

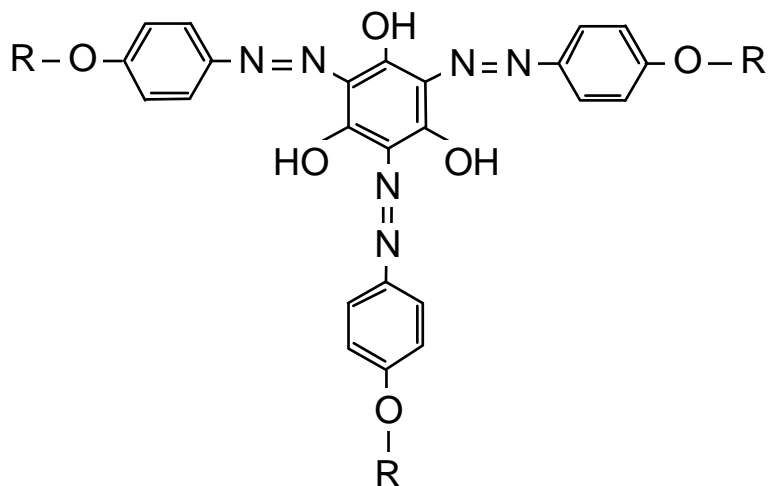
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# YARIV REAGENTS

## FOR DETECTION AND QUANTITATION OF ARABINO GALACTAN-PROTEINS

FOR RESEARCH PURPOSES ONLY

Cat. Nos. 100-2, 100-3, 100-4, 100-5, 100-6, 100-8



R =  $\beta$ -D-glucosyl (Cat. No. 100-2),  $\alpha$ -D-galactosyl (Cat. No. 100-3),  $\alpha$ -D-mannosyl (Cat. No. 100-5),

$\beta$ -D-mannosyl residue (Cat. No. 100-6) or  $\beta$ -D-galactosyl (Cat. No. 100-8)

### APPLICATIONS

The  $\beta$ -glucosyl Yariv reagent can be used as;

- A histochemical reagent to detect AGP's in tissue sections (Anderson *et al.*, 1977; Gleeson & Clarke, 1979).
- To detect and quantify the amounts of AGP's in a tissue extract (Van Holst & Clarke, 1985).
- To separate AGP's according to their charge by crossed electrophoresis (Van Holst & Clarke, 1986).

### CHEMICAL PROPERTIES

The  $\beta$ -glucosyl Yariv reagent [1,3,5-tris (4- $\beta$ -D-glycopyranosyloxyphenylazo)-2,4,6-trihydroxybenzene] are red dyes which specifically bind to and precipitate a class of plant proteolysis, the AGP's (Yariv *et al.*, 1967; Jermyn & Yeow, 1975; Anderson *et al.*, 1977; Clarke *et al.*, 1979; Fincher *et al.*, 1983).

## METHOD OF USE

### *As a histochemical reagent:*

Dissolve 2mg of  $\beta$ -glucosyl Yariv reagent in 1mL of 0.15M NaCl. Apply to tissue section for 1h at room temperature and examine by bright field microscopy. The AGP's precipitate in the Yariv reagent to give a red stain. The exact colour varies from brown-red to bright red depending on the tissue. As AGP's are usually water-soluble, they may be lost during the procedures for tissue embedding; it is therefore advisable to start with hand or cryostat sections. As a control the  $\alpha$ -Gal Yariv reagent is used.

### *For quantification:*

Prepare a solution containing 1% w/v agarose, 0.15M NaCl, 0.02% w/v  $\text{NaN}_3$  and 10 $\mu$ g/mL  $\beta$ -glucosyl Yariv reagent. Heat to boiling, pour 3.5mL aliquots onto preheated glass plates (5x7cm); cool. Punch wells in gel formed. Place test solutions in wells; construct standard curve using reference AGP (e.g. gum arabic) according to Van Holst & Clarke (1985).

### *For crossed electrophoresis:*

Prepare a solution containing 1%w/v agarose in 0.025M Tris, 0.2M glycine, 0.02%w/v  $\text{NaN}_3$  and 30mg/mL  $\beta$ -glucosyl Yariv reagent. Heat to dissolve agarose; use in crossed electrophoresis experiments according to Van Holst & Clarke (1986).

All solutions are stable for at least a year at room temperature.

In some applications the  $\beta$ -D-Mannosyl Yariv reagent can replace  $\beta$ -D-Glucosyl Yariv reagent. Similarly  $\alpha$ -D-Mannosyl Yariv reagent can replace  $\alpha$ -D-Galactosyl Yariv reagent.

## REFERENCES

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- Van Holst, G.J. & Clarke, A.E. (1985). *Anal. Biochem.* 148: 446-450.
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## PRODUCT PACKS

### *For histochemistry*

**$\beta$ -D-Glucosyl Yariv Reagent**  
Cat. No. 100-2 (2mg)

**$\alpha$ -D-Galactosyl Yariv Reagent**  
Cat. No. 100-3 (2mg)

Sufficient for staining 50 sections.

### *For quantification, radial diffusion tests and crossed electrophoresis:*

**$\beta$ -D-Glucosyl Yariv Reagent Kit**  
Cat. No. 100-4 (10mg)

Includes sample of gum arabic (Cat. No. 100-7) for use as reference standard.

Sufficient for preparation of 300 plates, each containing 24 wells for radial diffusion, or 30 runs for crossed electrophoresis.

### *Other Yariv Reagents*

**$\alpha$ -D-Mannosyl Yariv Reagent**  
Cat. No. 100-5 (2mg)

**$\beta$ -D-Mannosyl Yariv Reagent**  
Cat. No. 100-6

**$\beta$ -D-Galactosyl Yariv Reagent**  
Cat. No. 100-8

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