碘-碘化钾染色实验报告

一、实验器材及试剂

1、 实验器材

名称	厂家	型号
脱水机	DIAPATH	Donatello
包埋机	武汉俊杰电子有限公司	JB-P5
病理切片机	上海徕卡仪器有限公司	RM2016
冻台	武汉俊杰电子有限公司	JB-L5
组织摊片机	浙江省金华市科迪仪器设备有限公司	KD-P
烤箱	天津市莱玻瑞仪器设备有限公司	GFL-230
载玻片	Servicebio	
正置光学显微镜	日本尼康	NIKON ECLIPSE E100
成像系统	日本尼康	NIKON DS-U3

2、 主要实验试剂

试剂名称	厂家	货号
无水乙醇	国药集团化学试剂有限公司	100092683
二甲苯	国药集团化学试剂有限公司	10023418
碘-碘化钾染液	Servicebio	G1070
中性树胶	国药集团化学试剂有限公司	10004160
植物固绿染色液	Servicebio	G1031-2

二、实验步骤

1、石蜡切片脱蜡至水：依次将切片放入二甲苯I 20 min-二甲苯II 20 min-无水乙醇I 5 min-无水乙醇II 5 min-75%酒精 5 min，自来水洗。

2、碘-碘化钾染色：

① 同时染植物淀粉粒和细胞壁：

（1）组化笔画圈圈住组织，滴加适量碘-碘化钾溶液于组织上染色 5 min；

（2）切片入 2 缸自来水快速浸洗，各 2 s，切片入 2 缸无水乙醇快速脱水，各 10 s；

（3）切片直接入植物固绿染液浸染 10 s，入 3 缸无水乙醇快速脱水，各 10 s。

（4）切片入正丁醇 1 min，二甲苯透明 5 min，中性树胶封片，立即拍照保存实验结果,防止褪色。

② 只染植物淀粉粒：

（1）组化笔画圈圈住组织，滴加适量碘-碘化钾溶液于组织上染色 10 min；

（2）倾去染液，快速水洗立即将切片上的水甩干，入 60℃烤箱烘烤半天。

（3）切片入干净的二甲苯透明 3 min，中性树胶封片，立即拍照保存实验结果,防止褪色。

③ 同时染植物淀粉粒和蛋白颗粒：(高蛋白含量的组织，如：黄豆)

（1）切片脱蜡至水，组化笔画圈圈住组织；

（2）将碘-碘化钾溶液滴在组织上，染色 2 min 后，直接将盖玻片盖在染液上封片，组织上不能有气泡，滤纸吸除玻片周边溢出的染液，立即拍照保存实验结果。

三、结果判读：

淀粉粒呈蓝色或蓝黑色，细胞壁呈绿色。

四、注意事项：

本染色易褪色，染色后应尽快拍照保存结果。

Iodine-potassium Iodide Staining Experimental Report

1. Experimental Equipment and Reagents

1.1 Experimental equipment

Name	Manufactor	Model
Dehydrator	DIAPATH	Donatello
Embedding machine	Wuhan Junjie Electronics Co., Ltd	JB-P5
Pathological section machine	Shanghai Leica Instrument Co., Ltd	RM2016
Frozen platform	Wuhan Junjie Electronics Co., Ltd	JB-L5
KD-P Water Bath	Kedee	KD-P
Oven	Tianjin Lai Bo Rui Instrument Equipment Co., Ltd	GFL-230
Slides	Servicebio	
Orthostatic microscope	NIKON, JAPAN	NIKON ECLIPSE E100
Image system	NIKON, JAPAN	NIKON DS-U3

1.2 Main experimental reagents

Reagent name	Manufactor	Article number
Absolute ethanol	Sinopharm Group Chemical Reagent Co. LTD	100092683
Xylene	Sinopharm Group Chemical Reagent Co. LTD	10023418
I-KI dye solution	Servicebio	G1070
Neutral resin	Sinopharm Group Chemical Reagent Co. LTD	10004160
Fast Green dye solution (Plant)	Servicebio	G1031-2

2. Experimental Steps

2.1 Paraffin slides dewaxed as follow: Two changes of pure xylene for 20 min. Two changes of pure ethanol for 5min. 75% ethanol for 5min. Keep slides in tap water.

2.2 Iodine-potassium iodide staining

2.2.1 Staining starch granules and cell walls of plants

2.2.1.1 Draw a circle around the tissues with Pap Pen, and drip proper amount of I-KI dye solution to stain the tissues for 5min.

2.2.1.2 Put the slices into 2 tanks of tap water and immerse them for 2s rapidly, and then put them into 2 tanks of absolute ethanol for 10s rapid dehydration.

2.2.1.3 Dip the slides directly into the fast green dye solution for 10s, and put them into 3 tanks of absolute ethanol for 10s rapid dehydration.

2.2.1.4 Put the slides into n-butanol for 1min, and then clear them in xylene for 5min. Finally seal slides with neutral resin. To avoid fading, take pictures as soon as possible to record the results of the experiment.

2.2.2 Staining starch granules of plants only

2.2.2.1 Draw a circle around the tissues with Pap-Pen, and drip proper amount of I-KI dye solution to stain the tissues for 10min.

2.2.2.2 Pour off the dyeing solution, wash it quickly and immediately spin off the water on the slide, and bake it in the oven at 60℃ for half a day.

2.2.2.3 Put the slices into clear xylene for 3min, and then seal with neutral gum. To avoid discoloration, take pictures immediately to save the experimental results.

2.2.3 Staining starch granules and protein granules of plants: (tissues with high protein content, such as soybeans)

2.2.3.1 The section is dewaxed to water, and draw a circle around the tissues with PAP-Pen

2.2.3.2 Drip I-KI dye solution to stain the tissue for 2min, and put a coverslip directly on a slide for sealing. Notice that no bubbles are on the tissue, and use filter paper to absorb the dye overflowing around the slide. Take pictures immediately to save the experimental results.

3. The Results Were As Follows

The starch granules were blue or blue-black, and the cell walls were green.

4. Precautions

This staining was easy to fade, so photograph the results as soon as possible.