Hormone	Source	Receptor distribution (main areas italicised)	Factors increasing secretion	Factors decreasing secretion	Actions
Ghrelin*	Stomach Fundus (X/A like cells)	**GHSR1a** *Pituitary* *Hypothalamus* substantia nigra NTS Hippocampus Pancreas Thyroid Spleen Myocardium Adrenal cortex **GHSR1b** (Ubiquitous) Stomach, Oesophagus, Intestine, Liver, Lung, Muscle, Testis	Protein, Smoking	Glucose, Fat, Insulin, PYY	-Increases appetite -Growth Hormone release -Increases gastric emptying -Increases LH pulses
GLP-1	Distal Ileal L cells	Pancreatic islet Stomach parietal cells 4th ventricle floor Hypothalamus Pituitary Lung	Glucose Galactose FFA Peptones CGRP Epinephrine Atropine Metformin Lauric acid	Insulin Somatostatin ?NEFA	-Insulinotropic -Decreases Glucagon -Delays Gastric Emptying -Decreases Appetite -Stimulates Beta cell growth
GLP-2	Distal ileal, Colonic L cells	*Enteric neurones of the stomach* *Small bowel* Colon Brain	Gut-Inflammation Fat		-Bowel Mucosal proliferation -Increases islet blood flow -Delays Gastric Emptying
GIP	Duodenal K cells	*Pancreas* *Gut* Adipose tissue Heart Pituitary Adrenal cortex Hippocampus Olfactory Bulb	Fat Carbohydrates		-Insulinotropic -Increases glucagon -No effect on gastric emptying -Stimulates beta cell growth
Oxyntomodulin	L cells	acts through GLP-1 receptors and probably *specific OXM receptors?*			-Decreases Appetite -No effect on gastric emptying -Inhibits acid secretion -Inhibits fasting plasma Ghrelin
Peptide YY	Colo-Rectal L cells	(Y1-Y5 receptors) *Hypothalamus* *Caudate nucleus Locus coeruleus Substantia nigra* *Ileum* *Colon (Y2, Y4)* Adrenal gland Paraganglia	Fibres Short-chain fatty acids Bile salts Glucose Aminoacids CGRP CCK Bombesin	GLP-1	-Decreases Appetite -Inhibits Gastric acid secretion -Decreases Gastric emptying -Reduces GB contractility -Stimulates intestinal water absorption
Pancreatic Polypeptide	Pancreatic F cells/Colon	(Y4 &Y5 receptors) *Ileum, Colon* *Hypothalamus*	Vagus Secretin Ghrelin Motilin Ileal resection	Somatostatin	-Decreases pancreatic exocrine secretion -Delays Gastric Emptying -Decreases appetite -Increases Gastric Acid secretion

Cholecystokinin	Intestinal cells	CCK-a Pancreas GI neurones Lung CCK-b Brain Stomach Pancreas	Fat Proteins Coeliac disease Bulimia		-Decreases appetite -Stimulates Gall bladder contraction -Relaxes sphincter of Oddi -Stimulates exocrine pancreatic secretion -Delays Gastric emptying -Inhibits Gastric acid secretion -Stimulates Pancreatic growth -Increases Intestinal blood flow
Amylin	Pancreatic Beta cells (P cells)	AMY (1-3) Hypothalamus Pancreas	Oral Nutrients		-Reduces Glucagon secretion -Delays Gastric emptying -Increases Renin and aldosterone -Decreases appetite
Enterostatin	Exocrine Pancreas				-Decreases Appetite

*Ghrelin is the only GI hormone that increases food intake