

Jun 30, 2020

Version 1

🌐 Protocols from Sales et al. (2020) Rubisco activity: challenges and opportunities of NADH-linked microtiter plate-based and ¹⁴C-based assays V.1

📖 [Journal of Experimental Botany](#)

DOI

dx.doi.org/10.17504/protocols.io.bf8djrs6

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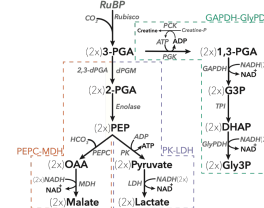
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External link: <https://doi.org/10.1093/jxb/eraa289>

Collection Citation: Cristina Rodrigues Gabriel Sales, Anabela Silva, Elizabete Carmo-Silva 2020. Protocols from Sales et al. (2020) Rubisco activity: challenges and opportunities of NADH-linked microtiter plate-based and ^{14}C -based assays.

protocols.io <https://dx.doi.org/10.17504/protocols.io.bf8djrs6>

Manuscript citation:

Sales CRG, Silva AB, Carmo-Silva E. 2020. Measuring Rubisco activity: challenges and opportunities of NADH-linked microtiter plate-based and ^{14}C -based assays. Journal of Experimental Botany, <https://doi.org/10.1093/jxb/eraa289>

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Protocol status: Working

We use this protocol and it's working

Created: May 11, 2020

Last Modified: June 30, 2020

Collection Integer ID: 36837

Keywords: dPGM, enzyme activity assay, GAPDH-GlyPDH, NADH, PEPC-MDH, PK-LDH, Rubisco, microtiter plate, radiometric assay for rubisco activity, assays for rubisco activity, rubisco activity, measuring rubisco activity, radiometric assay, alternative coupling enzyme, dependent phosphoglycerate mutase, dehydrogenase, glycerolphosphate, pyruvate, based assay, phosphoglycerate, opportunities of nadh,

Abstract

This collection of protocols includes four assays for measuring Rubisco activity that are used and discussed in the manuscript "Rubisco activity: challenges and opportunities of NADH-linked microtiter plate-based and ^{14}C -based assays" (Sales et al. 2020).

Three of the protocols are NADH-linked microtiter plate-based assays for Rubisco activity that use alternative coupling enzymes:

1. GAPDH-GlyPDH, glyceraldehyde-3-phosphate-dehydrogenase and glycerolphosphate-dehydrogenase;
2. PEPC-MDH, phosphoenolpyruvate-carboxylase and malate-dehydrogenase;
3. PK-LDH, pyruvate-kinase and lactate-dehydrogenase.

The radiometric assay for Rubisco activity measures the incorporation of $^{14}\text{CO}_2$ into 3-phosphoglycerate (3-PGA).

The fifth protocol describes the purification of 2,3-bisphosphate-dependent phosphoglycerate mutase (dPGM), which is required for the NADH-linked microtiter plate-based assays 2 (PEPC-MDH) and 3 (PK-LDH).

Guidelines

Please, check each protocols for detailed guidelines.

Troubleshooting

Files

 SEARCH

Protocol



NAME

¹⁴CO₂-based assay for measuring Rubisco activity & activation state

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NAME

NADH-linked microtiter plate-based assay for measuring Rubisco activity & activation state – GAPDH-GlyPDH

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NADH-linked microtiter plate-based assay for measuring Rubisco activity & activation state – PEPC-MDH

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NADH-linked microtiter plate-based assay for measuring Rubisco activity & activation state – PK-LDH

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Purification of 2,3-bisphosphate-dependent phosphoglycerate mutase (dPGM)

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