

# **GALLIUM GA-68 PSMA-11- gallium ga-68 gozetotide injection, solution**

## **UCLA Biomedical Cyclotron**

-----

### **HIGHLIGHTS OF PRESCRIBING INFORMATION**

**These highlights do not include all the information needed to use GALLIUM GA 68 GOZETOTIDE <sup>68</sup> INJECTION safely and effectively. See full prescribing information for GALLIUM GA 68 GOZETOTIDE INJECTION.**

### **GALLIUM GA 68 GOZETOTIDE INJECTION, for intravenous use**

**Initial U.S. Approval: 2020**

**( <sup>68</sup>Gozetotide is also known as PSMA-11)**

### **INDICATIONS AND USAGE**

Gallium Ga 68 Gozetotide Injection is a radioactive diagnostic agent indicated for positron emission tomography (PET) of prostate-specific membrane antigen (PSMA) positive lesions in men with prostate cancer:

- with suspected metastasis who are candidates for initial definitive therapy.
- with suspected recurrence based on elevated serum prostate-specific antigen (PSA) level. (1)

### **DOSAGE AND ADMINISTRATION**

- Use appropriate aseptic technique and radiation safety handling measures to maintain sterility during all operations involved in the manipulation and administration of Gallium Ga 68 Gozetotide Injection. ( 2.1)
- The recommended adult dose is 111 MBq to 259 MBq (3 mCi to 7 mCi) as a bolus intravenous injection. ( 2.2)
- A diuretic expected to act within the uptake time period may be administered at the time of radiotracer injection. ( 2.2)
- Initiate imaging 50 to 100 minutes after administration. The patient should void immediately prior to initiation of imaging. Scan should begin caudally and proceed cranially. ( 2.4)
- See full prescribing information for additional preparation, administration, imaging, and radiation dosimetry information. ( 2)

### **DOSAGE FORMS AND STRENGTHS**

Injection: clear, colorless solution in a multiple-dose vial containing 18.5 MBq/mL to 185 MBq/mL (0.5 mCi/mL to 5 mCi/mL) gallium Ga 68 gozetotide in approximately 12 mL at calibration time ( 3)

### **CONTRAINDICATIONS**

None ( 4)

### **WARNINGS AND PRECAUTIONS**

- Risk for misdiagnosis: Gallium Ga 68 gozetotide uptake can be seen in a variety of tumor types and in non-malignant processes. Image interpretation errors can occur with gallium Ga 68 gozetotide PET. ( 5.1)
- Radiation risk: Ensure safe handling to protect patients and health care workers from unintentional radiation exposure. ( 2.1, 5.2)

### **ADVERSE REACTIONS**

The most commonly reported adverse reactions include nausea, diarrhea, and dizziness. ( 6)

**To report SUSPECTED ADVERSE REACTIONS, contact UCLA Nuclear Medicine at 1-844-963-1855 or FDA at 1-800-FDA-1088 or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).**

**See 17 for PATIENT COUNSELING INFORMATION.**

**Revised: 6/2022**

---

## **FULL PRESCRIBING INFORMATION: CONTENTS\***

### **1 INDICATIONS AND USAGE**

### **2 DOSAGE AND ADMINISTRATION**

- 2.1 Radiation Safety – Drug Handling
- 2.2 Recommended Dosage and Administration Instructions
- 2.3 Patient Preparation Prior to PET Imaging
- 2.4 Image Acquisition
- 2.5 Image Interpretation
- 2.6 Radiation Dosimetry

### **3 DOSAGE FORMS AND STRENGTHS**

### **4 CONTRAINDICATIONS**

### **5 WARNINGS AND PRECAUTIONS**

- 5.1 Risk for Misdiagnosis
- 5.2 Radiation Risks

### **6 ADVERSE REACTIONS**

### **7 DRUG INTERACTIONS**

### **8 USE IN SPECIFIC POPULATIONS**

- 8.1 Pregnancy
- 8.2 Lactation
- 8.4 Pediatric Use
- 8.5 Geriatric Use

### **10 OVERDOSAGE**

### **11 DESCRIPTION**

- 11.1 Chemical Characteristics
- 11.2 Physical Characteristics
- 11.3 External Radiation

### **12 CLINICAL PHARMACOLOGY**

- 12.1 Mechanism of Action
- 12.2 Pharmacodynamics
- 12.3 Pharmacokinetics

### **13 NONCLINICAL TOXICOLOGY**

- 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

### **14 CLINICAL STUDIES**

### **16 HOW SUPPLIED/STORAGE AND HANDLING**

### **17 PATIENT COUNSELING INFORMATION**

\* Sections or subsections omitted from the full prescribing information are not listed.

---

## **FULL PRESCRIBING INFORMATION**

### **1 INDICATIONS AND USAGE**

Gallium Ga 68 Gozetotide Injection is indicated for positron emission tomography (PET) of prostate-specific membrane antigen (PSMA) positive lesions in men with prostate cancer:

- with suspected metastasis who are candidates for initial definitive therapy.
- with suspected recurrence based on elevated serum prostate-specific antigen (PSA)

level.

## **2 DOSAGE AND ADMINISTRATION**

### **2.1 Radiation Safety - Drug Handling**

Handle Gallium Ga 68 Gozetotide Injection with appropriate safety measures to minimize radiation exposure [see *Warnings and Precautions (5.2)*]. Use waterproof gloves, effective radiation shielding, and other appropriate safety measures when preparing and handling Gallium Ga 68 Gozetotide Injection.

Radiopharmaceuticals should be used by or under the control of physicians who are qualified by specific training and experience in the safe use and handling of radionuclides, and whose experience and training have been approved by the appropriate governmental agency authorized to license the use of radionuclides.

### **2.2 Recommended Dosage and Administration Instructions**

#### Recommended Dosage

In adults, the recommended amount of radioactivity to be administered for PET is 111 MBq to 259 MBq (3 mCi to 7 mCi) administered as an intravenous bolus injection.

#### Administration

- Use aseptic technique and radiation shielding when withdrawing and administering Gallium Ga 68 Gozetotide Injection.
- Calculate the necessary volume to administer based on calibration time and required dose.
- Inspect Gallium Ga 68 Gozetotide Injection visually for particulate matter and discoloration before administration. Do not use the drug if the solution contains particulate matter or is discolored.
- Gallium Ga 68 Gozetotide Injection may be diluted with sterile 0.9% Sodium Chloride Injection, USP.
- Assay the final dose immediately before administration to the patient in a dose calibrator.
- After injection of Gallium Ga 68 Gozetotide Injection, administer an intravenous flush of sterile 0.9% Sodium Chloride Injection, USP to ensure full delivery of the dose.
- Dispose of any unused drug in a safe manner in compliance with applicable regulations.
- Unless contraindicated, a diuretic expected to act within the uptake time period may be administered at the time of radiotracer injection to potentially decrease artifact from radiotracer accumulation in the urinary bladder and ureters.

### **2.3 Patient Preparation Prior to PET Imaging**

Instruct patients to drink a sufficient amount of water to ensure adequate hydration prior to administration of Gallium Ga 68 Gozetotide Injection and to continue to drink and void frequently following administration to reduce radiation exposure, particularly during the first hour after administration [see *Warnings and Precautions (5.2)*].

### **2.4 Image Acquisition**

Position the patient supine with arms above the head. Begin PET scanning 50 to 100 minutes after the intravenous administration of Gallium Ga 68 Gozetotide Injection. Patients should void immediately prior to image acquisition and that image acquisition should begin at the proximal thighs and proceed cranially to the skull base or skull vertex. Adapt imaging technique according to the equipment used and patient characteristics in order to obtain the best image quality possible.

## 2.5 Image Interpretation

Gallium Ga 68 Gozetotide binds to prostate-specific membrane antigen (PSMA). Based on the intensity of the signals, PET images obtained using Gallium Ga 68 Gozetotide Injection indicate the presence of PSMA in tissues. Lesions should be considered suspicious if uptake is greater than physiologic uptake in that tissue or greater than adjacent background if no physiologic uptake is expected. Tumors that do not bear PSMA will not be visualized. Increased uptake in tumors is not specific for prostate cancer [see *Warnings and Precautions (5.1)*].

## 2.6 Radiation Dosimetry

Estimated radiation absorbed doses per injected activity for organs and tissues of adult male patients following an intravenous bolus of Gallium Ga 68 Gozetotide Injection are shown in Table 1.

The effective radiation dose resulting from the administration of 259 MBq (7 mCi) is about 4.4 mSv. The radiation doses for this administered dose to the critical organs, which are the kidneys, urinary bladder, and spleen, are 96.2 mGy, 25.4 mGy, and 16.8 mGy, respectively.

These radiation doses are for Gallium Ga 68 Gozetotide Injection alone. If CT or a transmission source are used for attenuation correction, the radiation dose will increase by an amount that varies by technique.

**Table 1: Estimated Radiation Absorbed Dose per Injected Activity in Selected Organs and Tissues of Adults after Intravenous Administration of Gallium Ga 68 Gozetotide Injection**

Organ	Absorbed dose (mGy/MBq)	
	Mean	SD
Adrenals	0.0156	0.0014
Brain	0.0104	0.0011
Breasts	0.0103	0.0011
Gallbladder	0.0157	0.0012
Lower Colon	0.0134	0.0009
Small Intestine	0.0140	0.0020
Stomach	0.0129	0.0008
Heart	0.0120	0.0009
Kidneys	0.3714	0.0922
Liver	0.0409	0.0076
Lungs	0.0111	0.0007
Muscle	0.0103	0.0003

Pancreas	0.0147	0.0009
Red Marrow	0.0114	0.0016
Skin	0.0091	0.0003
Spleen	0.0650	0.0180
Testes	0.0111	0.0006
Thymus	0.0105	0.0006
Thyroid	0.0104	0.0006
Urinary Bladder	0.0982	0.0286
Total Body	0.0143	0.0013
<b>Effective Dose (mSv/MBq)</b>	<b>0.0169</b>	<b>0.0015</b>

### 3 DOSAGE FORMS AND STRENGTHS

Injection: supplied as a clear, colorless solution in a multiple-dose vial containing 18.5 MBq/mL to 185 MBq/mL (0.5 mCi/mL to 5 mCi/mL) of gallium Ga 68 gozetotide in approximately 12 mL at calibration time.

### 4 CONTRAINDICATIONS

None

### 5 WARNINGS AND PRECAUTIONS

#### 5.1 Risk for Misdiagnosis

Image interpretation errors can occur with gallium Ga 68 gozetotide PET. A negative image does not rule out the presence of prostate cancer and a positive image does not confirm the presence of prostate cancer. The performance of Gallium Ga 68 Gozetotide Injection for imaging of biochemically recurrent prostate cancer seems to be affected by serum PSA levels and by site of disease [See *Clinical Studies (14)*]. The performance of Gallium Ga 68 Gozetotide Injection for imaging of metastatic pelvic lymph nodes prior to initial definitive therapy seems to be affected by Gleason score [See *Clinical Studies (14)*]. Gallium Ga 68 gozetotide uptake is not specific for prostate cancer and may occur with other types of cancer as well as non-malignant processes such as Paget's disease, fibrous dysplasia, and osteophytosis. Clinical correlation, which may include histopathological evaluation of the suspected prostate cancer site, is recommended.

#### 5.2 Radiation Risks

Gallium Ga 68 Gozetotide Injection contributes to a patient's overall long-term cumulative radiation exposure. Long-term cumulative radiation exposure is associated with an increased risk for cancer. Ensure safe handling to minimize radiation exposure to the patient and health care workers. Advise patients to hydrate before and after administration and to void frequently after administration [see *Dosage and Administration (2.1, 2.3)*].

## **6 ADVERSE REACTIONS**

### Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

The safety of Gallium Ga 68 Gozetotide Injection was evaluated in 960 patients, each receiving one dose of Gallium Ga 68 Gozetotide Injection. The average injected activity was  $188.7 \pm 40.7$  MBq ( $5.1 \pm 1.1$  mCi).

The most commonly reported adverse reactions were nausea, diarrhea, and dizziness, occurring at a rate of  $< 1\%$ .

## **7 DRUG INTERACTIONS**

### Androgen deprivation therapy and other therapies targeting the androgen pathway

Androgen deprivation therapy (ADT) and other therapies targeting the androgen pathway, such as androgen receptor antagonists, can result in changes in uptake of gallium Ga 68 gozetotide in prostate cancer. The effect of these therapies on performance of gallium Ga 68 gozetotide PET has not been established.

## **8 USE IN SPECIFIC POPULATIONS**

### **8.1 Pregnancy**

#### Risk Summary

Gallium Ga 68 Gozetotide Injection is not indicated for use in females. There are no available data with Gallium Ga 68 Gozetotide Injection use in pregnant women to evaluate for a drug-associated risk of major birth defects, miscarriage, or adverse maternal or fetal outcomes. All radiopharmaceuticals, including Gallium Ga 68 Gozetotide Injection, have the potential to cause fetal harm depending on the fetal stage of development and the magnitude of the radiation dose. Animal reproduction studies have not been conducted with gallium Ga 68 gozetotide.

### **8.2 Lactation**

#### Risk Summary

Gallium Ga 68 Gozetotide Injection is not indicated for use in females. There are no data on the presence of gallium Ga 68 gozetotide in human milk, the effect on the breastfed infant, or the effect on milk production.

### **8.4 Pediatric Use**

The safety and effectiveness of Gallium Ga 68 Gozetotide Injection have not been established in pediatric patients.

### **8.5 Geriatric Use**

The efficacy of Gallium Ga 68 Gozetotide Injection in geriatric patients with prostate

cancer is based on data from two prospective studies [see *Clinical Studies (14)*]. Of the total number of subjects in these studies of Gallium Ga 68 Gozetotide Injection, 691 of 960 (72%) were 65 years of age and older (72%), While 195 (20%) were 75 years of age and older.

The efficacy and safety profiles of Gallium Ga 68 Gozetotide Injection appear similar in younger adult and geriatric patients with prostate cancer, although the number of younger adult patients in the trials was not large enough to allow definitive comparison.

## **10 OVERDOSAGE**

In the event of an overdose of Gallium Ga 68 Gozetotide Injection, reduce the radiation absorbed dose to the patient where possible by increasing the elimination of the drug from the body using hydration and frequent bladder voiding. A diuretic might also be considered. If possible, an estimate of the radiation effective dose given to the patient should be made.

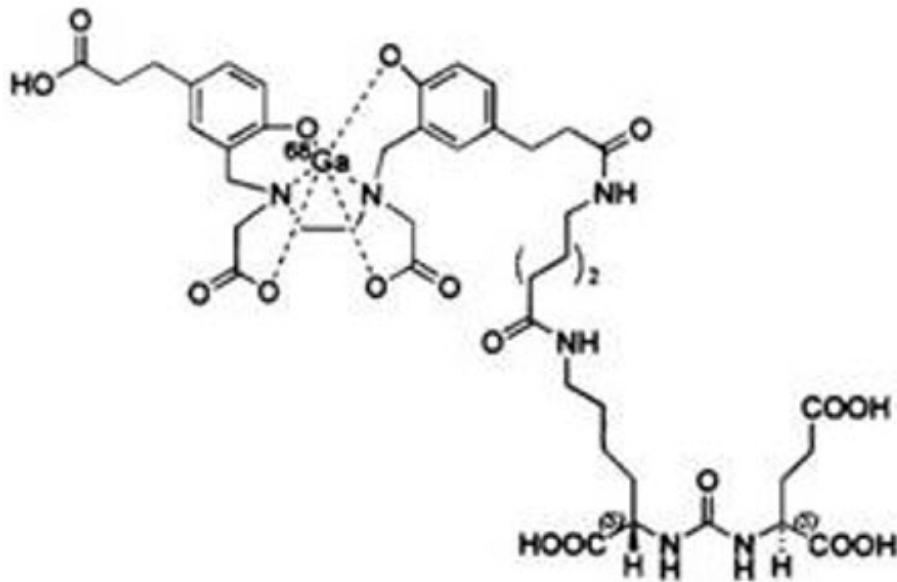
## **11 DESCRIPTION**

### **11.1 Chemical Characteristics**

Gallium Ga 68 Gozetotide Injection is a radioactive diagnostic agent for intravenous administration. It contains 5 mcg gozetotide, 18.5 MBq/mL to 185 MBq/mL (0.5 mCi/mL to 5 mCi/mL) of gallium Ga 68 gozetotide at calibration time, 1 mL ethanol, 1 mL water for injection, and 10 mL of 0.9% sodium chloride solution (approximately 12 mL total volume). Gallium Ga 68 Gozetotide Injection is provided as a sterile, pyrogen free, clear, colorless solution for intravenous use, with a pH between 4.0 and 7.0. Gozetotide is also known as PSMA-11.

Gallium Ga 68 gozetotide is a urea based peptidomimetic that has a covalently bound chelator (HBED-CC). The peptide has the amino acid sequence Glu-NH-CO-NH-Lys(Ahx)-HBED-CC. Gallium Ga 68 gozetotide has a molecular weight of 1011.91 g/mol and its chemical structure is shown in Figure 1.

### **Figure 1: Chemical Structure of Gallium Ga 68 Gozetotide**



## 11.2 Physical Characteristics

Gallium-68 (Ga 68) decays with a half-life of 68 minutes to stable zinc-68. Table 2 and Table 3 display the principal radiation emission data and physical decay of Ga 68.

**Table 2: Principal Radiation Emission Data (>1%) for Gallium Ga 68**

Radiation/ Emission	% Disintegration	Mean Energy (MeV)
beta+	88%	0.8360
beta+	1.1%	0.3526
gamma	178%	0.5110
gamma	3.0%	1.0770
X-ray	2.8%	0.0086
X-ray	1.4%	0.0086

**Table 3: Physical Decay Chart for Gallium Ga 68**

Minutes	Fraction Remaining
0	1
15	0.858
30	0.736
60	0.541
90	0.398
120	0.293
180	0.158
240	0.086
360	0.025



### 11.3 External Radiation

Table 4 displays the radiation attenuation by lead shielding of Ga 68.

**Table 4: Radiation Attenuation of 511 keV Photons by Lead (Pb) Shielding**

Shield Thickness (Pb) mm	Coefficient of Attenuation
6	0.5
12	0.25
17	0.1
34	0.01
51	0.001

## 12 CLINICAL PHARMACOLOGY

### 12.1 Mechanism of Action

Gallium Ga 68 gozetotide binds to prostate-specific membrane antigen (PSMA). It binds to cells that express PSMA, including malignant prostate cancer cells, which usually overexpress PSMA. Gallium-68 (Ga 68) is a  $\beta^+$  emitting radionuclide that allows positron emission tomography (PET).

### 12.2 Pharmacodynamics

The relationship between gallium Ga 68 gozetotide plasma concentrations and successful imaging was not explored in clinical trials.

### 12.3 Pharmacokinetics

#### Distribution

Intravenously injected gallium Ga 68 gozetotide is cleared from the blood and is accumulated preferentially in the liver (15%), kidneys (7%), spleen (2%), and salivary glands (0.5%). Gallium Ga 68 gozetotide uptake is also seen in the adrenals and prostate. There is no uptake in the cerebral cortex or in the heart, and usually lung uptake is low.

#### Elimination

A total of 14% of the injected dose is excreted in urine in the first 2 hours post-injection.

## 13 NONCLINICAL TOXICOLOGY

### 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

No long-term animal studies were performed to evaluate the carcinogenicity potential of gallium Ga 68 gozetotide.

## 14 CLINICAL STUDIES

The safety and efficacy of Gallium Ga 68 Gozetotide Injection were established in two prospective, open-label studies, PSMA-PreRP (NCT03368547 and NCT02919111) and PSMA-BCR (NCT02940262 and NCT02918357) in men with prostate cancer.

### PSMA-PreRP

This two-center study enrolled 325 patients with biopsy-proven prostate cancer who were considered candidates for prostatectomy and pelvic lymph node dissection. All enrolled patients met at least one of the following criteria: serum prostate-specific antigen (PSA) of at least 10 ng/mL, tumor stage cT2b or greater, or Gleason score greater than 6. Each patient received a single gallium Ga 68 gozetotide PET/CT or PET/MR from mid-thigh to skull base.

A total of 123 patients (38%) proceeded to standard-of-care prostatectomy and template pelvic lymph node dissection and had sufficient histopathology data for evaluation (evaluative patients). Three members of a pool of six central readers independently interpreted each PET scan for the presence of abnormal gallium Ga 68 gozetotide uptake in pelvic lymph nodes located in the common iliac, external iliac, internal iliac, and obturator subregions bilaterally as well as in any other pelvic location. The readers were blinded to all clinical information except for the history of prostate cancer prior to definitive treatment. Extrapelvic sites and the prostate gland itself were not analyzed in this study. For each patient, gallium Ga 68 gozetotide PET results and reference standard histopathology obtained from dissected pelvic lymph nodes were compared by region (left hemipelvis, right hemipelvis, and other).

For the 123 evaluative patients, the mean age was 65 years (range 45 to 76 years), and 89% were white. The median serum PSA was 11.8 ng/mL. The summed Gleason score was 7 for 44%, 8 for 20%, and 9 for 31% of the patients, with the remainder of the patients having Gleason scores of 6 or 10.

Table 5 compares majority PET reads to pelvic lymph node histopathology results at the patient-level with region matching, such that at least one true positive region defines a true positive patient. As shown, approximately 24% of subjects studied were found to have pelvic nodal metastases based on histopathology (95% confidence interval: 17%, 32%).

**Table 5: Patient-Level Performance of Gallium Ga 68 Gozetotide PET for Detection of Pelvic Lymph Node Metastasis \* in the PSMA-PreRP Study (n=123)**

		Histopathology		Predictive value † (95% CI)
		Positive	Negative	
PET scan	Positive	14	9	PPV 61% (41%, 81%)
	Negative	16	84	NPV 84% (79%, 91%)
<b>Total</b>		30	93	
<b>Diagnostic</b>		Sensitivity	Specificity	

<b>performance (95% CI)</b>	<b>SENSITIVITY</b> 47% (29%, 65%)	<b>SPECIFICITY</b> 90% (84%, 96%)	
---------------------------------	--------------------------------------	--------------------------------------	--

\* with region matching where at least one true positive region defines a true positive patient  
† PPV: positive predictive value, NPV: negative predictive value

Among the pool of six readers, sensitivity ranged from 36% to 60%, specificity from 83% to 96%, positive predictive value from 38% to 80%, and negative predictive value from 80% to 88%.

In an exploratory subgroup analysis based on summed Gleason score, there was a numerical trend toward more true positives in patients with Gleason score of 8 or higher compared to those with Gleason score of 7 or lower.

An exploratory analysis was performed to estimate the sensitivity and specificity for pelvic nodal metastasis detection in all scanned patients, including the patients who were lacking histopathology reference standard. An imputation method was used based on patient-specific factors. This exploratory analysis resulted in an imputed sensitivity of 47%, with a 95% confidence interval ranging from 38% to 55%, and an imputed specificity of 74%, with a 95% confidence interval ranging from 68% to 80% for all patients imaged with gallium Ga 68 gozetotide PET.

### PSMA-BCR

This two-center study enrolled 635 patients with biochemical evidence of recurrent prostate cancer after definitive therapy, defined by serum PSA of >0.2 ng/mL more than 6 weeks after prostatectomy or by an increase in serum PSA of at least 2 ng/mL above nadir after definitive radiotherapy. All patients received a single gallium Ga 68 gozetotide PET/CT or PET/MR from mid-thigh to skull base. Three members of a pool of nine independent central readers evaluated each scan for the presence and regional location (20 subregions grouped into four regions) of abnormal gallium Ga 68 gozetotide uptake suggestive of recurrent prostate cancer. The readers were blinded to all clinical information other than type of primary therapy and most recent serum PSA level.

A total of 469 patients (74%) had at least one positive region detected by gallium Ga 68 gozetotide PET majority read. The distribution of gallium Ga 68 gozetotide PET positive regions was 34% bone, 25% prostate bed, 25% pelvic lymph node, and 17% extrapelvic soft tissue. Two hundred and ten patients had composite reference standard information collected in a PET positive region (evaluative patients), consisting of at least one of the following: histopathology, imaging (bone scintigraphy, CT, or MRI) acquired at baseline or within 12 months after gallium Ga 68 gozetotide PET, or serial serum PSA. Composite reference standard information for gallium Ga 68 gozetotide PET negative regions was not systematically collected in this study.

In the 210 evaluable patients, the mean age was 70 years (range 49 to 88 years) and 82% were 65 years of age or older. White patients made up 90% of the group. The median serum PSA was 3.6 ng/mL. Prior treatment included radical prostatectomy in 64% and radiotherapy in 73%.

Of the 210 evaluable patients, 192 patients (91%) were found to be true positive in one or more regions against the composite reference standard (95% confidence interval: 88%, 95%). Among the pool of nine readers used in the study, the proportion of patients who were true positive in one or more regions ranged from 82% to 97%. The prostate bed had the lowest proportion of true positive results at the region-level (76%

versus 96% for non-prostate regions).

An exploratory analysis was also performed in which gallium Ga 68 gozetotide PET positive patients who lacked reference standard information were imputed using an estimated likelihood that at least one location-matched PET positive lesion was reference standard positive based on patient-specific factors. In this exploratory analysis, 340 of 475 patients (72%) were imputed as true positive in one or more regions (95% confidence interval: 68%, 76%).

In another exploratory analysis using the same imputation approach for PET positive patients who lacked reference standard information, 340 of 635 patients (54%) were correctly detected as true positive (95% confidence interval: 50%, 57%) among all BCR patients who received a PET scan, whether it was read as positive or negative.

The likelihood of identifying a gallium Ga 68 gozetotide PET positive lesion in this study generally increased with higher serum PSA level. Table 6 shows the patient-level gallium Ga 68 gozetotide PET results stratified by serum PSA level. The mean time between PSA measurement and PET scan was 40 days with a range of 0 to 367 days. Percent PET positivity was calculated as the proportion of patients with a positive gallium Ga 68 gozetotide PET out of all patients scanned. Percent PET positivity includes patients determined to be either true positive or false positive as well as those in whom such determination was not made due to the absence of composite reference standard data.

**Table 6: Patient-Level Gallium Ga 68 Gozetotide PET Results and Percent PET Positivity Stratified by Serum PSA Level in the PSMA-BCR Study (n=628) \***

PSA (ng/mL)	PET positive patients				PET negative patients	Percent PET positivity † (95% CI)
	Total	TP ‡	FP	Without reference standard		
		With reference standard				
<0.5	48	11	1	36	87	36% (27%, 44%)
		12				
0.5 and <1	44	15	3	26	35	56% (45%, 67%)
		18				
1 and <2	71	29	1	41	15	83% (75%, 91%)
		30				
2	299	137	13	149	29	91% (88%, 94%)
		150				
Total	462	192	18	252	166	74% (70%, 77%)
		210				

\* 7 patients were excluded from this table due to protocol deviations

† Percent PET positivity = PET positive patients/total patients scanned

‡ TP: true positive, FP: false positive

## 16 HOW SUPPLIED/STORAGE AND HANDLING

### How Supplied

Gallium Ga 68 Gozetotide Injection (NDC 76394-2642-3) is a clear, colorless solution,

supplied in a capped glass vial containing 18.5 MBq/mL to 185 MBq/mL (0.5 mCi/mL to 5 mCi/mL) of gallium 68 gozetotide at calibration time, in approximately 12 mL. The contents of each vial are sterile, pyrogen-free and preservative-free. The expiration date and time are provided on the container label. Use Gallium Ga 68 Gozetotide Injection within 3 hours of calibration time.

### Storage and Handling

Store Gallium Ga 68 Gozetotide Injection upright in a lead shielded container at 25°C (77°F); excursions are permitted from 15°C to 30°C (59°F to 86°F). Store Gallium Ga 68 Gozetotide Injection within the original container in radiation shielding.

Receipt, transfer, handling, possession, or use of this product is subject to the radioactive material regulations and licensing requirements of the U.S. Nuclear Regulatory Commission, Agreement States, or Licensing States as appropriate.

## **17 PATIENT COUNSELING INFORMATION**

### Adequate Hydration

Instruct patients to drink a sufficient amount of water to ensure adequate hydration before their PET study and urge them to drink and urinate as often as possible during the first hours following the administration of Gallium Ga 68 Gozetotide Injection, in order to reduce radiation exposure [see *Dosage and Administration (2.3) and Warnings and Precautions (5.2)*].

### **Manufactured and Distributed by:**

University of California, Los Angeles  
UCLA Biomedical Cyclotron Facility  
780 Westwood Plaza  
Los Angeles, CA 90095  
(310) 794-7638

## **PRINCIPAL DISPLAY PANEL - 12 mL Vial Label**

NDC # 76394-2642-3  
Gallium Ga 68 Gozetotide Injection  
Multiple-Dose Vial

18.5 MBq/mL to 185 MBq/mL (0.5 mCi/mL to 5 mCi/mL) @ EOS\*

Activity @EOS\*: Total \_\_\_ MBq ( \_\_\_ mCi) Volume \_\_\_ mL

Concentration: \_\_\_ MBq/mL ( \_\_\_ mCi/mL)

Expiration Date/Time: \_\_\_\_\_, \_\_\_\_\_ AM/PM

Sterile, Non-pyrogenic

Calibration (EOS\*) Time: \_\_\_\_\_ AM/PM

Calibration Date: \_\_\_\_\_

Each mL contains 18.5 MBq to 185 MBq (0.5 mCi to 5 mCi) of gallium Ga 68 gozetotide @ EOS\* and 8.3 mg of sodium chloride.

Do not use if cloudy or if it contains particulate matter.

Recommended Dosage: See Prescribing Information.

\*EOS = End of synthesis.

CAUTION: RADIOACTIVE MATERIAL

Diagnostic – For Intravenous Use Only.

Lot #: \_\_\_\_\_

(Expires 3 hours after EOS\*)

Store at 20° to 25°C (68° to 77°F);

excursions permitted to 15° to 30°C (59° to 86°F).

Store upright in a shielded container.

68Ga Half-life = 68 minutes.

Calculate correct dosage from date and time of calibration.

Rx ONLY

Manufactured by: UCLA Biomedical Cyclotron, Los Angeles, CA 90095

**NDC # 76394-2642-3 Gallium Ga 68 Gozetotide Injection Multiple-Dose Vial**

**18.5 MBq/mL to 185 MBq/mL (0.5 mCi/mL to 5 mCi/mL) @ EOS\***

Activity @EOS\*: Total \_\_\_\_\_ MBq ( \_\_\_\_\_ mCi) Volume \_\_\_\_\_ mL

Concentration: \_\_\_\_\_ MBq/mL ( \_\_\_\_\_ mCi/mL)

Expiration Date/Time: \_\_\_\_\_, \_\_\_\_\_ AM/PM

Sterile, Non-pyrogenic

Calibration (EOS\*) Time: \_\_\_\_\_ AM/PM

Calibration Date: \_\_\_\_\_

Each mL contains 18.5 MBq to 185 MBq (0.5 mCi to 5 mCi) of gallium Ga 68 gozetotide @ EOS\* and 8.3 mg of sodium chloride.

Do not use if cloudy or if it contains particulate matter.

Recommended Dosage: See Prescribing Information.

\*EOS = End of synthesis.

CAUTION: RADIOACTIVE MATERIAL



**Diagnostic – For Intravenous Use Only.**

Lot #: \_\_\_\_\_

(Expires 3 hours after EOS\*)

Store at 20° to 25°C (68° to 77°F); excursions permitted 15° to 30°C (59° to 86°F).

Store upright in a shielded container.

68Ga Half-life = 68 minutes.

Calculate correct dosage from date and time of calibration.

**Rx ONLY**

**Manufactured by: UCLA Biomedical Cyclotron, Los Angeles, CA 90095**

## GALLIUM GA-68 PSMA-11

gallium ga-68 gozetotide injection, solution

### Product Information

<b>Product Type</b>	HUMAN PRESCRIPTION DRUG	<b>Item Code (Source)</b>	NDC:76394-2642
<b>Route of Administration</b>	INTRAVENOUS		

### Active Ingredient/Active Moiety

Ingredient Name		Basis of Strength	Strength	
GALLIUM GA-68 GOZETOTIDE (UNII: ZJ0EKR6M10) (GALLIUM GA-68 GOZETOTIDE - UNII:ZJ0EKR6M10)		GALLIUM GA-68 GOZETOTIDE	5 mCi in 1 mL	
<b>Inactive Ingredients</b>				
Ingredient Name		Strength		
ALCOHOL (UNII: 3K9958V90M)				
SODIUM CHLORIDE (UNII: 451W47IQ8X)				
<b>Packaging</b>				
#	Item Code	Package Description	Marketing Start Date	Marketing End Date
1	NDC:76394-2642-3	12 mL in 1 VIAL, MULTI-DOSE; Type 0: Not a Combination Product	12/09/2020	
<b>Marketing Information</b>				
Marketing Category	Application Number or Monograph Citation	Marketing Start Date	Marketing End Date	
NDA	NDA212642	12/09/2020		

**Labeler** - UCLA Biomedical Cyclotron (967798120)

### Establishment

Name	Address	ID/FEI	Business Operations
UCLA Biomedical Cyclotron		967798120	positron emission tomography drug production(76394-2642)

Revised: 12/2022

UCLA Biomedical Cyclotron