11-cis-Retinyl-palmitate hydrolase

1 NOMENCLATURE

EC number
3.1.1.63

Systematic name
11-cis-Retinyl-palmitate acylhydrolase

Recommended name
11-cis-Retinyl-palmitate hydrolase

Synonyms
Esterase, 11-cis-retinol palmitate
Retinyl palmitate hydrolase [2]
RPH [2]

CAS Reg. No.
106389-23-5

2 REACTION AND SPECIFICITY

Catalyzed reaction
11-cis-Retinyl palmitate + H₂O →
→ 11-cis-retinol + palmitate

Reaction type
Hydrolysis of carboxylic ester

Natural substrates

Substrate spectrum
1 11-cis-Retinyl-palmitate + H₂O [1, 3]
2 Retinyl palmitate + H₂O [2]

Product spectrum
1 11-cis-Retinol + palmitate [1, 3]
2 Retinol + palmitate [2]
Inhibitor(s)
- all-trans-Retinyl palmitate (weak) [1]; Diisopropylfluorophosphate [2]; Phenylmethanesulfonyl fluoride [2]; all-trans-Retinyl bromoacetate [3]

Cofactor(s)/prosthetic group(s)/activating agents
- Trihydroxy bile salts (e.g. sodium cholate, taurocholate, glycocholate, required for stimulation of partially purified enzyme) [2]; Sodium taurocholate (maximal activation at 1.0%) [1]; More (no requirement for detergents) [1]

Metal compounds/salts

Turnover number (min⁻¹)

Specific activity (U/mg)
- 0.066 (11-cis-retinyl palmitate) [3]

Kₘ-value (mM)
- 0.0112 (retinyl palmitate) [2]; 0.019 (11-cis-retinyl palmitate) [1]

pH-optimum
- 8.0–8.4 [2]; 8–9 [3]

pH-range

Temperature optimum (°C)
- 37 (assay at) [3]

Temperature range (°C)

3 ENZYME STRUCTURE

Molecular weight

Subunits

Glycoprotein/Lipoprotein

4 ISOLATION/PREPARATION

Source organism
- Human [1]; Rat [2]; Bovine [3]

Source tissue
- Retinal pigment epithelial cells [1, 3]; Liver [2]

Localization in source
- Microsomes [3]