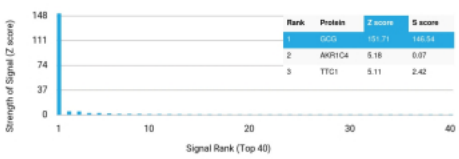
GCG Antibody / Glucagon [clone GCG/13090R] (V5903)

Catalog No.	Formulation	Size
V5903-100UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V5903-20UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug
V5903SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

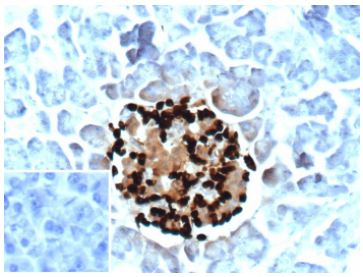
Recombinant RABBIT MONOCLONAL

Bulk quote request

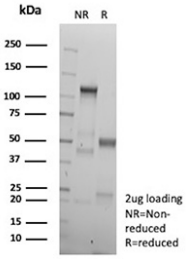
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	GCG/13090R
UniProt	P01275
Localization	Cytoplasm, Secreted
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml
Limitations	This GCG/Glucagon antibody is available for research use only.



Analysis of Protein Array containing more than 19,000 full-length human proteins using recombinant GCG/Glucagon antibody (clone GCG/13090R). Z- and S- Score: The Z-score represents the strength of a signal that a monoclonal antibody (MAb) (in combination with a fluorescently-tagged anti-IgG secondary antibody) produces when binding to a particular protein on the HuProtTM array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If targets on HuProtTM are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-score. S-score therefore represents the relative target specificity of a MAb to its intended target. A MAb is considered to specific to its intended target, if the MAb has an S-score of at least 2.5. For example, if a MAb binds to protein X with a Z-score of 43 and to protein Y with a Z-score of 14, then the S-score for the binding of that MAb to protein X is equal to 29.



Formalin-fixed, paraffin-embedded human pancreas stained with recombinant GCG/Glucagon antibody (clone GCG/13090R). Brown chromogenic signal highlights glucagon-positive endocrine cells within pancreatic islets, consistent with alpha cell localization, while surrounding exocrine acinar cells show minimal background staining. Inset shows a PBS-only negative control processed without primary antibody, confirming staining specificity.



SDS-PAGE Analysis of purified recombinant GCG/Glucagon antibody (clone GCG/13090R). Confirmation of Purity and Integrity of Antibody.

Description

GCG antibody targets Glucagon, a 29 amino acid peptide hormone encoded by the GCG gene and primarily localized to secretory granules within pancreatic alpha cells. Glucagon is synthesized as part of the larger precursor protein Proglucagon, which undergoes tissue-specific proteolytic processing to generate several biologically active peptides. In pancreatic alpha cells, prohormone convertase 2 cleaves Proglucagon to yield mature Glucagon, while alternative processing in intestinal L cells produces peptides such as glucagon-like peptide 1 and glucagon-like peptide 2. Because of this shared precursor, a Glucagon antibody is widely used to study endocrine pancreas biology and proglucagon-derived peptide expression patterns in research settings.

Glucagon plays a central role in systemic glucose homeostasis by counterbalancing insulin action. Upon hypoglycemia, Glucagon is secreted into the circulation and acts primarily on hepatocytes, where it binds the glucagon receptor and stimulates glycogenolysis and gluconeogenesis. This signaling involves activation of adenylate cyclase, increased intracellular cAMP levels, and downstream protein kinase A-mediated phosphorylation of key metabolic enzymes. Through these mechanisms, Glucagon promotes glucose release into the bloodstream and supports energy availability during fasting or metabolic stress. A GCG antibody is therefore valuable for investigating endocrine regulation of metabolism and hormonal control of hepatic glucose output.

Beyond its classical metabolic role, Glucagon has emerged as an important modulator of lipid metabolism, amino acid turnover, and energy expenditure. Studies have shown that Glucagon signaling influences hepatic fatty acid oxidation and ureagenesis, linking amino acid catabolism with glucose regulation. These expanded physiological roles have renewed interest in Glucagon biology, particularly in the context of metabolic disorders. Use of a Glucagon antibody allows researchers to examine alpha cell mass, hormone storage, and secretion dynamics under normal and pathological conditions.

In pancreatic islets, Glucagon-expressing alpha cells are spatially and functionally distinct from insulin-producing beta cells and somatostatin-producing delta cells. Alterations in alpha cell number or Glucagon expression are commonly observed in diabetes mellitus, including type 1 diabetes, type 2 diabetes, and monogenic forms of diabetes affecting islet architecture. A pancreatic Glucagon antibody is frequently applied to characterize islet composition, alpha cell distribution, and endocrine cell plasticity in both human and experimental model tissues.

Glucagon is also relevant in neuroendocrine and gastrointestinal research. Proglucagon-derived peptides share sequence homology, making specificity an important consideration when studying hormone processing pathways. Well-characterized Glucagon antibody reagents enable differentiation between pancreatic Glucagon and related intestinal peptides derived from the same precursor. Clone GCG/13090R is designed to recognize Glucagon and can be applied in

studies of hormone expression, endocrine differentiation, and metabolic disease research. NSJ Bioreagents provides this Glucagon antibody as a research tool for investigators examining alpha cell biology, hormone regulation, and metabolic signaling pathways.

Because Glucagon expression is tightly regulated at the transcriptional, translational, and post-translational levels, a GCG antibody is useful for assessing both steady-state hormone levels and adaptive responses to physiological stimuli such as fasting, exercise, or pharmacologic intervention. These applications make Glucagon antibody reagents central to studies of pancreatic endocrine function, diabetes pathogenesis, and metabolic homeostasis.

Application Notes

1. Optimal dilution of the GCG/Glucagon antibody should be determined by the researcher.

2. This GCG/Glucagon antibody is recombinantly produced by expression in human HEK293 cells.

Immunogen

A recombinant fragment (around amino acids 1-100) of human GCG protein (exact sequence is proprietary) was used as the immunogen for the GCG/Glucagon antibody.

Storage

GCG/Glucagon antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.