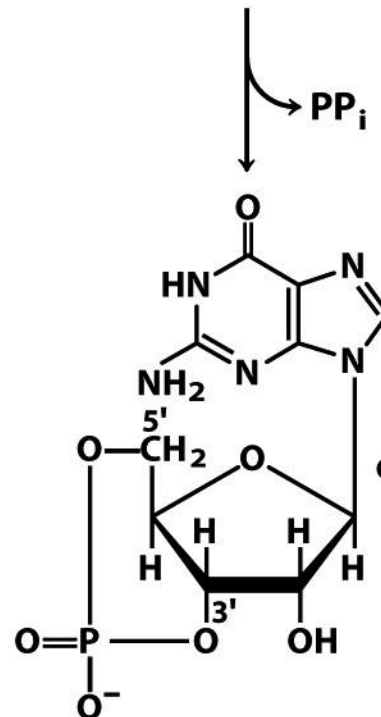
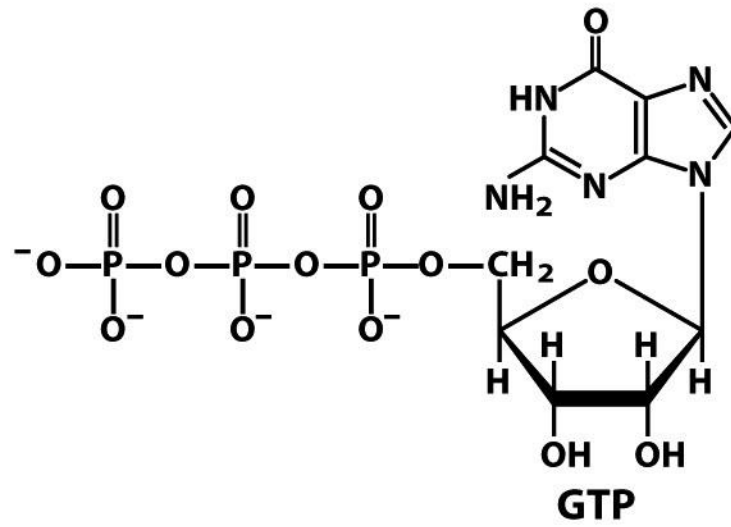


Recettori con attività guanilil ciclasica
il cGMP e la proteina chinasi G



**Guanosine 3',5'-
cyclic monophosphate
(cGMP)**

Unnumbered 12 p445

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Isoenzimi della guanilil ciclasasi

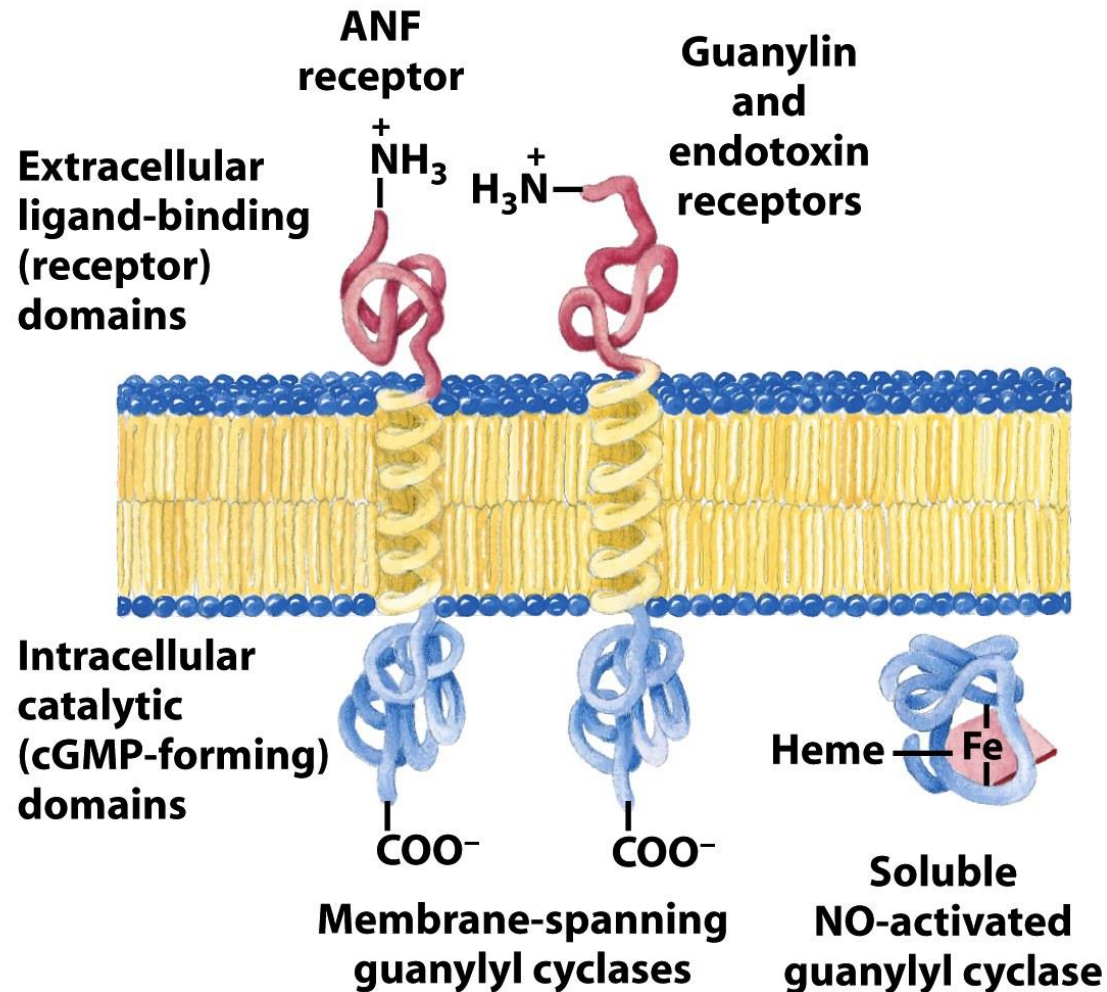
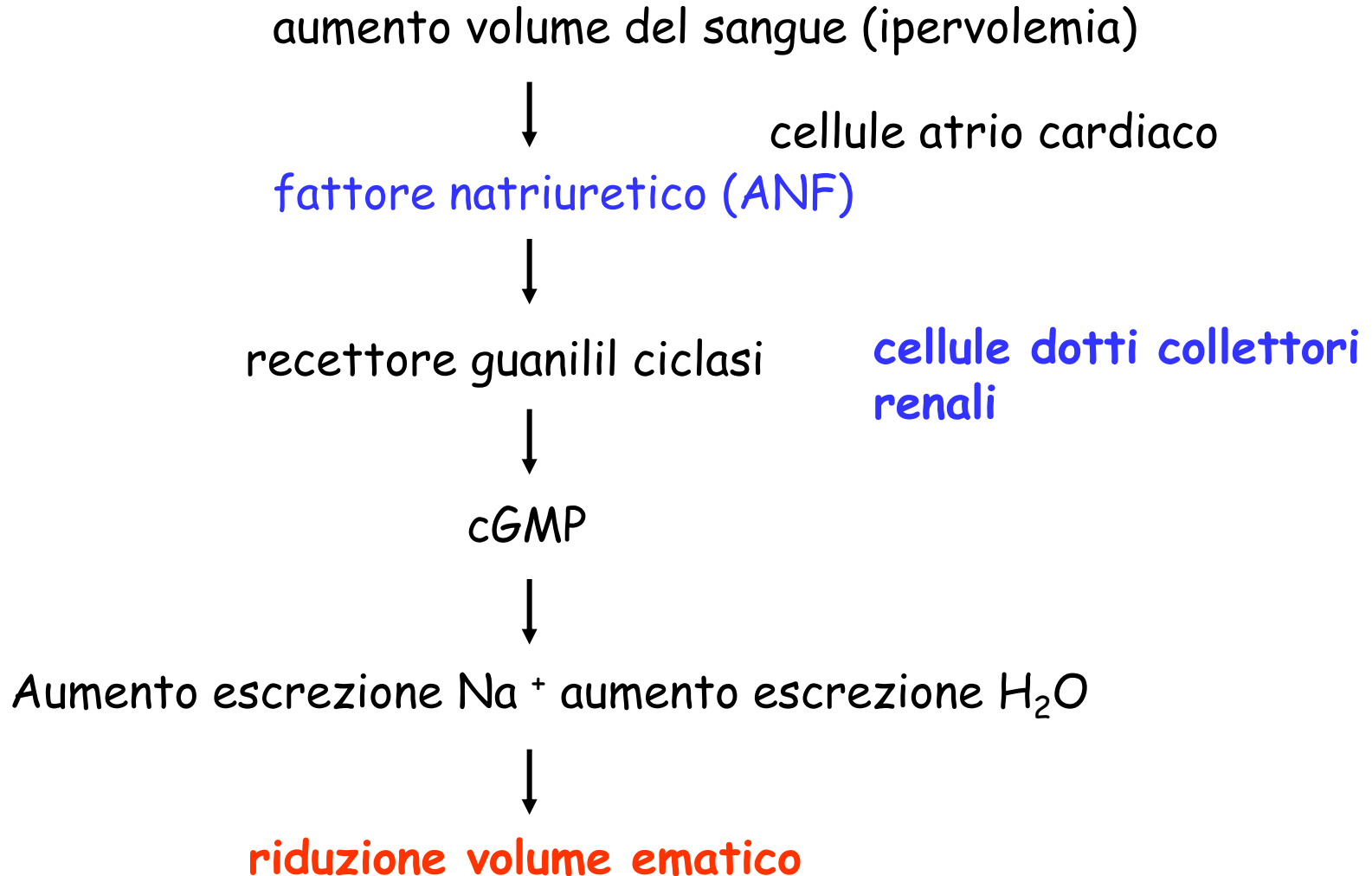


Figure 12-20
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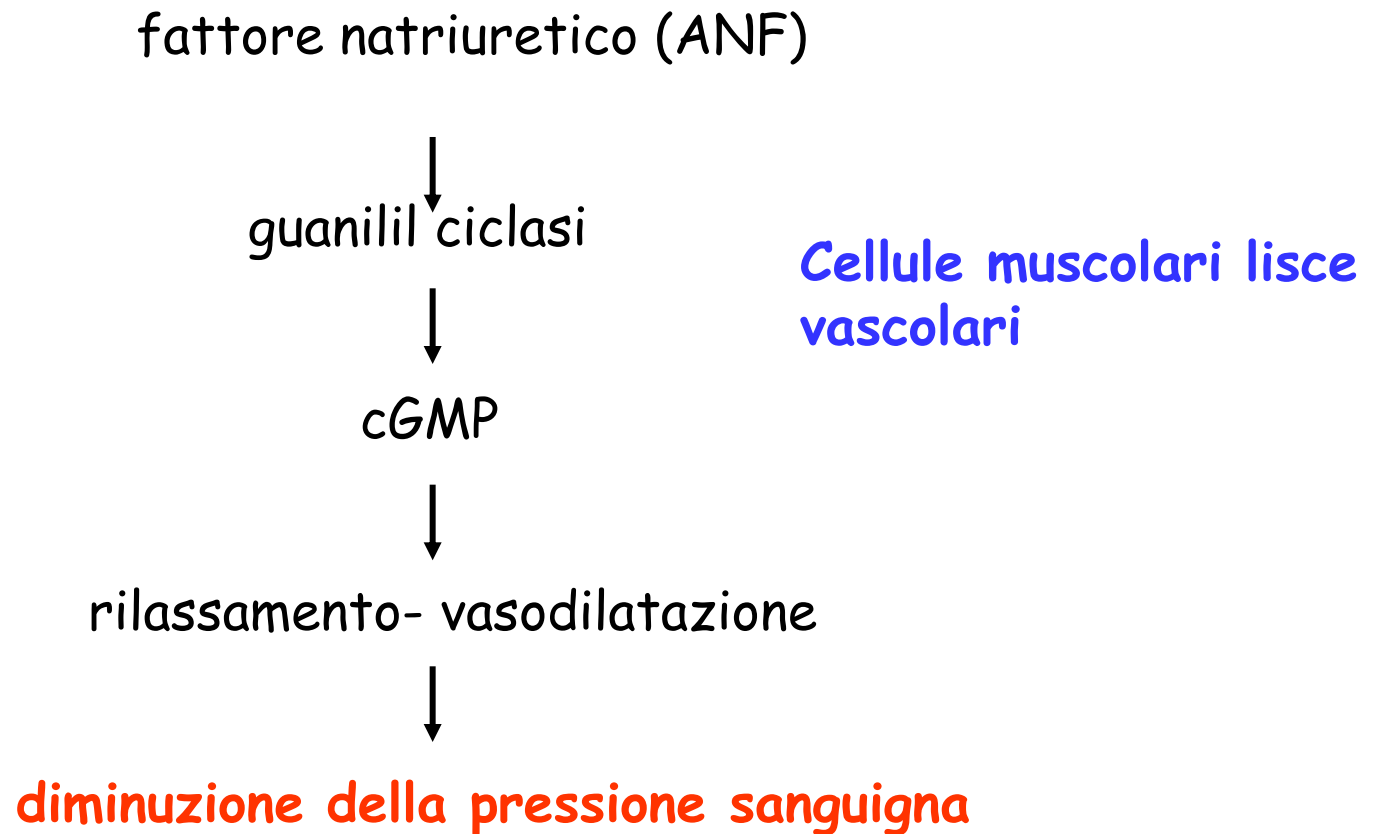
Guanilil ciclasì di membrana

Esempio: guanilato ciclasì nel rene= **recettore del fattore natriuretico atriale (ANF)**



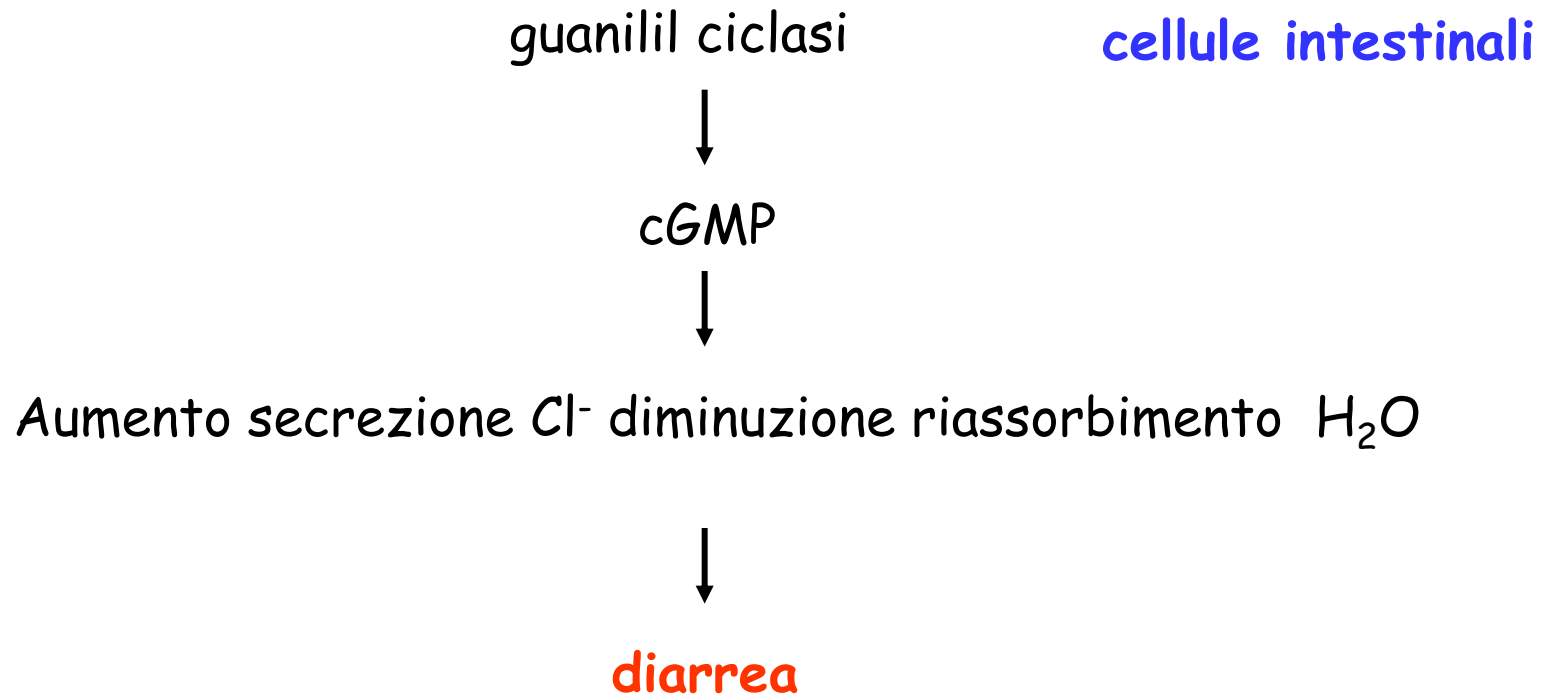
Guanilil ciclasì di membrana

Esempio: guanilato ciclasì cellule muscolari lisce vascolari=
recettore del fattore natriuretico atriale (ANF)



Guanilil ciclasì di membrana

Esempio: recettore della guanilina e della endotossina batterica



Isoenzimi della guanilil ciclasasi

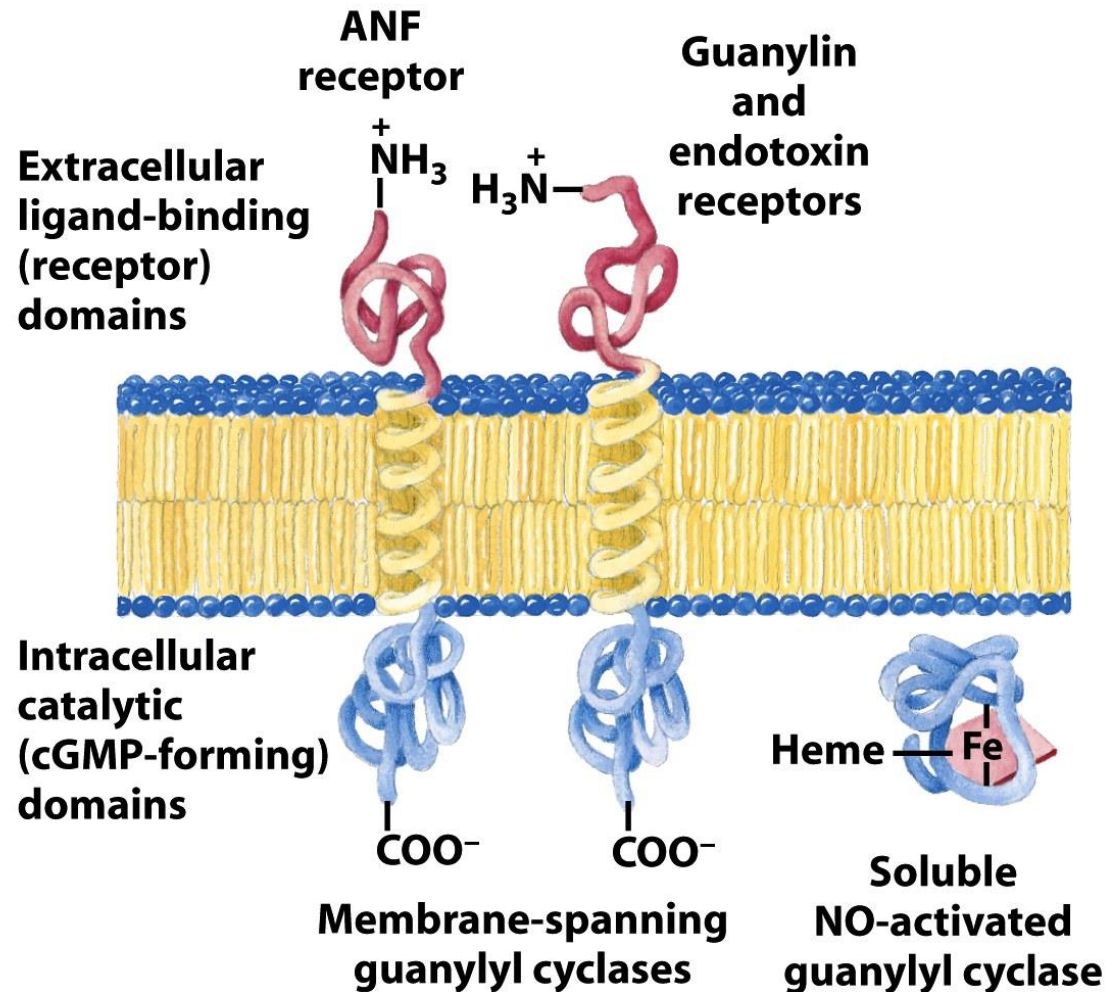
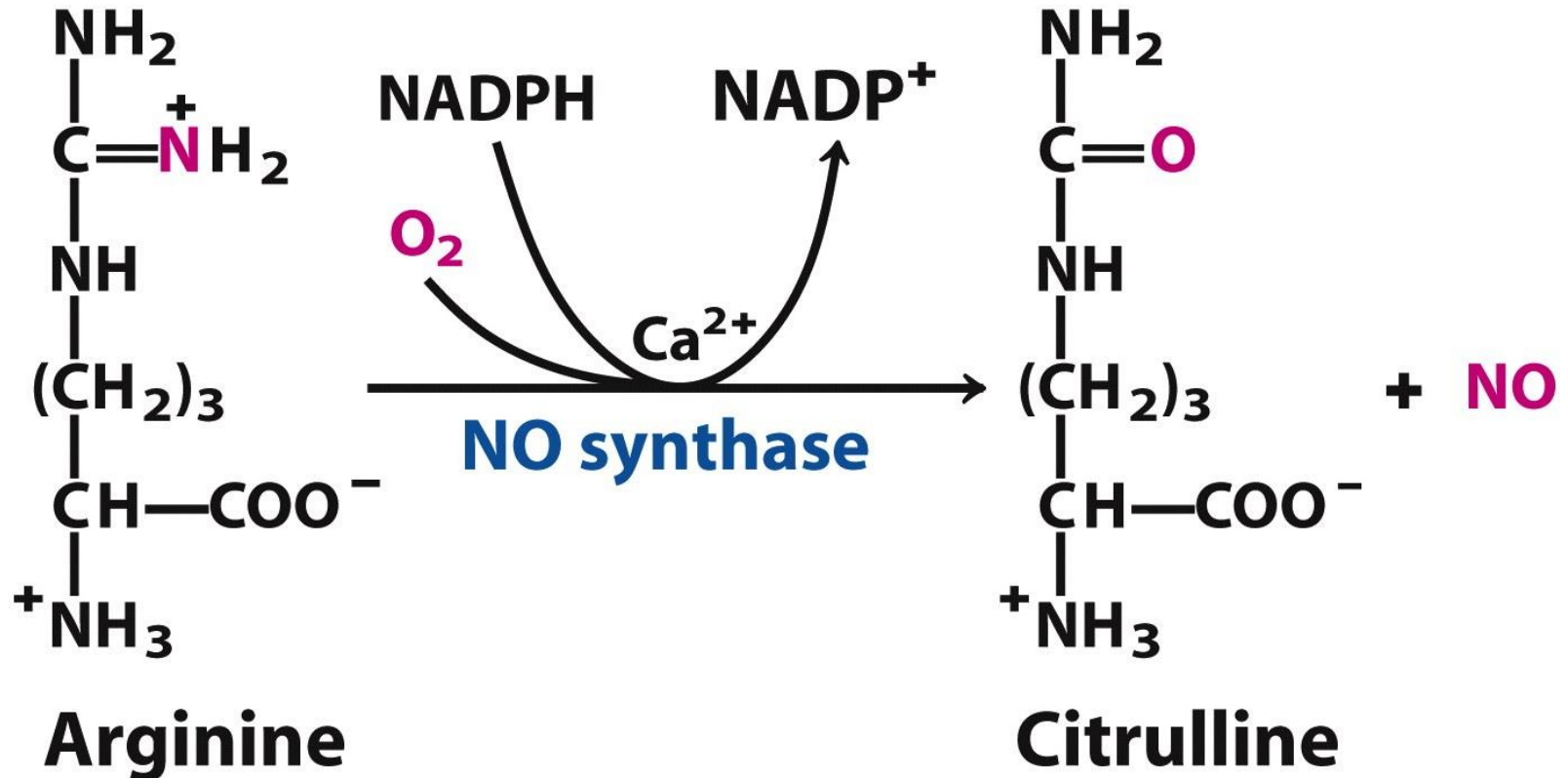
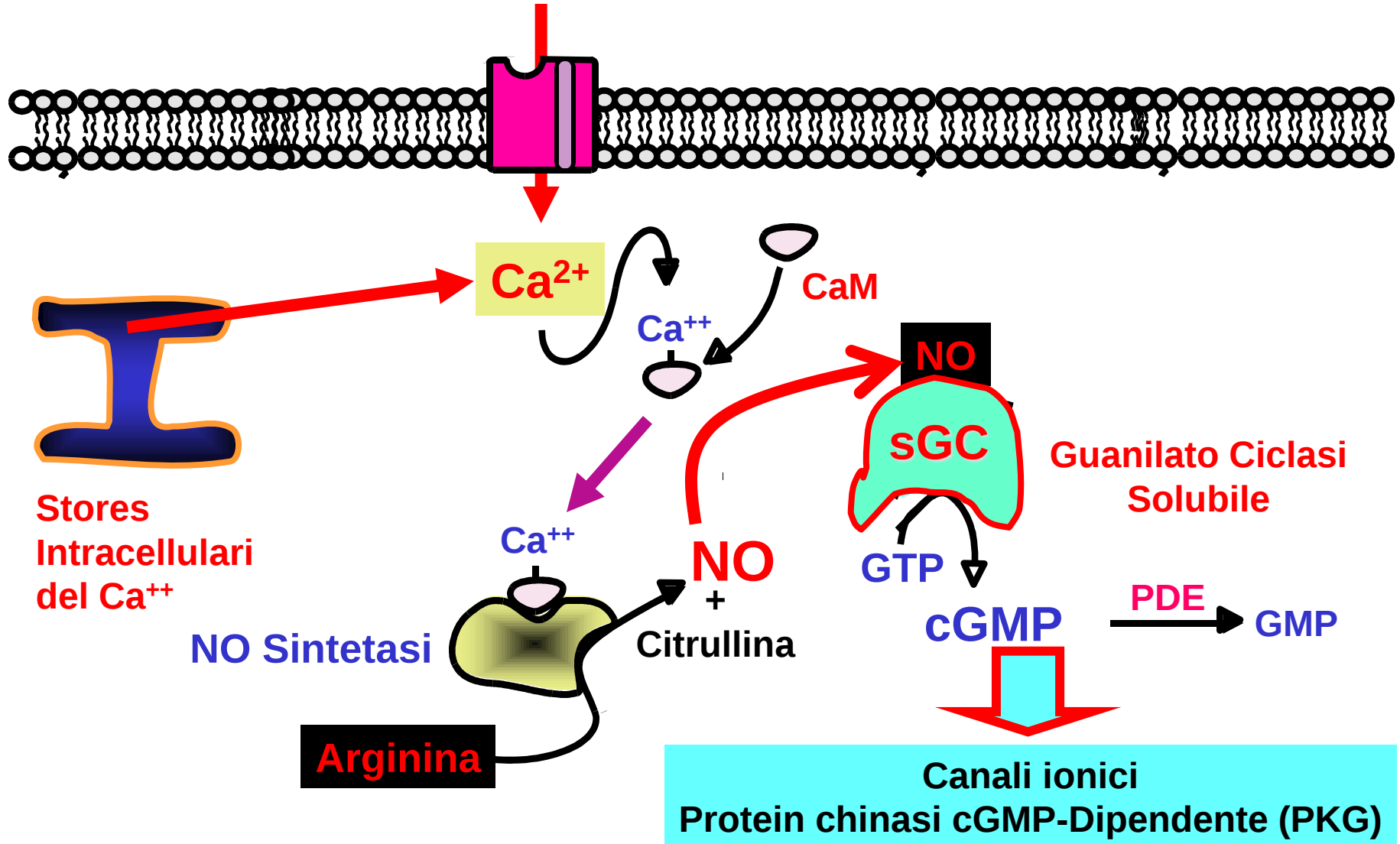


Figure 12-20
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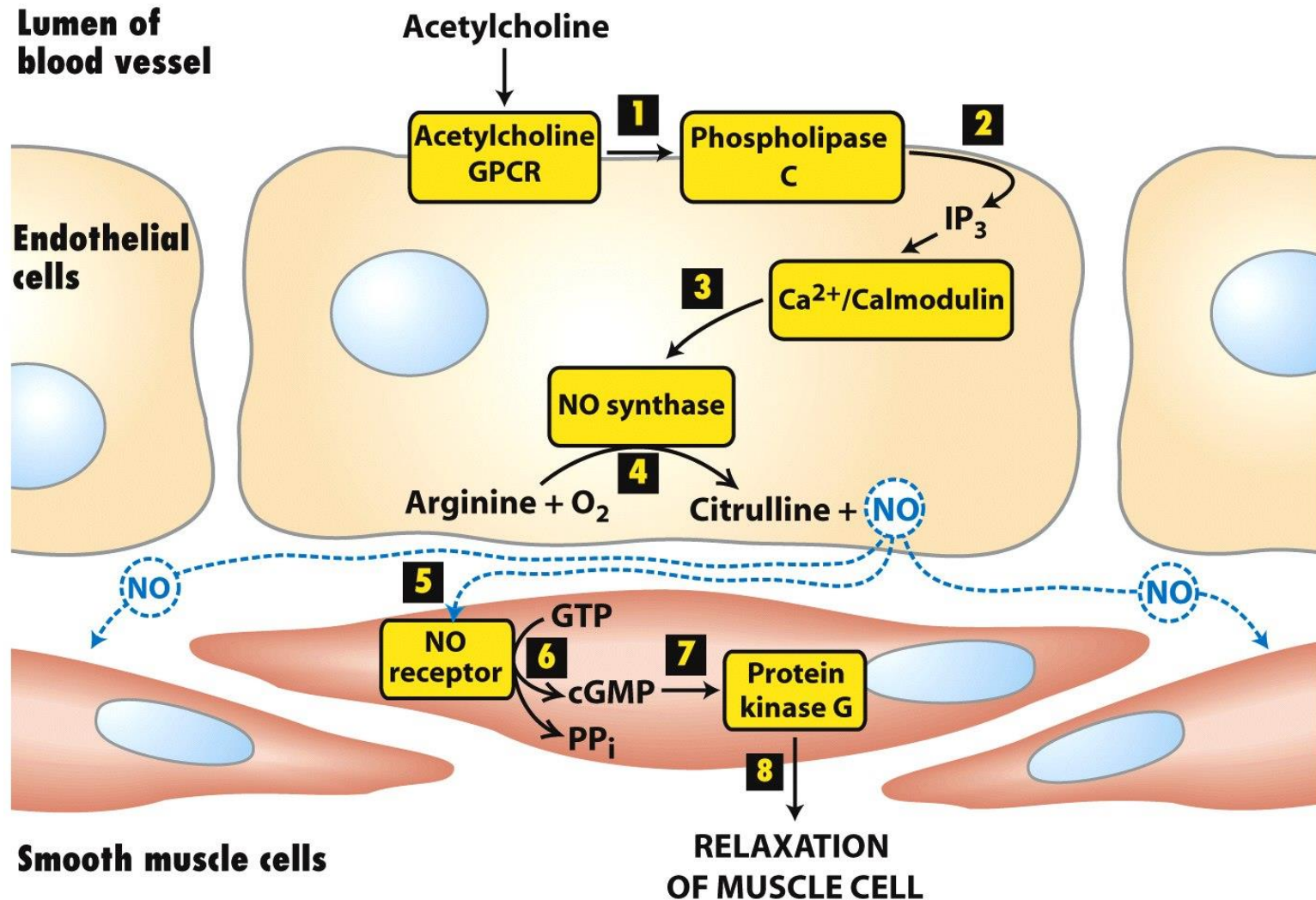
Produzione di ossido nitrico



Ossido di azoto e cGMP



La via NO/cGMP e il rilassamento della muscolatura liscia delle arterie



Farmaci vasodilatatori

I livelli di cGMP che inducono vasodilatazione possono essere aumentati con:

- farmaci NO-donatori che rilasciano NO (esempio: nitroglicerina)
- farmaci che bloccano le fosfodiesterasi (PDE). Bloccando le PDE i livelli di cGMP aumentano

Ormoni liposolubili

Steroidei

Tiroidei

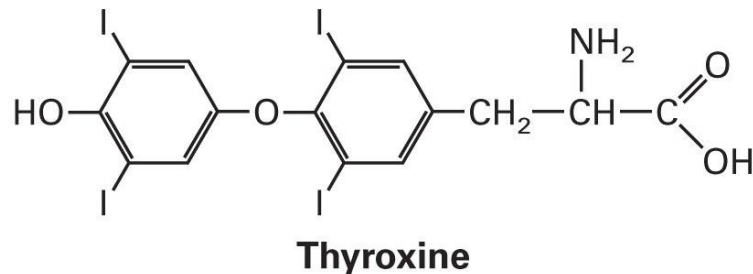
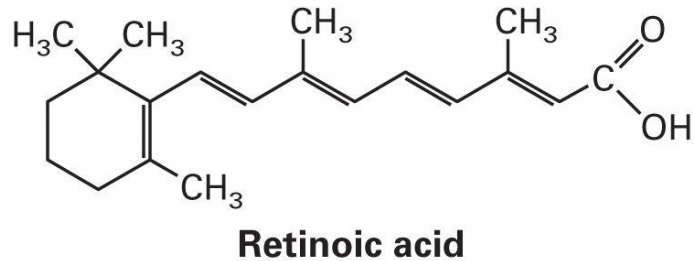
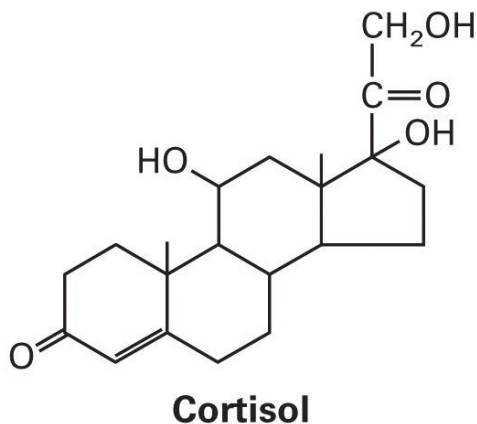
Vitamina D

Acido retinoico

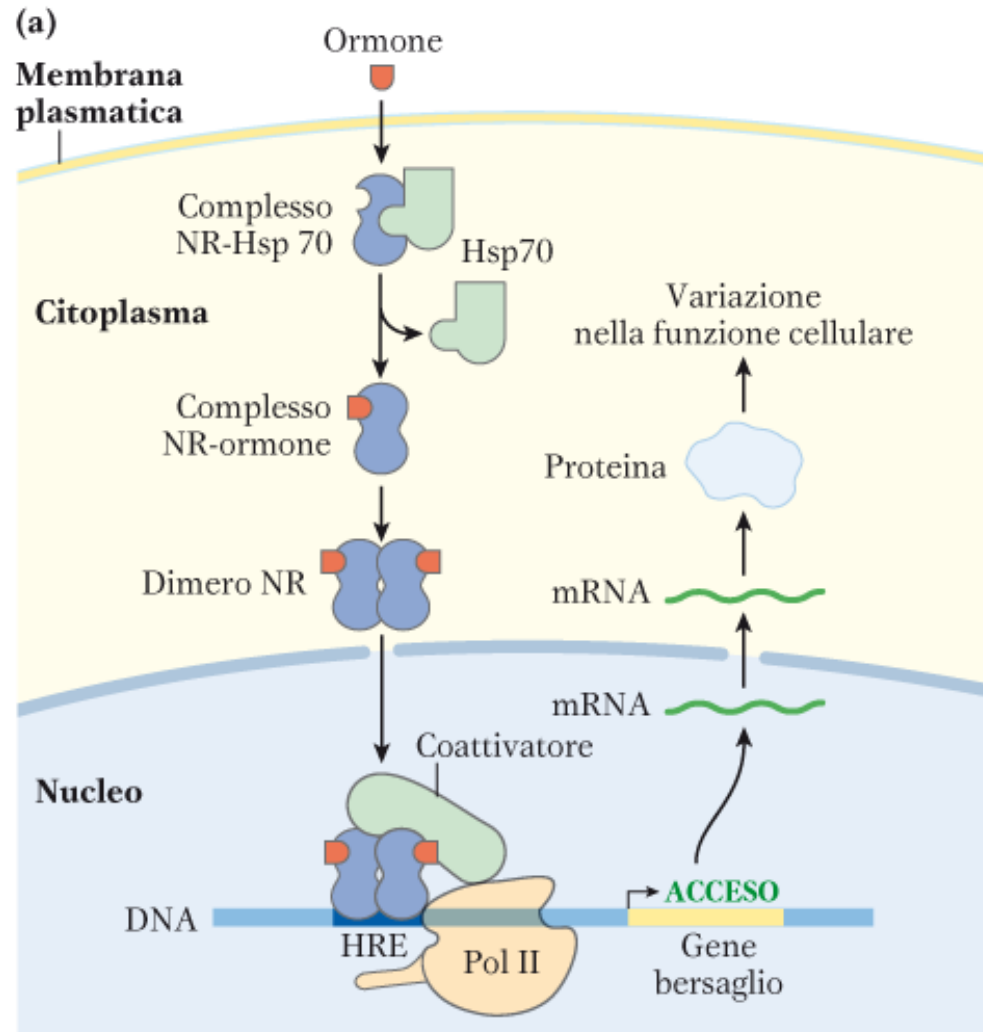
Recettori nucleari

NUCLEAR RECEPTORS

- **Transcription factors** which get activated by lipid-soluble hormones
- Lipid-soluble hormones - small hydrophobic molecules capable to diffuse freely through plasma and nuclear membranes



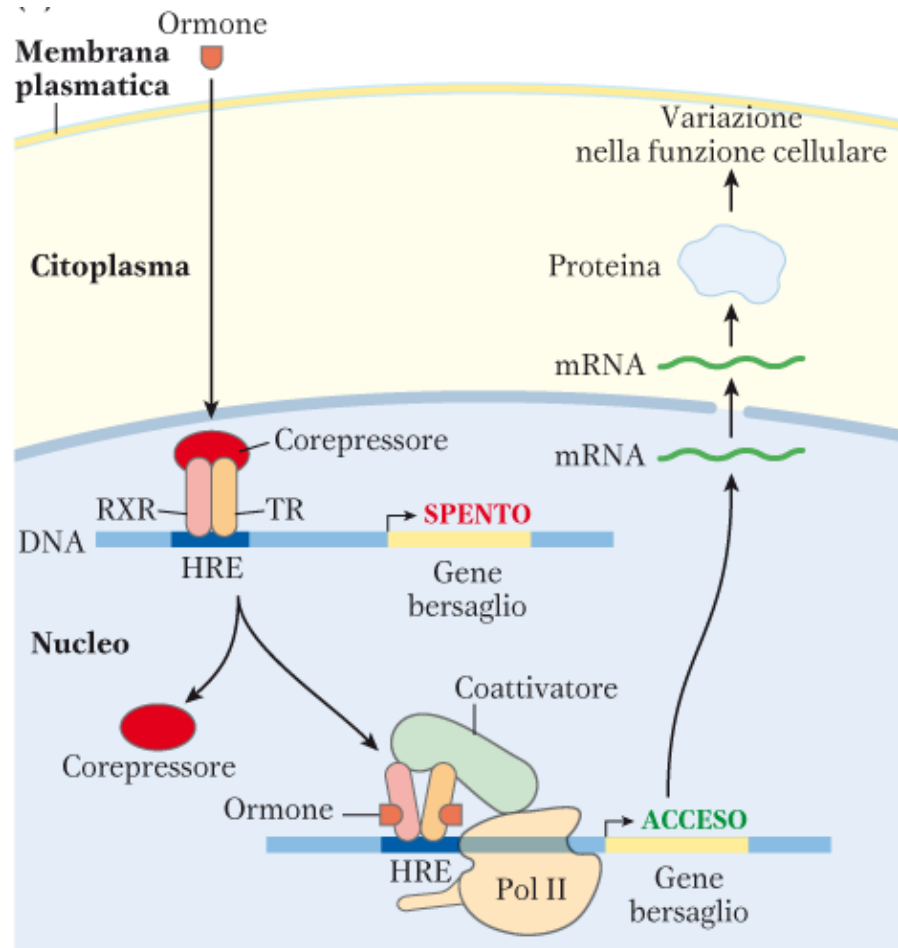
RECETTORI OMODIMERICI DEGLI ORMONI STEROIDEI



Nelson & Cox I principi di Biochimica di Lehninger- Zanichelli 6 ed.

recettori per gli estrogeni, androgeni, progesterone e glucocorticoidi

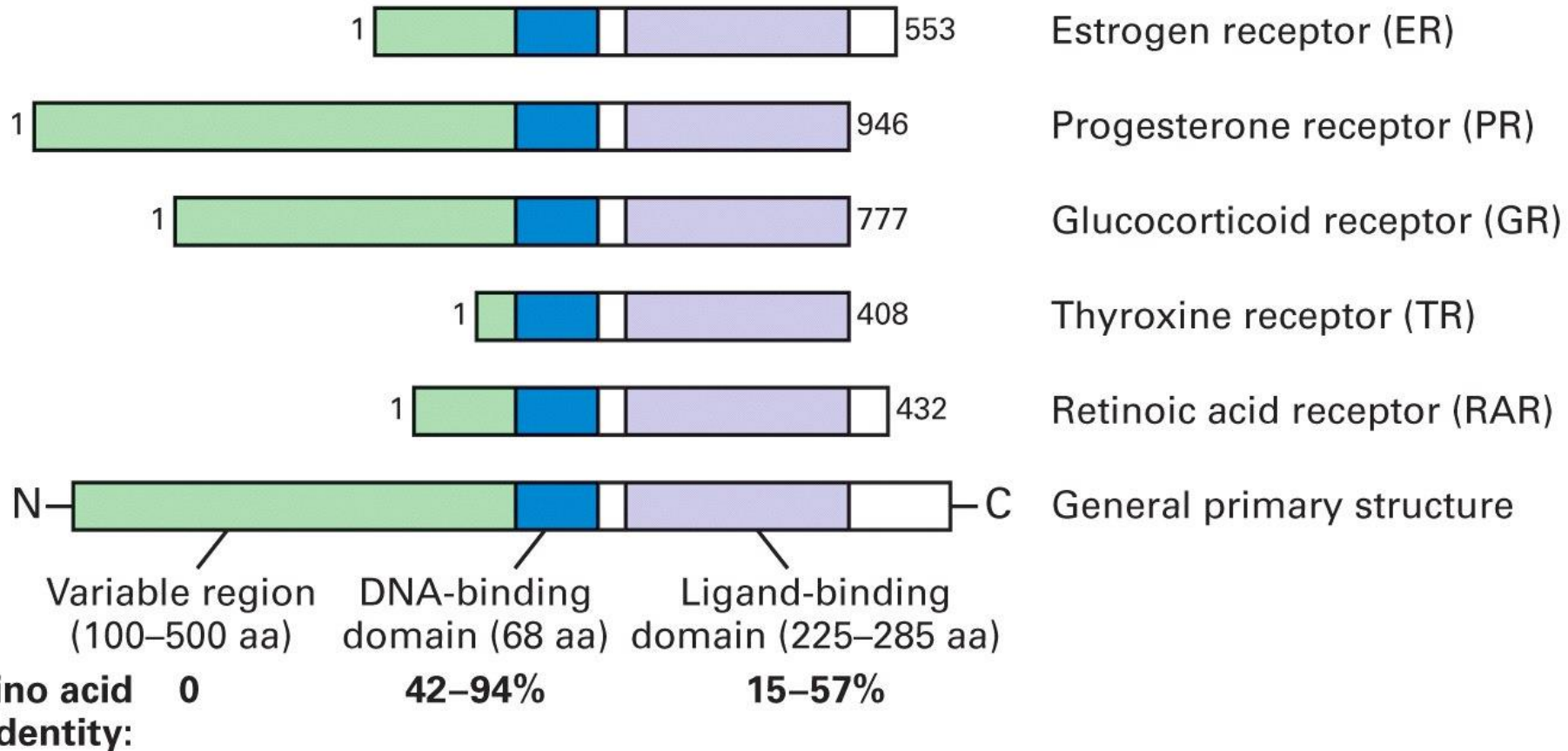
RECETTORI ETERODIMERICI DEGLI ORMONI LIPOFILICI



Nelson & Cox I principi di Biochimica di Lehninger- Zanichelli 6 ed.

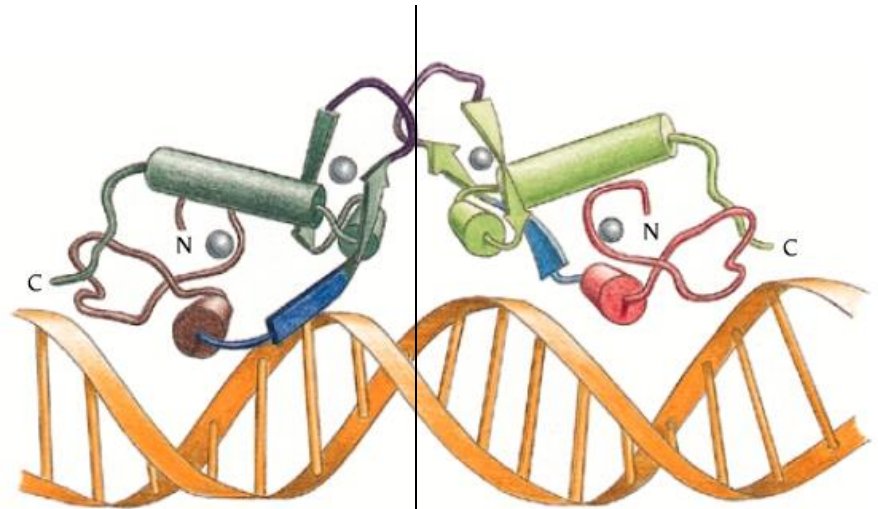
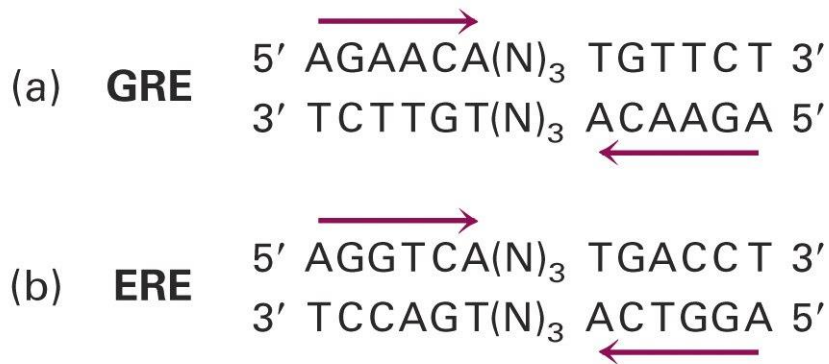
Recettore degli ormoni tiroidei, dell'acido retinoico e della vitamina D

Domains of nuclear receptors



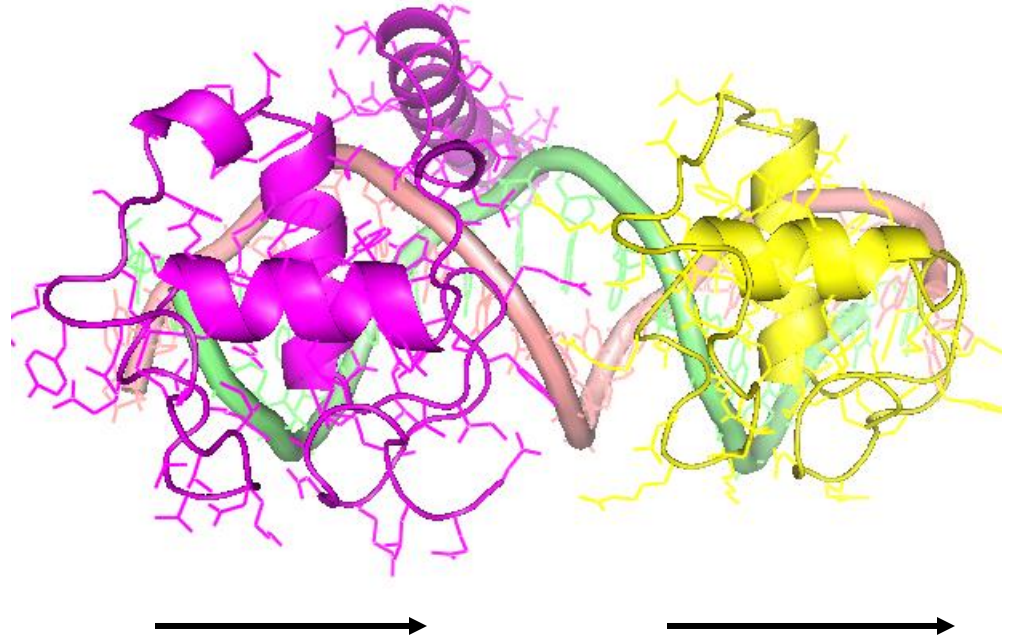
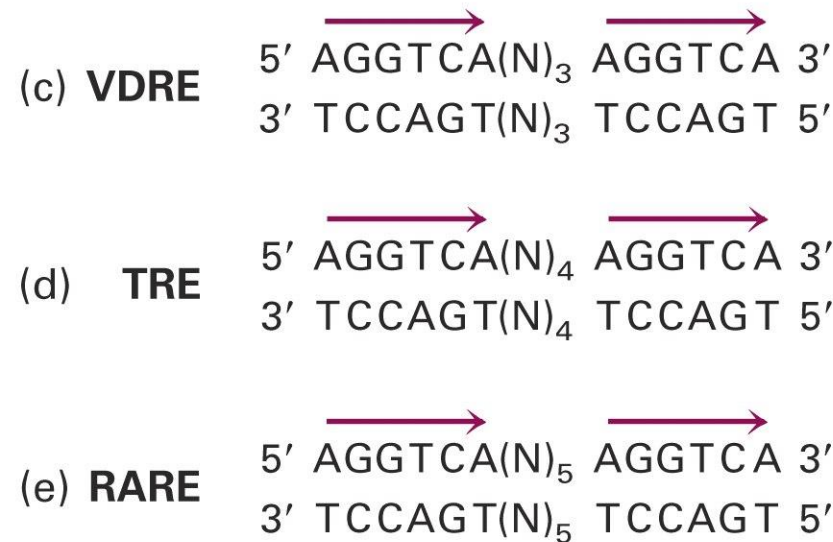
DNA binding domain – two C_4 zinc finger repeats

Homodimeric nuclear receptors are made of two identical subunits and bind to inverted DNA repeats



2-fold symmetry

Direct repeat binding sites of heterodimeric nuclear receptors



Heterodimeric nuclear receptors are made of two different subunits, one of them always being an universal monomer, called RXR

Binding specificity of heterodimeric nuclear receptors is achieved solely by variable length of spacer nucleotide sequence