ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

RuBisCO Antibody

☐ Cat# RBCL21-A	Rabbt anti-Arabidopsis Thaliana RuBisCO large chain IgG, affinity pure	**SIZE**: 100 ug
☐ Cat# RBCL21-P	Control/Blocking Peptide for RuBisCO large chain antibody	**SIZE**: 100 ug

Ribulose-1,5-bisphosphate carboxylase oxygenase, most commonly known by the shorter name RuBisCO,is an enzyme involved in the Calvin cycle that catalyzes the first major step of carbon fixation, a process by which the atoms of atmospheric carbon dioxide are made available to organisms in the form of energy-rich molecules such as glucose. RuBisCO catalyzes either the carboxylation or the oxygenation of ribulose-1,5-bisphosphate (also known as RuBP) with carbon dioxide or oxygen. RuBisCO is very important in terms of biological impact because it catalyzes the primary chemical reaction by which inorganic carbon permanently enters the biosphere. Many autotrophic bacteria and archaea fix carbon via the reductive acetyl CoA pathway, the 3-hydroxypropionate cycle or the reverse Krebs cycle, but they make up a relatively minor portion of global net primary production. Phosphoenolpyruvate carboxylase PEPC only temporarily fixes carbon. RuBisCO is also the most abundant protein in leaves, and is considered to be the most abundant protein on Earth.It accounts for 50% of soluble leaf protein in C3 plants (20-30% of total leaf nitrogen) and 30% of soluble leaf protein in C4 plants (5-9% of total leaf nitrogen).Given its important role in the biosphere, there are currently efforts to genetically engineer crop plants so as to contain more efficient RuBisCO.

Source of Antigen or Antibodies

Uniprot: O03042

Host: Rabbit

Form: Polyclonal, affinity purified over a peptide column

Immunogen: Mix of peptides peptides between 16-18 aa in length conjugated to KLH

Species Reactivity: Arabidopsis Thaliana

Cross reactivity: RuBisCO is highly conserved across various plants.

Subcellular Location: Chloroplast

Alternative names: Ribulose biphosphate carboxylase large chain

Subunit structure: Heterohexadecamer of 8 large chains and 8 small chains; disulfide linked.

Recommended Secondary Antibody: Goat anti-Rabbit IgG-HRP

Negative Control: Non immune Rabbit IgG (**ADI cat# 20009-1**). Blocking peptide (**ADI cat# RBCL21-P),** use 5-10 ug of control peptide per 1 ug of affinity pure antibody or 1 ul antiserum to confirm specificity.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

☐ _____ ul solution; Concentration: _____
Supplied in PBS+0.1% Azide buffer

☐ lyophilized powder
Reconstitute powder in 200 ul PBS to 0.5 mg/ml

Control/blocking peptide

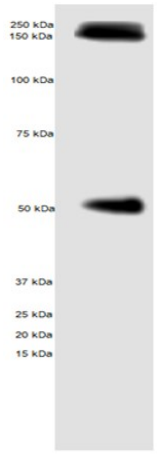
☐ 100 ug/100 ul ☐ solution ☐ lyophilized powder
Reconstitute powder in PBS at 1 mg/ml.

Storage:

Short-term: 4°C for 1 month

Long-term: at –20°C or below in suitable aliquots after reconstitution for 1 year. Do not expose to multiple free/thaw cycles or store working, diluted solutions.

Recommended Usage



Western Blotting: 0.5-2 ug/ml using affinity pure. Expected band size: ~55 kDa.

***Note:** RuBisCO is present at very high levels in plants. Lower protein loading concentrations, less sensitive ECL substrates, lower incubation times and exposure times are recommended.

ELISA: RBCL21-A was able bind to native purified RuBisCO coated protein in an ELISA format. Optimal concentration in sandwich/competitive assay has not been determined.

Immunoflouresence: Has not been tested in IF. We suggest a starting concentration of 1-4 ug/ml.

**This product is for In vitro research use only.*

Related materials available from ADI

Catalog#	Description
RBCL11-A	Rabbit anti Arabidopsis thaliana Ribulose biphosphate carboxylase large chain (RuBisCO) IgG, affinity pure (Native Protein immunogen)

ELISA Kit for the detection of RuBisCO is also available.

RBCL21-A 180326IA

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com