



EICOSANOID GPCRS

G_s Protein-Coupled Receptors

DP₁

- Relaxation of smooth muscle
- Inhibition of platelet aggregation
- Suppression of leukocyte function
- Nasal congestion

EP₂

- Smooth muscle relaxation, dilation
- Bone formation
- Suppression of leukocyte function
- Mediation of spinal inflammatory hyperalgesia
- Inhibition of sleep
- Promotion of ovarian follicle growth
- Stimulation of renin release
- Neuroprotection

EP₄

- Renal vasodilation
- Bone production
- Suppression of leukocyte function
- Promotion of sleep
- Promotion of ovarian follicle growth
- Stimulation of renin release, salt and water excretion
- Regulation of gastric acid secretion, duodenal HCO₃⁻ secretion

IP

- Relaxation of pulmonary arterial, bronchial smooth muscle
- Inhibition of platelet aggregation
- Suppression of cardiomyocyte hypertrophy

Secondary coupling to G_s

G_i Protein-Coupled Receptors

DP₂ (CRTH2)

- Eosinophil activation, chemotaxis, and degranulation
- Stimulation of inflammatory cytokine production
- Lymphocyte and basophil infiltration

EP₃

- Smooth muscle contraction, constriction of vessels, venules, and airways
- Duodenal HCO₃⁻ secretion, inhibition of gastric acid secretion
- Mechanical/thermal hyperalgesia
- Inhibition of lipolysis

Secondary coupling to G_s

BLT₁

- Leukocyte aggregation, chemotaxis, and chemokinesis
- Roles in atherosclerosis, asthma, and inflammation

Secondary coupling to G_s

BLT₂

- Actions redundant to BLT₁
- May play a role in itch-induced scratching
- Activated by HETEs

Secondary coupling to G_s

OXER1

- Chemotaxis, adherence

ALX/FPR2

- Chemotaxis, adherence

12-HETER1 (GPR31)

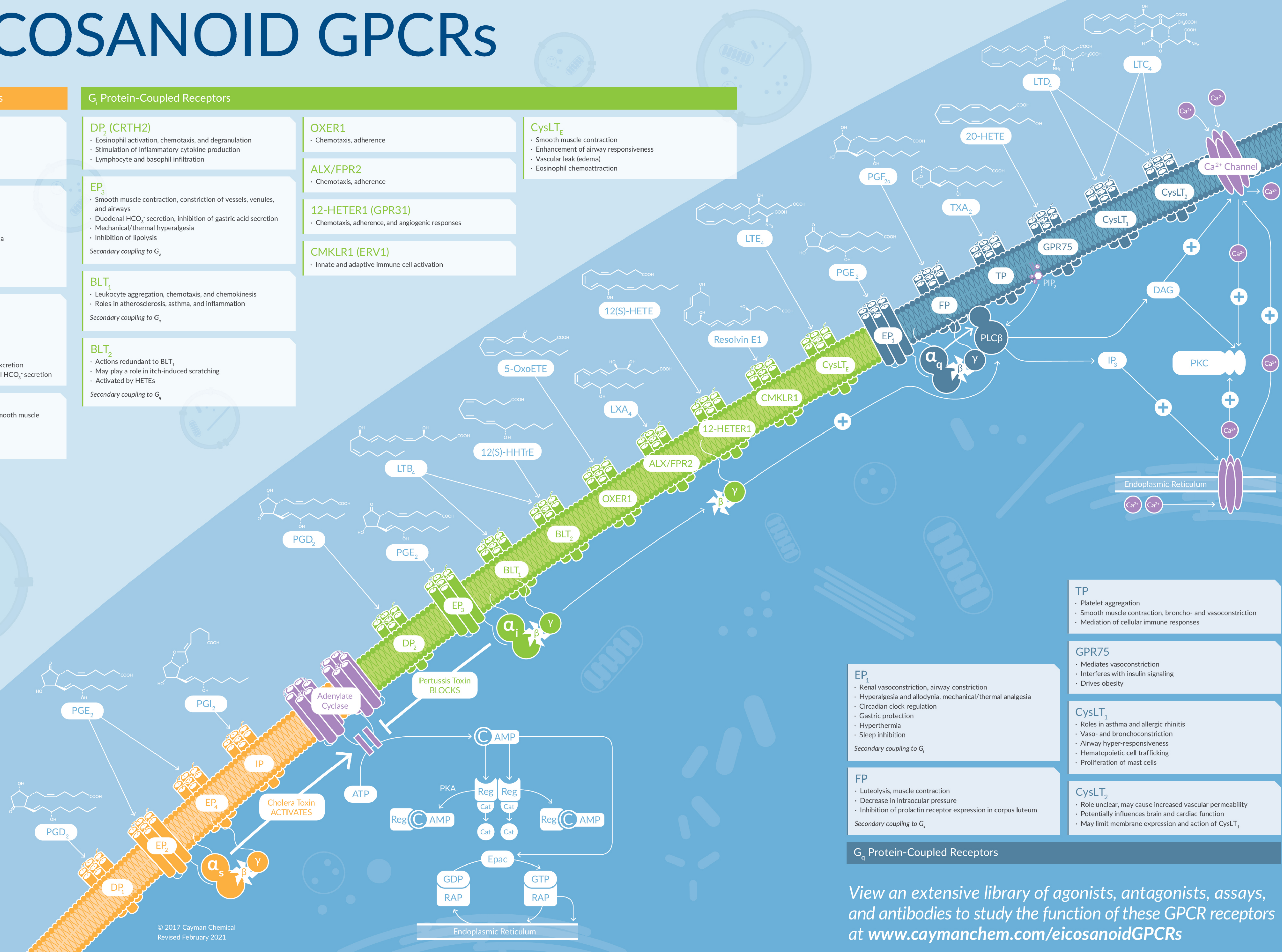
- Chemotaxis, adherence, and angiogenic responses

CMKLR1 (ERV1)

- Innate and adaptive immune cell activation

CysLT_E

- Smooth muscle contraction
- Enhancement of airway responsiveness
- Vascular leak (edema)
- Eosinophil chemoattraction



TP

- Platelet aggregation
- Smooth muscle contraction, broncho- and vasoconstriction
- Mediation of cellular immune responses

GPR75

- Mediates vasoconstriction
- Interferes with insulin signaling
- Drives obesity

CysLT₁

- Roles in asthma and allergic rhinitis
- Vaso- and bronchoconstriction
- Airway hyper-responsiveness
- Hematopoietic cell trafficking
- Proliferation of mast cells

CysLT₂

- Role unclear, may cause increased vascular permeability
- Potentially influences brain and cardiac function
- May limit membrane expression and action of CysLT₁

EP₁

- Renal vasoconstriction, airway constriction
- Hyperalgesia and allodynia, mechanical/thermal analgesia
- Circadian clock regulation
- Gastric protection
- Hyperthermia
- Sleep inhibition

Secondary coupling to G_s

FP

- Luteolysis, muscle contraction
- Decrease in intraocular pressure
- Inhibition of prolactin receptor expression in corpus luteum

Secondary coupling to G_s

G_i Protein-Coupled Receptors

View an extensive library of agonists, antagonists, assays, and antibodies to study the function of these GPCR receptors at www.caymanchem.com/eicosanoidGPCRs