

Product Information

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Anti-Cholecystokinin (26-33) (CCK-8)

produced in rabbit, whole antiserum

Catalog Number **C2581**

Product Description

Anti-Cholecystokinin (26-33) (CCK-8) is produced in rabbit using as immunogen synthetic sulfated cholecystokinin (26-33) amide (sulfated CCK-8), conjugated to KLH.

Anti-Cholecystokinin (26-33) (CCK-8) specifically stains cholecystokinin (CCK)- and gastrin-containing cells in formalin-fixed, paraffin-embedded sections of human stomach (neuroendocrine cells). Specific staining is inhibited with sulfated CCK-8 and with human gastrin I. In radioimmunoassay, the antibody recognizes sulfated CCK-8. Cross-reactivity is observed with unsulfated CCK-8 and caerulein. Low cross-reactivity is observed with human gastrin I, CCK (30-33) and human Big Gastrin. No cross-reactivity is observed with pig vasoactive intestinal peptide (VIP).

Anti-CCK-8 may be used to detect CCK by immunohistochemistry in sections of formalin-fixed, paraffin-embedded gastrointestinal tissue, and in paraformaldehyde perfusion-fixed rat brain by RIA and dot blot immunoassay.

Cholecystokinin (CCK) is a neuropeptide hormone and neurotransmitter widely distributed throughout the gastrointestinal (GI) tract and the central nervous system (CNS).^{1,10} CCK, gastrin, secretin and vasoactive intestinal peptide (VIP) belong to the gastrointestinal hormone family.² CCK is closely related to gastrin; both peptides share the same biologically active C-terminal pentapeptide. CCK exists as a larger precursor hormone, preproCCK (114 amino acids), from which several smaller fragments are derived, sharing a C-terminal tetrapeptide and a sulfated tyrosine residue. CCK-33, a 33-residue peptide amide fragment, has been isolated from intestinal extracts.³ Sulfated CCK (26-33) amide (CCK-8) is the major and the most potent CCK form in the brain and periphery.^{1,2,4} CCK stimulates enzyme secretion from the pancreas, gall bladder contraction, and intestinal motility and it inhibits gastrin-induced acid secretion.^{2,4,5} The physiological roles of CCK in the CNS are not completely understood. CCK may be involved in several physiological and behavioral

functions such as satiety, anxiety, memory processes, and analgesia and in disorders such as panic disorder.⁶⁻⁸ CCK is anxiogenic, its effect being antagonized by anxiolytic drugs. In the CNS, CCK acts as a neurotransmitter and modulates the action of other neurotransmitters such as dopamine, 5-HT, GABA and excitatory amino acids. CCK is stored with dopamine in the limbic, but not the nigrostriatal, dopaminergic pathway.⁹ CCK is widely distributed in several brain regions, including the cerebral cortex, hippocampus, amygdala nuclei, and the hypothalamus.^{1,10} In the periphery, CCK is localized mainly in nerve fibers in the myenteric and submucosal ganglia, as well as in endocrine cells of the gastrointestinal tract.^{5,10} The multiple biological actions of CCK are mediated by two classes of receptors, the peripheral/brain CCK-A receptors and the brain CCK-B receptors.^{11,12} Antibodies that react specifically with CCK are useful for the study of the mode of action, differential tissue expression and intracellular and subcellular localization of CCK in the CNS and periphery as well as in neuroendocrine cells of the digestive system.

Reagents

Supplied as a liquid containing 15 mM sodium azide as preservative.

Precautions/Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C. For extended storage freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

A minimum working dilution of 1:8,000 was determined by indirect immuno-peroxidase staining of formalin-fixed, paraffin-embedded sections of human stomach (antrum/ duodenum).



Note: In order to obtain best results, it is recommended that each user determine the optimal working dilution for individual applications by titration assay.

RIA Dilution Instructions

The recommended working dilution of 1:10,000 was determined using 5 - 10 pg/tube of ¹²⁵I-labeled sulfated CCK-8 in a second antibody and polyethylene glycol RIA.

RIA Affinity Constant

The affinity constant (K_a) is determined by a Scatchard plot using this RIA system.

$K_a > 1 \times 10^{11}$ L/M.

Specificity

Specificity of the antiserum is defined as the ratio of antigen concentration to cross-reactant concentration at 50% inhibition of maximum binding. The cross-reactivity data obtained in the second antibody PEG ¹²⁵I RIA system is as follows:

Cross-reactant	% Cross-reactivity
CCK (26-33) amide (CCK-8), sulfated	100
CCK (26-33) amide (CCK-8), non-sulfated	15
CCK (30-33) amide	0.1
Caerulein	30
Gastrin I, human	0.2
Big Gastrin	1.0
Vasoactive Intestinal Peptide	0.01

Sensitivity

Sensitivity is defined as the 90% intercept of a B/B₀ standard curve. In the above system, the sensitivity has been found to be 2 pg/tube.

References

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MG,KAA,PHC 01/08-1

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