

HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use IC-GREEN safely and effectively. See full prescribing information for IC-GREEN.

IC-GREEN® (indocyanine green for injection), for intravenous or interstitial use

Initial U.S. Approval: 1959

RECENT MAJOR CHANGES

Indications and Usage, For determining Cardiac Output, Hepatic Function, and Liver Blood Flow (1.1)	Removed	12/2024
Indications and Usage (1.1, 1.2, 1.3)		12/2024
Dosage and Administration, Indicator-Dilution Studies and Hepatic Function Studies (2.1, 2.2)	Removed	12/2024
Dosage and Administration (2.1, 2.2, 2.3, 2.5)		12/2024

INDICATIONS AND USAGE

IC-GREEN is an optical imaging agent indicated for:

- Fluorescence imaging of vessels (micro- and macro-vasculature), blood flow and tissue perfusion before, during and after vascular, gastrointestinal, organ transplant, plastic, micro- and reconstructive surgeries, including general minimally invasive surgical procedures, in adults and pediatric patients aged 1 month and older (1.1)
- Fluorescence imaging of extrahepatic biliary ducts in adults and pediatric patients aged 12 years and older (1.2)
- Fluorescence imaging of lymph nodes and lymphatic vessels during lymphatic mapping in adults with cervical and uterine cancer (1.3)
- Ophthalmic angiography in adults and pediatric patients (1.4)

DOSAGE AND ADMINISTRATION

- Visualization of vessels, blood flow and tissue perfusion (2.5 mg/mL solution)
 - 1.25 mg to 5 mg by intravenous injection is recommended for a surgical procedure in adults and pediatric patients aged 1 month and older.
 - 3.75 mg to 10 mg by intravenous injection is recommended for visualization of perfusion in extremities through the skin for plastic, micro- and reconstructive surgeries in adults.
 - Additional doses may be administered. Do not exceed a total dose of 2 mg/kg. (2.1)
- Visualization of extrahepatic biliary ducts in adults and pediatric patients aged 12 years and older (2.5 mg/mL solution)

- 2.5 mg by intravenous injection at least 45 minutes prior to surgery.
- Additional doses may be administered. Do not exceed a total dose of 2 mg/kg. (2.2)
- Lymphatic mapping of cervical and uterine cancer in adults (1.25 mg/mL solution)
 - 5 mg interstitially as four 1 mL injections.
 - See Full Prescribing Information for injection techniques. (2.3)
- Ophthalmic Angiography
 - Doses up to 40 mg in 2 ml of Sterile Water for Injection by intravenous injection. (2.4)
- See Full Prescribing Information for reconstitution instructions. (2.5).

DOSAGE FORMS AND STRENGTHS

For injection: 25 mg of indocyanine green as a lyophilized, green powder for reconstitution in a single-patient-use vial (3)

CONTRAINDICATIONS

Hypersensitivity to indocyanine green (4)

WARNINGS AND PRECAUTIONS

Hypersensitivity reactions: Hypersensitivity reactions including anaphylaxis and urticaria have occurred. Always have cardiopulmonary resuscitation personnel and equipment readily available and monitor patients. (5.1)

ADVERSE REACTIONS

The most common adverse reactions reported are anaphylaxis and urticaria. (6)

To report SUSPECTED ADVERSE REACTIONS, contact Diagnostic Green LLC at 1-844-424-3784) or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

DRUG INTERACTIONS

Interference with Thyroid Radioactive Iodine Uptake Studies: Do not perform radioactive iodine uptake studies for at least one week following the use of IC-GREEN. (7)

See 17 for PATIENT COUNSELING INFORMATION

Revised: 12/2024

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FULL PRESCRIBING INFORMATION

1 INDICATIONS AND USAGE

1.1 Visualization of Vessels, Blood Flow and Tissue Perfusion

IC-GREEN is indicated for fluorescence imaging of vessels (micro- and macro-vasculature), blood flow and tissue perfusion before, during and after vascular, gastrointestinal, organ transplant, plastic, micro- and reconstructive surgeries, including general minimally invasive surgical procedures in adults and pediatric patients aged 1 month and older.

1.2 Visualization of Extrahepatic Biliary Ducts

IC-GREEN is indicated for fluorescence imaging of extrahepatic biliary ducts in adults and pediatric patients aged 12 years and older.

1.3 Lymphatic Mapping of Cervical and Uterine Cancer

IC-GREEN is indicated for fluorescence imaging of lymph nodes and delineation of lymphatic vessels during lymphatic mapping in adults with cervical and uterine cancer for which this procedure is a component of intraoperative management.

1.4 Ophthalmic Angiography

IC-GREEN is indicated for use in ophthalmic angiography in adults and pediatric patients.

2 DOSAGE AND ADMINISTRATION

2.1 Recommended Dose, Administration and Imaging for Visualization of Vessels, Blood Flow and Tissue Perfusion

Dosing

Adults:

The recommended dose of IC-GREEN for a single image sequence for visualization of vessels, blood flow and tissue perfusion in adults is 1.25 mg to 5 mg administered intravenously as 0.5 mL to 2 mL of a 2.5 mg/mL solution.

For visualization of perfusion in extremities through the skin in adults, the recommended dose is 3.75 mg to 10 mg administered intravenously as 1.5 mL to 4 mL of a 2.5 mg/mL solution.

Immediately flush with a 10 mL bolus of 0.9% Sodium Chloride Injection.

Pediatric patients aged 1 month and older:

The recommended dose of IC-GREEN for a single image sequence for visualization of vessels, blood flow and tissue perfusion in pediatric patients aged 1 month and older is 1.25 mg to 5 mg administered intravenously as 0.5 mL to 2 mL of a 2.5 mg/mL solution. Lower doses may be administered in younger patients and in those with lower body weight. Adjust the amount and type of flush to avoid volume and/or sodium overload.

In both adults and pediatric patients aged 1 month and older, additional doses may be administered to obtain imaging sequences during the procedure. Do not exceed the maximum total dose of 2 mg/kg.

Administration

Prior to the imaging procedure, draw up the desired dose of IC-GREEN solution into appropriate syringes and prepare a 10 mL syringe of 0.9% Sodium Chloride Injection.

Administer via a central or peripheral venous line using a three-way stopcock attached to an injection port on the infusion line. Inject the prepared IC-GREEN into the line as a tight bolus. Immediately switch the access on the stopcock and inject the prepared flush.

Imaging Instructions

IC-GREEN may be used with an FDA-authorized imaging device that is intended to be used with indocyanine green for fluorescence imaging of vessels, blood flow and tissue perfusion.

A fluorescence response should be visible in blood vessels within 5 seconds to 15 seconds after injection.

2.2 Recommended Dose, Administration and Imaging for Visualization of Extrahepatic Biliary Ducts

Dosing and Administration

The recommended dose of IC-GREEN for visualization of extrahepatic biliary ducts in adults and pediatric patients aged 12 years and older is 2.5 mg administered intravenously as 1 mL of a 2.5 mg/mL solution at least 45 minutes prior to surgery.

Additional doses may be administered to obtain imaging sequences during the procedure.

Do not exceed a total dose of 2 mg/kg.

Imaging Instructions

IC-GREEN may be used with an FDA-authorized imaging device that is intended to be used with indocyanine green for fluorescence imaging of extrahepatic biliary ducts.

Fluorescence is visible in the biliary tree within 45 minutes after injection.

2.3 Recommended Dose, Administration and Imaging for Lymphatic Mapping of Cervical and Uterine Cancer

Dosing and Administration

The recommended dose of IC-GREEN for lymphatic mapping of cervical and uterine cancer in adults is 5 mg administered interstitially as four 1 mL injections of a 1.25 mg/mL solution into the cervix, at the 3 o'clock and the 9 o'clock positions with a superficial (1 mm to 3 mm) and a deep (1 cm to 3 cm) injection at each position.

Imaging Instructions

IC-GREEN may be used with an FDA-authorized imaging device that is intended to be used with indocyanine green for fluorescence imaging of lymph nodes and delineation of lymphatic vessels during lymphatic mapping of cervical and uterine cancer.

Fluorescent lymphatic vessels and lymph nodes should begin to be visible within 1 minute after injection.

2.4 Recommended Dose and Administration for Ophthalmic Angiography

Dosing and Administration

Doses up to 40 mg IC-GREEN in 2 mL of Sterile Water for Injection depending on the imaging equipment and technique used should be administered intravenously and immediately followed by a 5 mL bolus of 0.9% Sodium Chloride Injection. The antecubital vein can be used for IC-GREEN administration.

2.5 Reconstitution Instructions

General

- Prepare IC-GREEN using aseptic techniques prior to procedure.
- Inspect the reconstituted solution for particulate matter. The reconstituted solution should be a clear, green solution.
- Use the prepared solution within 6 hours.
- Discard any unused product.

Visualization of Vessels, Blood Flow, Tissue Perfusion and Extrahepatic Biliary Ducts

Dissolve 25 mg of IC-GREEN with 10 mL Sterile Water for Injection to form a concentration of 2.5 mg/mL indocyanine green.

Lymphatic Mapping of Cervical and Uterine Cancer

Dissolve 25 mg of IC-GREEN with 20 mL Sterile Water for Injection to form a concentration of 1.25 mg/mL indocyanine green.

Ophthalmic Angiography

Dissolve doses up to 40 mg of IC-GREEN with 2 mL Sterile Water for Injection.

3 DOSAGE FORMS AND STRENGTHS

For injection: 25 mg of indocyanine green as a sterile, lyophilized, green powder for reconstitution provided in a 25 mL single-patient-use vial.

4 CONTRAINDICATIONS

IC-GREEN is contraindicated in patients with a history of hypersensitivity to indocyanine green. Reactions have included anaphylaxis [see *Warnings and Precautions* (5.1)].

5 WARNINGS AND PRECAUTIONS

5.1 Hypersensitivity Reactions

Hypersensitivity reactions including anaphylaxis, urticaria and deaths due to anaphylaxis have been reported following intravenous administration of IC-GREEN [see *Adverse Reactions* (6)].

IC-GREEN is contraindicated in patients with a history of hypersensitivity to indocyanine green [see *Contraindications* (4)]. Always have cardiopulmonary resuscitation personnel and equipment readily available and monitor all patients for hypersensitivity reactions.

5.2 Interference with Thyroid Radioactive Iodine Uptake Studies

Because IC-GREEN contains sodium iodide, the iodine-binding capacity of thyroid tissue may be reduced for at least one week following administration [see *Drug Interactions* (7)].

6 ADVERSE REACTIONS

The following clinically significant adverse reactions are described elsewhere in the labeling:

- Hypersensitivity Reactions [see *Warnings and Precautions* (5.1)].

The following adverse reactions have been identified during post-approval use of IC-GREEN. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Immune System Disorders: Anaphylaxis, urticaria

7 DRUG INTERACTIONS

Interference with Thyroid Radioactive Iodine Uptake Studies

Because IC-GREEN contains sodium iodide, the iodine-binding capacity of thyroid tissue may be reduced for at least one week following administration. Do not perform radioactive iodine uptake studies for at least one week following administration of IC-GREEN.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

There are no adequate and well-controlled studies of IC-GREEN in pregnant women. Available data from a very small number of scientific literature studies with indocyanine green use in pregnant women over several decades have not reported any drug associated risks for major birth defects, miscarriage, or adverse maternal or fetal outcomes. Data from one small study in which indocyanine green was administered intravenously to pregnant women during labor suggest there is no placental transfer of the drug. Animal reproduction studies have not been conducted with indocyanine green.

All pregnancies have a background risk of birth defects, loss, or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2 to 4% and 15 to 20%,

respectively.

8.2 Lactation

Risk Summary

Seventeen cases of indocyanine green use in lactating women have been reported in the scientific literature with no adverse events observed in the breastfed infant. However, there are no data on the presence of indocyanine green in human milk or the effects on milk production. Therefore, the developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for IC-GREEN and any potential adverse effects on the breastfed infant from IC-GREEN or from the underlying maternal condition.

8.4 Pediatric Use

Use of IC-GREEN for visualization of vessels, blood flow and tissue perfusion has been established in pediatric patients aged 1 month and older. Pediatric use is supported by published data in 49 pediatric patients who received indocyanine green for assessment of blood flow and tissue perfusion in cardiovascular, vascular, and plastic, micro- and reconstructive surgical procedures, and by clinical trials in adults. No overall differences in safety or effectiveness have been observed between pediatric patients and adults. The dose range was similar to the effective dose range in adults [*see Dosage and Administration (2.1)*]. The use of IC-GREEN for visualization of vessels, blood flow and tissue perfusion has not been established in pediatric patients aged less than 1 month.

Use of IC-GREEN for visualization of extrahepatic biliary ducts has been established in pediatric patients aged 12 years and older. Pediatric use is supported by clinical trials in adults in addition to clinical use in pediatric patients. No overall differences in safety or effectiveness have been observed between pediatric patients and adults. The dose range was similar to the effective dose range in adults [*see Dosage and Administration (2.2)*]. The use of IC-GREEN for visualization of extrahepatic biliary ducts has not been established in pediatric patients aged less than 12 years.

Use of IC-GREEN for visualization of lymph nodes and lymphatic vessels during lymphatic mapping for cervical and uterine cancer have not been established in pediatric patients.

Use of IC-GREEN for ophthalmic angiography has been established in pediatric patients. Pediatric use is supported by evidence from the published literature.

8.5 Geriatric Use

Of the total number of patients in clinical studies of indocyanine green for injection for visualization of vessels, blood flow and tissue perfusion, 7% were 65 and over, while 1% were 75 and over. Of the total number of patients in clinical studies of indocyanine green for injection for visualization of lymph nodes and lymphatic vessels during lymphatic mapping of cervical and uterine cancer, 9% were 65 and over, while 2% were 75 and over. Clinical studies of indocyanine green for injection for visualization of

There are no pharmacodynamic data.

12.3 Pharmacokinetics

Distribution

Following intravenous injection, indocyanine green binds to plasma proteins (98%) and is largely confined to the intravascular compartment. Indocyanine green undergoes no significant extrahepatic or enterohepatic circulation; simultaneous arterial and venous blood estimations have shown negligible renal, peripheral, lung or cerebro-spinal uptake of the dye. After biliary obstruction, the dye appears in the hepatic lymph, independently of the bile, suggesting that the biliary mucosa is sufficiently intact to prevent diffusion of the dye, though allowing diffusion of bilirubin.

Following interstitial injection, indocyanine green binds to proteins in lymph fluid and the interstitial space, is taken up by the lymphatic vessels, and drains to the lymph nodes.

Since excessive dye extravasation does not take place in the highly fenestrated choroidal vasculature, IC-GREEN is useful in both absorption and fluorescence infrared angiography of the choroidal vasculature when using appropriate filters and film in a fundus camera.

Elimination

Indocyanine green is taken up from the plasma almost exclusively by the hepatic parenchymal cells and is secreted entirely into the bile.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

No studies have been performed to evaluate the potential for carcinogenicity, mutagenicity, or impairment of fertility by indocyanine green.

14 CLINICAL STUDIES

14.1 Lymphatic Mapping of Cervical and Uterine Cancer

The effectiveness of IC-GREEN for fluorescence imaging of lymph nodes and delineation of lymphatic vessels during lymphatic mapping in adults with cervical and uterine cancer has been established based on a study of another formulation of indocyanine green for injection. Below is a description of the FILM Study (NCT 02209532).

The study was a randomized, prospective, multi-center, open-label study in patients with early stage uterine or cervical cancer and no known regional nodal or metastatic disease by standard clinical evaluation. Indocyanine green and a blue dye comparator were injected into the cervix of patients at the beginning of the operative procedure.

A total of 176 patients were randomized to receive either indocyanine green followed by blue dye or blue dye followed by indocyanine green. A total of four 1 mL

injections of a 1.25 mg/ml solution of indocyanine green for a total dose of 5 mg were administered interstitially into the cervix at the 3 o'clock and 9 o'clock positions with a superficial (1 mm to 3 mm) and a deep (1 cm to 3 cm) injection at each position.

Lymphatic mapping was performed intraoperatively using a fluorescence imaging device and standard light, followed by excision of tissues identified by indocyanine green, blue dye, or the surgeon's visual and palpation examination. The resected tissues were evaluated by histopathology to confirm presence of lymph nodes. The efficacy of indocyanine green in the detection of lymphatic vessels and lymph nodes during lymphatic mapping procedures was determined by the number of histology-confirmed lymph nodes detected by indocyanine green and/or the blue dye comparator.

The mean age of the 176 patients was 63 years (range: 31 to 88 years); distribution by race and ethnicity was 79% White, 4% Black or African American, 3% Asian, 13% Hispanic/Latino and 1% other.

[Table 1](#) shows the distribution of resected, confirmed lymph nodes detected by indocyanine green or blue dye in the modified intent-to-treat population (mITT). Among the confirmed lymph nodes identified, 93% were identified using indocyanine green, and 43% were identified using blue dye, a difference of 50% [95% confidence interval 39% to 60%].

Table 1: Distribution of Resected, Confirmed Lymph Nodes Detected by Indocyanine Green or Blue Dye (BD)

Analysis Population	Nodes (n)	All Lymph Nodes Detected with Indocyanine Green	All Lymph Nodes Detected with BD	Lymph Nodes Detected with Indocyanine Green Only	Lymph Nodes Detected with BD Only	Lymph Nodes Detected with Neither
mITT	513	(476/513) 93%	(220/513) 43%	(262/513) 51%	(6/513) 1%	(31/513) 6%

[Table 2](#) shows the number of patients with at least one resected, confirmed lymph node and the number of patients with at least one bilateral lymph node pair detected by indocyanine green or blue dye. With indocyanine green, approximately 97% of patients had at least one resected, confirmed lymph node detected and 73% had at least one bilateral lymph node pair detected, compared with 68% and 28%, respectively, with blue dye (p-values for each analysis <0.0001).

Table 2: Distribution of Patients with at Least One Confirmed Unilateral Lymph Node/ Bilateral Pair Detected by Indocyanine Green or Blue Dye (BD)

Analysis Population	Patients (n)	Patients with All Lymph Nodes Detected with	Patients with All Lymph Nodes Detected with	Patients with Lymph Nodes Detected	Patients with Lymph Nodes Detected	Patients with Lymph Nodes Detected

		Indocyanine Green	BD	with Indocyanine Green only	with BD only	with Neither
mITT Unilateral*	172	(167/172) 97%	(118/172) 68%	(51/172) 30%	(2/172) 1%	(3/172) 3%
mITT Bilateral**		(126/172) 73%	(49/172) 28%	(79/172) 46%	(2/172) 1%	(44/172) 26%

*: patients with at least one resected confirmed lymph node detected unilaterally

** : patients with at least one resected confirmed lymph node detected bilaterally

16 HOW SUPPLIED/STORAGE AND HANDLING

How Supplied

IC-GREEN (indocyanine green for injection) is supplied as a kit (NDC 70100-725-02) containing the following:

- Six 25 mL single-patient-use vials of IC-GREEN (25 mg each) as a sterile, lyophilized green powder for reconstitution NDC 70100-725-01
- Six single-dose vials of Sterile Water for Injection (10 mL each) NDC 63323-185-10 or NDC 0409-4887-17

Storage and Handling

Store at 20°C to 25°C (68°F to 77°F).

17 PATIENT COUNSELING INFORMATION

Hypersensitivity Reactions

Advise patients to seek medical attention for reactions following injection of IC-GREEN such as difficulty breathing, swollen tongue or throat, skin reactions including hives, itching and flushed or pale skin, low blood pressure, a weak and rapid pulse and other symptoms or signs of an anaphylactic reaction [*see Warnings and Precautions (5.1)*].

Manufactured by:

Patheon Italia S.p.A.

20900 Monza (MB), ITALY

Distributed by:

Diagnostic Green LLC

Farmington Hills, MI 48331

Sterile Water for injection, USP is manufactured by:

Fresenius Kabi USA, LLC

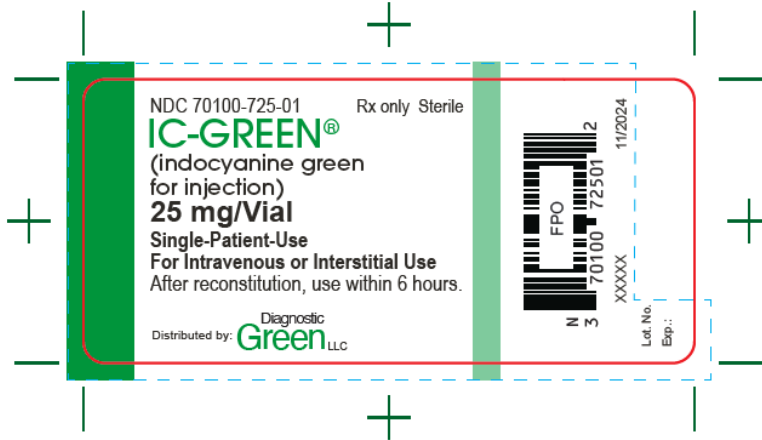
Grand Island, NY 14072

or

Hospira, Inc.

Rocky Mount, NC 27804

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LABEL LEGEND

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(b) (4)

Distributed by: **Green** LLC
Diagnostic

IC-GREEN®
(indocyanine green for injection)
25 mg/Vial

Single-Patient-Use For Intravenous or Interstitial Use

NDC 70100-725-02
Rx Only - Sterile

IC-GREEN®
(indocyanine green for injection)
25 mg/Vial

Single-Patient-Use For Intravenous or Interstitial Use

Rx Only - Sterile

NDC 70100-725-02

Recommended Dosage and Reconstitution
Instructions: See Prescribing Information
Use within 6 hours after reconstitution.

STORAGE: Store at 20° to 25° C (68° to 77°F)
KIT CONTAINS:
• Six vials of IC-GREEN (25 mg each)
• Six Sterile Water for Injection (10 mL each)

IC-GREEN®
(indocyanine green for injection)

Distributed by:
Diagnostic Green LLC
Farmington Hills MI 48331 USA

Manufactured by:
Patheon Italia S.p. A.
20052 Monza (Milano) ITALY

Sterile Water Manufactured by:
Hospira, Inc.
Rocky Mount, NC 27804
or
Fresenius Kabi USA, LLC
Grand Island, NY 14072

11/2024

IC-GREEN®
(indocyanine green for injection)
25 mg/Vial

Single-Patient-Use For Intravenous or Interstitial Use

Rx Only - Sterile

NDC 70100-725-02

Distributed by: **Green** LLC
Diagnostic

IC-GREEN®
(indocyanine green for injection)

Rx Only 25 mg/Vial

NDC 70100-72502
FPO

CARTON LEGEND

 **PRINT SIDE**
NO VARNISH

 **HIDDEN AREA**



This is a representation of an electronic record that was signed electronically. Following this are manifestations of any and all electronic signatures for this electronic record.

/s/

LIBERO L MARZELLA
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