

Table 1. Role of placental mediators in labor. Interactions, site of action, and endocrine, paracrine, and autocrine actions

Molecule	Inducers (+) Inhibitors (-)	Location of receptors	Actions	Mode of action
Estrogen	DHEA-S (+) (humans)	Placenta	↑ CRH	E, P
	Fetal cortisol (+) (other mammals)	Decidua Fetal membranes	↑ PG	
Oxytocin	Activin (+)	Decidua	Uterine contractions	E, P
	Estrogen (+)	Myometrium		
CRH Urocortins	Oxytocin (+)	Maternal pituitary	↑ ACTH & endorphins	E, P
	NPY (+)		↑ ACTH & endorphins	
	IL-1 (+)	Fetal pituitary	↑ ACTH & endorphins	
	Prostaglandin (+)	Myometrium	Uterine contractions	
	Norepinephrine (+)	Decidua	↑ PG	
	Angiotensin II (+)	Fetal membranes	↑ PG	
	Cortisol (+)	Placenta	↑ ACTH & blood vessel dilatation	
	ACH (+) PRG (-) NO (-)	Immune cells	↑ Cytokines	
NPY	?	Placenta	?↑ CRH	P, A
		Myometrium	Uterine contractions	
NKB	?	Placenta	?↑ CRH	P, A
		Myometrium	Uterine contractions	
Activin A	Inhibin (-)	Placenta	↑ PRG	P, A
	Follistatin (-)	Decidua Fetal membranes		
IL-1	Bacterial & viral infections	Placenta	↑ CRH	P
		Decidua	↑ HCG	
		Fetal membranes	↑ PG	
TNF-α	Bacterial & viral infections	Placenta	↑ PG	P
		Decidua		
		Fetal membranes		
Prostaglandins	Oxytocin (+)	Placenta	↑ CRH	P
	CRH (+)		↑ CRH	
	GnRH (+)	Myometrium	Uterine contractions	
	Activin (+)	Cervical stroma	Cervical ripening	
	IL-1, IL-6 (+) TGF, EGF (+)			

E: endocrine; P: paracrine; A: autocrine; CRH: corticotrophin releasing hormone.