Hormones

Hormone	Secreted by	In response to	Effect	Type
Oxytocin		Childbirth		Peptide
Vasopressin (ADH)	Posterior Pituitary			Peptide
FSH			♀: initiate follicle growth ♂: ↑ spermatocyte development ♀, ♂: maturation of germ cells	
	Anterior Pituitary		♀: ovulation, follicle becomes corpus luteum ♂: Leydig cells → ↑testosterone	Glycoprotein
ACTH		CRH, Stress		
		TRH, low plasma levels of T_4 and T_3		Glycoprotein
Prolactin	Anterior Pituitary	Falling progesterone at end of pregnancy		
Endorphin			Pain relief	
Growth Hormone		GHRH		Peptide
Calcitonin				Peptide
T_4 & T_3	Thyroid	TSH		Amino Acid Tyr, but act like steroid
Parathyroid Horm.	Parathyroid			
	Pancreas α cells	Low blood [Glucose]		Peptide
Insulin			↓ blood [Glucose]	
	Pancreas δ cells	Various, usually high hormone levels	Suppress: GH, TSH, CCK, insulin, glucagon	Peptide
Cortisol	Adrenal Cortex			Steroid
Aldosterone	Adrendal Cortex	ACTH, ATII, low bp		
Epinephrine		Sudden stress	Sympathetic response: ↑ heart rate, breathing, etc.	Peptide / Tyr derivative
Estrogen	♀: Ovaries, ♂: Adrenal		♀: secondary sex characteristics, endometrial development during menstrual cycle, surge leads to LH surge	
Progesterone	♀: Ovary: Corpus Luteum, ♂: Adrenal	Ovulation		Steroid
	♂: Leydig cells of testes, ♀: Ovaries		Development, maintenance of secondary sex characteristics	Steroid
	Adrenal Medulla	Sudden stress	Sympathic responses of fight or flight	
hCG		Implantation		Glycoprotein
GnRH		Puberty, Menses		Peptide

Hormones

Hormone	Secreted by	In response to	Effect	Type
	Posterior Pituitary		Uterine contraction, Emotional Bonding	
			Retain water, ↑ aquaporin channels in collecting duct, DCT	
FSH		GnRH		
LH		GnRH ♀: estrogen spike from follicle just before ovulation		
	Anterior Pituitary	CRH, Stress	↑ adrenal release of corticosteroids	Peptide
TSH	Anterior Pituitary	TRH, low plasma levels of T_4 and T_3		
		Falling progesterone at end of pregnancy	Mammary gland enlargement, milk production	Peptide
	Anterior Pituitary	Pain		Peptide
		GHRH	Growth of long bones, general anabolism	
	Thyroid		Reduce plasma [Ca^{2+}]	
		TSH	↑ metabolic rate	
	Parathyroid		↑ plasma [Ca^{2+}]	Peptide
Glucagon			↑ blood [Glucose]	
	Pancreas β cells	High blood [Glucose]		Peptide
Somatostatin		Various, usually high hormone levels		
	Adrenal Cortex	Stress	↑ [Glucose], Immune suppression	
	Adrendal Cortex		Collecting Duct, DCT: reabsorb Na^+, Secrete K^+, water retention, ↑ bp	Steroid
Epinephrine	Adrenal Medulla	Sudden stress		
Estrogen	♀: Ovaries, ♂: Adrenal	FSH		Steroid
		Ovulation	Thicken, maintain endometrium in preparation for implantation	
Testosterone		GnRH→LH→Testos.		
Norepinephrine	Adrenal Medulla			Peptide / Tyr derivative
	Placenta	Implantation	Maintains corpus luteum at start of pregnancy	
		Puberty, Menses	↑ LH, FSH release	

Hormones

Hormone	Secreted by	In response to	Effect	Type
Oxytocin		Childbirth		
Vasopressin (ADH)		High plasma osmolality		
FSH				
LH			♀: ovulation, follicle becomes corpus luteum ♂: Leydig cells → ↑testosterone	
ACTH		CRH, Stress		
TSH			↑ thyroid release of T_4 and T_3	
Prolactin		Falling progesterone at end of pregnancy		
Endorphin			Pain relief	
Growth Hormone		GHRH		
Calcitonin			Reduce plasma [Ca^{2+}]	
T_4 & T_3		TSH		
Parathyroid Horm.			↑ plasma [Ca^{2+}]	
Glucagon		Low blood [Glucose]		
Insulin			↓ blood [Glucose]	
Somatostatin		Various, usually high hormone levels		
Cortisol			↑ [Glucose], Immune suppression	
Aldosterone		ACTH, ATII, low bp		
Epinephrine		Sudden stress		
Estrogen		FSH		
Progesterone			Thicken, maintain endometrium in preparation for implantation	
Testosterone			Development, maintenance of secondary sex characteristics	
Norepinephrine		Sudden stress		
hCG			Maintains corpus luteum at start of pregnancy	
GnRH		Puberty, Menses		

Alanine	A – Ala		CH_3		Methionine	M – Met	Non-p	$(CH_2)_2SCH_3$
Cysteine	C – Cys	Polar	CH_2SH		Asparagine	N – Asn	Polar	$CH_2C(O)NH_2$
Aspartic Acid	D – Asp	Acid			Proline	P – Pro	Non-p	$(CH_2)_3$-own am.
	E – Glu	Acid	CH_2CH_2COOH		Glutamine	Q – Gln	Polar	
Phenylalanine	F – Phe		CH_2-C_6H_5		Arginine	R – Arg	Base	$(CH_2)_3NHC(NH_2)NH_2$
Glycine	G – Gly	Non-p	H		Serine	S – Ser	Polar	CH_2OH
	H – His	Base	CH_2 – Imidazole		Threonine	T – Thr		$CHOHCH_3$
Isoleucine	I – Ile	Non-p	$CH(CH_3)CH_2CH_3$		Valine		Non-p	$CH(CH_3)_2$
Lysine	K – Lys		$(CH_2)_4NH_2$		Tryptophan	W – Trp	Slight-p	CH_2 – Indole
Leucine	L – Leu	Non-p	$CH_2CH(CH_3)_2$		Tyrosine		Polar	CH_2-C_6H_4-OH

Alanine		Non-p	CH_3		Methionine	M – Met	Non-p	
Cysteine	C – Cys	Polar			Asparagine	N – Asn		$CH_2C(O)NH_2$
	D – Asp	Acid	CH_2COOH				Non-p	$(CH_2)_3$-own am.
Glutamic Acid		Acid	CH_2CH_2COOH		Glutamine	Q – Gln	Polar	
Phenylalanine	F – Phe	Non-p					Base	$(CH_2)_3NHC(NH_2)NH_2$
		Non-p	H		Serine	S – Ser	Polar	
Histidine	H – His	Base			Threonine	T – Thr	Polar	
Isoleucine		Non-p	$CH(CH_3)CH_2CH_3$				Non-p	$CH(CH_3)_2$
Lysine	K – Lys	Base			Tryptophan	W – Trp	Slight-p	
		Non-p	$CH_2CH(CH_3)_2$				Polar	CH_2-C_6H_4-OH

Alanine	A – Ala	Non-p					Non-p	$(CH_2)_2SCH_3$
		Polar	CH_2SH		Asparagine	N – Asn	Polar	
Aspartic Acid	D – Asp	Acid			Proline	P – Pro	Non-p	
Glutamic Acid	E – Glu	Acid					Polar	$(CH_2)_2C(O)NH_2$
		Non-p	CH_2-C_6H_5		Arginine	R – Arg	Base	
Glycine	G – Gly	Non-p					Polar	CH_2OH
		Base	CH_2 – Imidazole				Polar	$CHOHCH_3$
Isoleucine	I – Ile	Non-p			Valine	V – Val	Non-p	
		Base	$(CH_2)_4NH_2$				Slight-p	CH_2 – Indole
Leucine		Non-p			Tyrosine	Y – Tyr	Polar	