

EICOSANOID GPCRs

G_c Protein-Coupled Receptors

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

- 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

- 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

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

Secondary coupling to G.

G_i Protein-Coupled Receptors

DP₂ (CRTH2)

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

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

Secondary coupling to G

Leukocyte aggregation, chemotaxis, and chemokinesis

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Roles in atherosclerosis, asthma, and inflammation

Secondary coupling to G

- Actions redundant to BLT,
- May play a role in itch-induced scratching Activated by HETEs
- Secondary coupling to G

· Chemotaxis, adherence

ALX/FPR2

OXER1

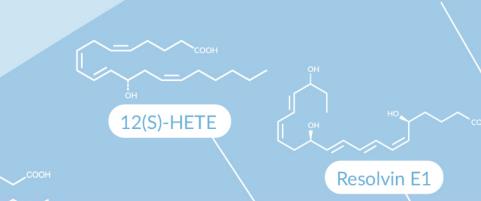
· Chemotaxis, adherence

12-HETER1 (GPR31)

· Chemotaxis, adherence, and angiogenic responses

CMKLR1 (ERV1)

· Innate and adaptive immune cell activation



CysLT_F

Smooth muscle contraction

Eosinophil chemoattraction

Vascular leak (edema)

Enhancement of airway responsiveness

12(S)-HHTrE

BLOCKS

ATP **ACTIVATES**

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

GPR75

Drives obesity

Mediates vasoconstriction Interferes with insulin signaling

Roles in asthma and allergic rhinitis

· Vaso- and bronchoconstriction

Airway hyper-responsiveness

Hematopoietic cell trafficking Proliferation of mast cells

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

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

Secondary coupling to G

CysLT,

- CysLT₂ Role unclear, may cause increased vascular permeability
- Potentially influences brain and cardiac function
- May limit membrane expression and action of CysLT,

G_a 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