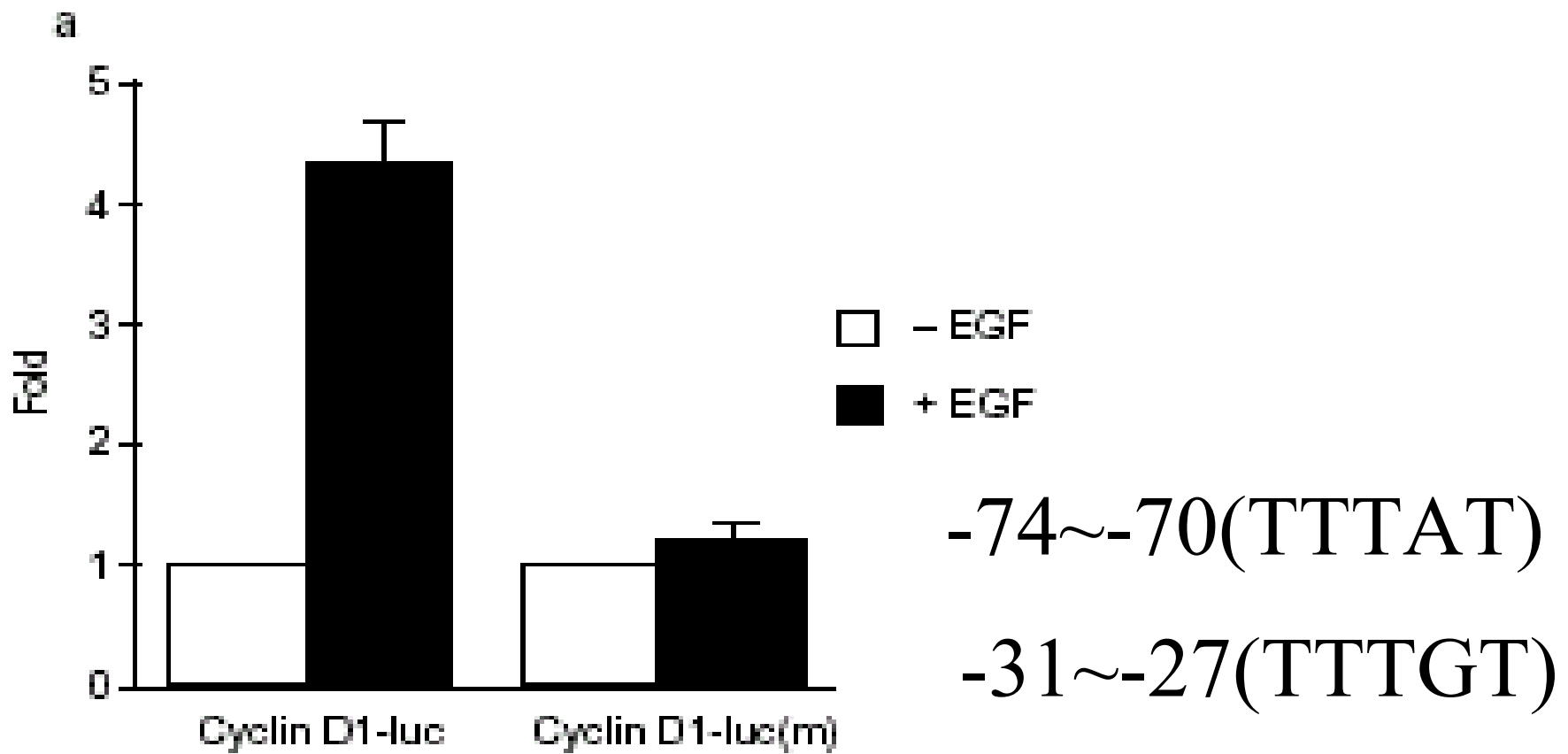


Figure 7 ATRs-dependent activation of cyclin D1 promoter by EGF, and association of EGFR with cyclin D1 promoter in vivo.(MDA-MB-468)

Nuclear lysate

b



M 1 2 IgG In 1 2 IgG In dw

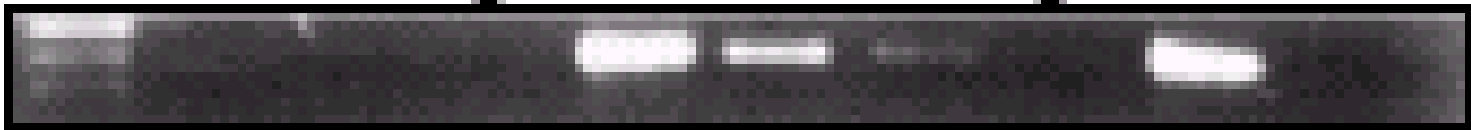
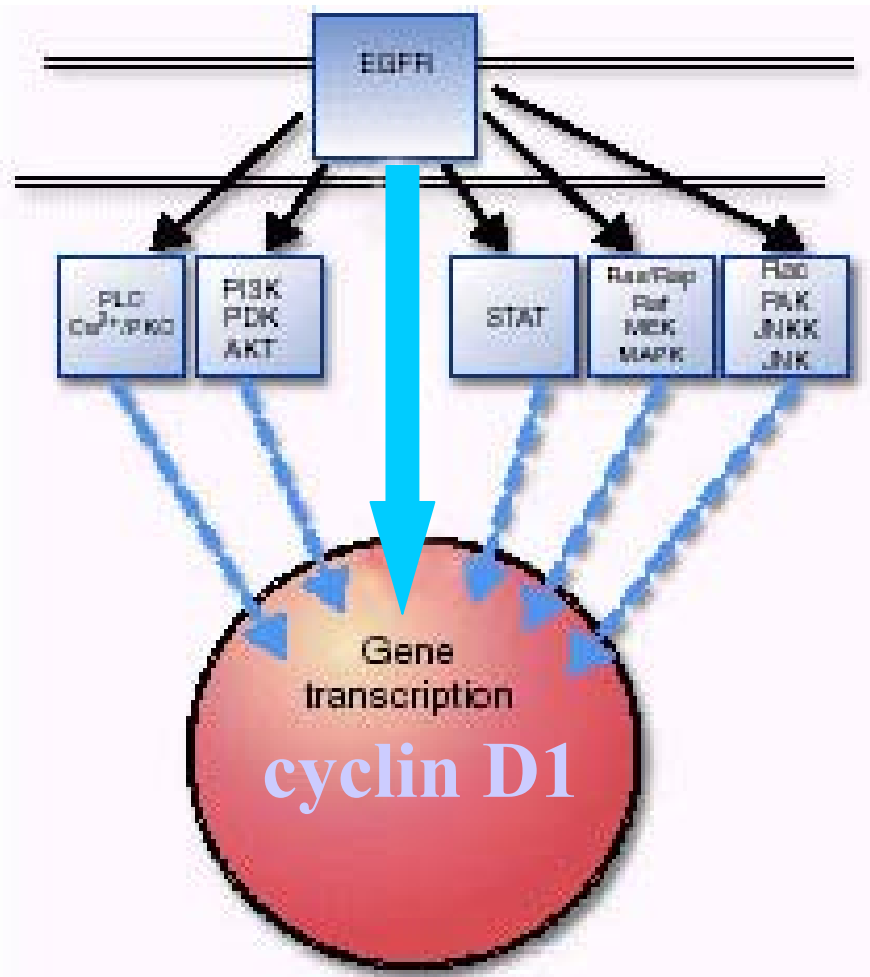


Figure 7 continued. (A431)

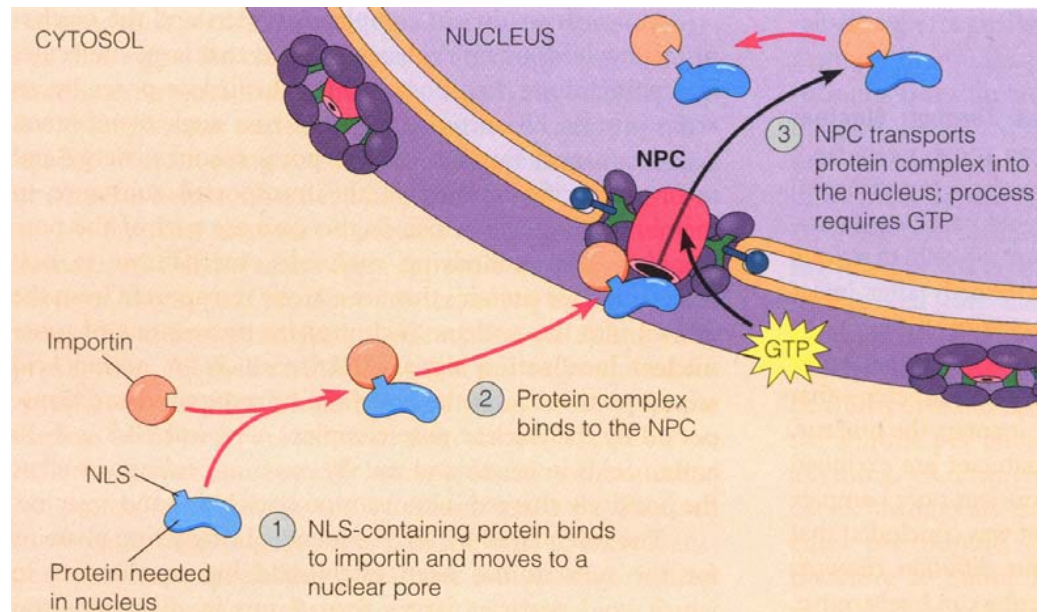
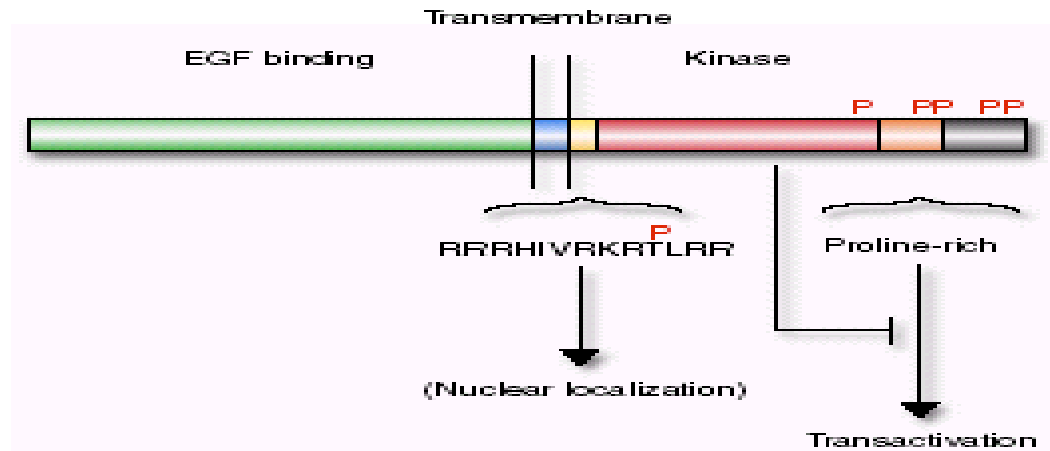
Discussion

- EGFR binds to specific DNA sequence to activate gene expression. (cyclin D1)



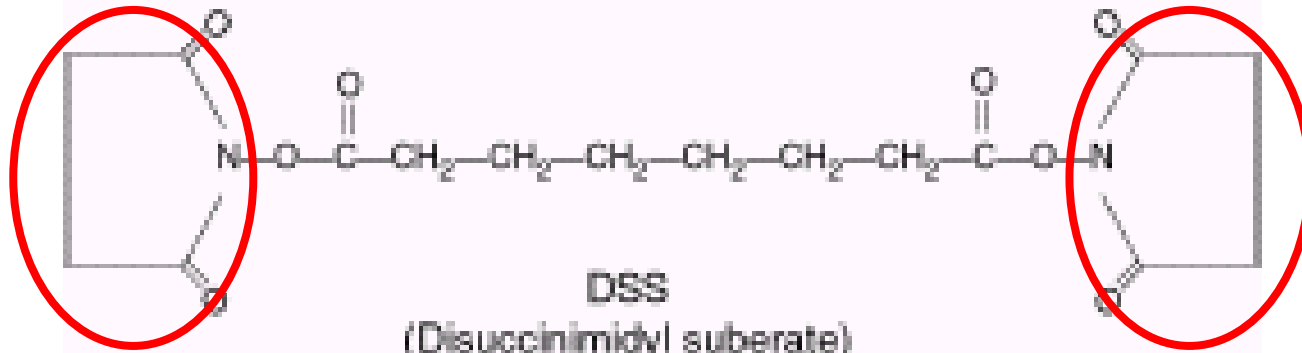
Nuclear Localization Signal (NLS)

- EGFR might be translocated into the nucleus through the ran/Importin pathway.

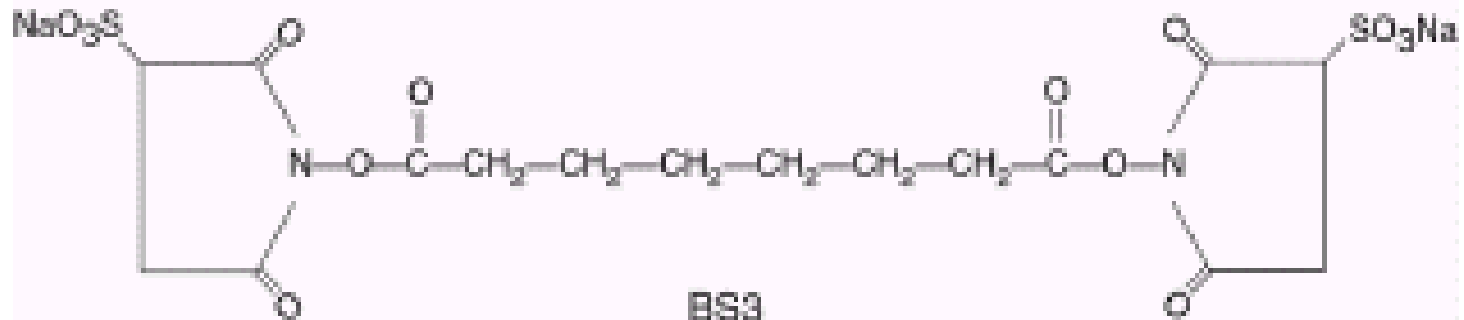


The End

Cross-linker



DSS
(Disuccinimidyl suberate)
MW 368.35
Spacer Arm Length 11.4Å



BS3
[Bis(Sulfosuccinimidyl) suberate]
MW 572.43
Spacer Arm Length 11.4Å

Format of the journal.

- Title
- Authors
- Abstract
- Texts
- Methods
- Accession number
- Acknowledgements
- References

Texts

- Introduction related about the references.
- Focused account of the experimental findings with subheadings of no more than 40 characters.
- Ending with 3 or 4 short paragraphs of discussion.

Methods

- Ensure there is a space between numbers and units (for example, 2 mm)

Figure legends

- Figure legends begin with a brief title for the whole figure