

Info		
Hormones effects depends on	- <u>amount in plasma</u> - <u>post-receptor factors</u> -activation of it	- <u>hormone hl</u> -its receptor (#, affinity...)
Note	<p>-most hormones activate surface receptor that activates 2ndM that exerts the hormone's effect</p> <p>-all hormonal receptors are transmembranous (part IC, part within mem, part EC), hydrophilics bind to EC and phosphorylates IC to do effect</p> <p>-hormonal def patients we give them supplements, and in overexpressed patients we interfere with the hormone</p>	
Hormones class		
	lipophilic	Hydrophilic
Abilities	transport a Pr	Activate 2ndM
Structure	-steroids -thyroids -calcitriol -retinoids	-Pr -glycopr -CAT
HI	Long (very high affinity to plasma Pr)	Short (cuz its only fun is to activate the 2ndM)
Receptor site	IC	Surface
Effect by	Receptor-hormone complex	-2ndM cAMP, -2ndM cGMP -Ca/phosphatidylinositol -tyrosine-kinase chain

Lipophilic hormones	
MOA	Binds to IC receptor to form RHC that will move to N and stimulate gene effect
Steroids are	-glucocorticoids -mineralcorticoids -sex hormones (M: androgen, F: estrogen & progestin)

Hydrophilic hormones (subdivided depending on 2ndM)	
cAMP	
Name	Cyclic adenosine monophosphate
Hormones	-CAT (adrenergics: alpha2 & beta) -all A. lobe of PG -ADH (V2 receptor) -calcitonin & PTH -glucagon
MOA (steps)	-hormone binds to receptor then leaves it! -receptor dephosphorylation (by phosphatase) -conversion of cAMP to AMP (by phosphodiesterase) -Pr kinase A inactivation (by cAMP dec) -hydrolysis of GTP to GDP -binding of <i>alpha</i> subunit to <i>beta&gamma</i> -inactivation of adenylyl cyclase -effect
cGMP	
Name	Cyclic guanosine monophosphate
Hormones	-ANP -NO
MOA	Conversion of GTP to cGMP (by guanylate cyclase)
Ca/phosphatidylinositol (or both)	
Hormones	-ACH -CAT (adrenergic: alpha1) -angiotensin2 -ADH (V1 receptor)
Requirements	-we need DAG or IP3 (or both) -DAG acts directly -IP3 acts indirectly (by releasing SER Ca)
MOA	-activation of alpha group -activates phospholipase C enz -release of DAG or IP3 -activation of Pr kinase C -effect

Tyrosine kinase chain	
Hormones	<ul style="list-style-type: none"> -<u>insulin</u> -GH -prolactin -erythropoietin
Insulin MOA	<ul style="list-style-type: none"> -the receptor is of 2 parts: Alpha part: EC, binds to insulin Beta part: IC, phosphorylates tyrosine (by autophosphorylation)
Insulin effect	<ul style="list-style-type: none"> Inc Glycogenesis Tissues glucose uptake Pr synthesis Fat synthesis Dec Glucogenesis Glycogenlysis fat Lipolysis