# Gemtabine®

## Gemcitabine

**FORMS AND PRESENTATION**
Gemtabine® 200: Sterile lyophilized powder for IV infusion, box of 1 vial, 200mg.
Gemtabine® 1000: Sterile lyophilized powder for IV infusion, box of 1 vial, 1000mg.
**COMPOSITION**
Gemtabine® 200: Each vial contains: Gemcitabine Hydrochloride equivalent to Gemcitabine 200 mg.
Gemtabine® 1000: Each vial contains: Gemcitabine Hydrochloride equivalent to Gemcitabine 1000 mg.
Excipients: mannitol, sodium acetate, sodium hydroxide, hydrochloric acid.
**PHARMACOLOGICAL PROPERTIES**
***Pharmacodynamic properties***
Pharmacotherapeutic group: Pyrimidine analogues. ATC code: L01BC05
Cellular metabolism and mechanism of action: Gemcitabine (dFdC), which is a pyrimidine antimetabolite, is metabolised intracellularly by nucleoside kinase to the active diphosphate (dFdCDP) and triphosphate (dFdCTP) nucleosides. The cytotoxic effect of gemcitabine is due to inhibition of DNA synthesis by two mechanisms of action by dFdCDP and dFdCTP. First, dFdCDP inhibits ribonucleotide reductase, which is uniquely responsible for catalysing the reactions that produce deoxynucleoside triphosphates (dCTP) for DNA synthesis. Inhibition of this enzyme by dFdCDP reduces the concentration of deoxynucleosides in general and, in particular, dCTP. Second, dFdCTP competes with dCTP for incorporation into DNA (self-potentiation).
Likewise, a small amount of gemcitabine may also be incorporated into RNA. Thus, the reduced intracellular concentration of dCTP potentiates the incorporation of dFdCTP into DNA. DNA polymerase epsilon lacks the ability to eliminate gemcitabine and to repair the growing DNA strands. After gemcitabine is incorporated into DNA, one additional nucleotide is added to the growing DNA strands. After this addition there is essentially a complete inhibition in further DNA synthesis (masked chain termination). After incorporation into DNA, gemcitabine appears to induce the programmed cell death process known as apoptosis.
***Pharmacokinetic properties***
The pharmacokinetics of gemcitabine have been examined in 353 patients in seven studies. The 121 women and 232 men ranged in age from 29 to 79 years. Of these patients, approximately 45% had non-small cell lung cancer and 35% were diagnosed with pancreatic cancer. The following pharmacokinetic parameters were obtained for doses ranging from 500 to 2,592 mg/m2 that were infused from 0.4 to 1.2 hours.
Peak plasma concentrations (obtained within 5 minutes of the end of the infusion) were 3.2 to 45.5 µg/ml. Plasma concentrations of the parent compound following a dose of 1,000 mg/m2/30 minutes are greater than 5 µg/ml for approximately 30 minutes after the end of the infusion, and greater than 0.4 µg/ml for an additional hour.
Distribution
The volume of distribution of the central compartment was 12.4 l/m2 for women and 17.5 l/m2 for men (inter-individual variability was 91.9%). The volume of distribution of the peripheral compartment was 47.4 l/m2. The volume of the peripheral compartment was not sensitive to gender.
The plasma protein binding was considered to be negligible.
Half-life: This ranged from 42 to 94 minutes depending on age and gender. For the recommended dosing schedule, gemcitabine elimination should be virtually complete within 5 to 11 hours of the start of the infusion. Gemcitabine does not accumulate when administered once weekly.
Metabolism
Gemcitabine is rapidly metabolized by cytidine deaminase in the liver, kidney, blood and other tissues. Intracellular metabolism of gemcitabine produces the gemcitabine mono, di and triphosphates (dFdCMP, dFdCDP and dFdCTP) of which dFdCDP and dFdCTP are considered active. These intracellular metabolites have not been detected in plasma or urine. The primary metabolite, 2'-deoxy-2', 2'-difluorouridine (dFdU), is not active and is found in plasma and urine.
Excretion
Systemic clearance ranged from 29.2 l/hr/m2 to 92.2 l/hr/m2 depending on gender and age (inter-individual variability was 52.2%). Clearance for women is approximately 25% lower than the values for men. Although rapid, clearance for both men and women appears to decrease with age. For the recommended gemcitabine dose of 1,000 mg/m2 given as a 30-minute infusion, lower clearance values for women and men should not necessitate a decrease in the gemcitabine dose.
Urinary excretion: Less than 10% is excreted as unchanged drug.
Renal clearance was 2 to 7 l/hr/m2.
During the week following administration, 92 to 98% of the dose of gemcitabine administered is recovered, 99% in the urine, mainly in the form of dFdU and 1% of the dose is excreted in faeces.
**INDICATIONS**
• Gemcitabine is indicated for the treatment of locally advanced or metastatic bladder cancer in combination with cisplatin.
• Gemcitabine is indicated for treatment of patients with locally advanced or metastatic adenocarcinoma of the pancreas.
• Gemcitabine, in combination with cisplatin, is indicated as first-line treatment of patients with locally advanced or metastatic non-small cell lung cancer (NSCLC). Gemcitabine monotherapy can be considered in elderly patients or those with performance status 2.
• Gemcitabine is indicated for the treatment of patients with locally advanced or metastatic epithelial ovarian carcinoma, in combination with carboplatin, in patients with relapsed disease following a recurrence-free interval of at least 6 months after platinum-based, first-line therapy.
• Gemcitabine, in combination with paclitaxel, is indicated for the treatment of patients with unresectable, locally recurrent or metastatic breast cancer who have relapsed following adjuvant/neoadjuvant chemotherapy. Prior chemotherapy should have included an anthracycline unless clinically contraindicated.
**CONTRAINDICATIONS**
• Hypersensitivity to the active substance or to any of the excipients.
• Breast-feeding.
**PRECAUTIONS**
Prolongation of the infusion time and increased dosing frequency have been shown to increase toxicity.
Haematological toxicity
Gemcitabine can suppress bone marrow function as manifested by leucopenia, thrombocytopenia and anaemia.
Patients receiving gemcitabine should be monitored prior to each dose for platelet, leucocyte and granulocyte counts. Suspension or modification of therapy should be considered when drug-induced bone marrow depression is detected. However, myelosuppression is short-lived and usually does not result in dose reduction and rarely in discontinuation.
Peripheral blood counts may continue to deteriorate after gemcitabine administration has been stopped. In patients with impaired bone marrow function, the treatment should be started with caution. As with other cytotoxic treatments, the risk of cumulative bone-marrow suppression must be considered when gemcitabine treatment is given together with other chemotherapy.
Hepatic and renal impairment
Gemcitabine should be used with caution in patients with hepatic or renal function impairment.
Administration of gemcitabine in patients with concurrent liver metastases or a pre-existing medical history of hepatitis, alcoholism or liver cirrhosis may lead to exacerbation of the underlying hepatic impairment.
Laboratory evaluation of renal and hepatic function (including virological tests) should be performed periodically.
Concomitant radiotherapy
Concomitant radiotherapy (given together or ≤7 days apart): Toxicity has been reported.
Live vaccinations
Yellow fever vaccine and other live attenuated vaccines are not recommended in patients treated with gemcitabine.
Posterior reversible encephalopathy syndrome
Reports of posterior reversible encephalopathy syndrome (PRES) with potentially severe consequences have been reported in patients receiving gemcitabine as single agent or in combination with other chemotherapeutic agents. Acute hypertension and seizure activity were reported in most gemcitabine patients experiencing PRES, but other symptoms such as headache, lethargy, confusion and blindness could also be present. Diagnosis is optimally confirmed by magnetic resonance imaging (MRI). PRES was typically reversible with appropriate supportive measures. Gemcitabine should be permanently discontinued and supportive measures implemented, including blood pressure control and anti-seizure therapy, if PRES develops during therapy.
Cardiovascular
Due to the risk of cardiac and/or vascular disorders with gemcitabine, particular caution must be exercised with patients presenting a history of cardiovascular events.
Capillary leak syndrome
Capillary leak syndrome has been reported in patients receiving gemcitabine as single agent or in combination with other chemotherapeutic agents. The condition is usually treatable if recognised early and managed appropriately, but fatal cases have been reported. The condition involves systemic capillary hyperpermeability during which fluid and proteins from the intravascular space leak into the interstitium. The clinical features include generalised oedema, weight gain, hypoalbuminaemia, severe hypotension, acute renal impairment and pulmonary oedema. Gemcitabine should be discontinued and supportive measures implemented if capillary leak syndrome develops during therapy. Capillary leak syndrome can occur in later cycles and has been associated in the literature with adult respiratory distress syndrome.
Pulmonary
Pulmonary effects, sometimes severe (such as pulmonary oedema, interstitial pneumonitis or adult respiratory distress syndrome (ARDS)) have been reported in association with gemcitabine therapy. If such effects develop, consideration should be made to discontinuing gemcitabine therapy. Early use of supportive care measure may help ameliorate the condition.
Renal
Haemolytic uraemic syndrome
Clinical findings consistent with the haemolytic uraemic syndrome (HUS) were rarely reported (post-marketing data) in patients receiving gemcitabine. HUS is a potentially life-threatening disorder. Gemcitabine should be discontinued at the first signs of any evidence of microangiopathic haemolytic anaemia, such as rapidly falling haemoglobin with concomitant thrombocytopenia, elevation of serum bilirubin, serum creatinine, blood urea nitrogen, or LDH. Renal failure may not be reversible with discontinuation of therapy and dialysis may be required.
*Effects on ability to drive and use machines*
Gemcitabine has been reported to cause mild to moderate somnolence, especially in combination with alcohol consumption. Patients should be cautioned against driving or operating machinery until it is established that they do not become somnolent.
**FERTILITY, PREGNANCY AND LACTATION**
Pregnancy
Based on results from animal studies and the mechanism of action of gemcitabine, this substance should not be used during pregnancy unless clearly necessary. Women should be advised not to become pregnant during treatment with gemcitabine and to warn their attending physician immediately, should this occur after all.
Breast-feeding
Breast-feeding must be discontinued during gemcitabine therapy.
Fertility
Men being treated with gemcitabine are advised not to father a child during and up to 6 months after treatment, and to seek further advice regarding cryoconservation of sperm prior to treatment because of the possibility of infertility due to therapy with gemcitabine.
**DRUG INTERACTIONS**
Radiotherapy
Concurrent (given together or ≤7 days apart) - Toxicity associated with this multimodality therapy is dependent on many different factors, including dose of gemcitabine, frequency of gemcitabine administration, dose of radiation, radiotherapy planning technique, the target tissue, and target volume. Pre-clinical and clinical studies have shown that gemcitabine has radiosensitising activity. In a single trial, where gemcitabine at a dose of 1,000 mg/m2 was administered concurrently for up to 6 consecutive weeks with therapeutic thoracic radiation to patients with non-small cell lung cancer, significant toxicity in the form of severe, and potentially life-threatening mucositis, especially oesophagitis, and pneumonitis was observed, particularly in patients receiving large volumes of radiotherapy [median treatment volumes 4,795 cm3]. Studies done subsequently have suggested that it is feasible to administer gemcitabine at lower doses with concurrent radiotherapy with predictable toxicity, such as a phase II study in non-small cell lung cancer, where thoracic radiation doses of 66 Gy were applied concomitantly with an administration with gemcitabine (600 mg/m2, four times) and cisplatin (80 mg/m2, twice) during 6 weeks. The optimum regimen for safe administration of gemcitabine with therapeutic doses of radiation has not yet been determined in all tumour types.
Non-concurrent (given >7 days apart) - Analysis of the data does not indicate any enhanced toxicity when gemcitabine is administered more than 7 days before or after radiation, other than radiation recall. Data suggest that gemcitabine can be started after the acute effects of radiation have resolved or at least one week after radiation.
Radiation injury has been reported on targeted tissues (e.g., oesophagitis, colitis, and pneumonitis) in association with both concurrent and non-concurrent use of gemcitabine.
Others
Yellow fever and other live attenuated vaccines are not recommended due to the risk of systemic, possibly fatal, disease, particularly in immunosuppressed patients.
**ADVERSE EFFECTS**
The most commonly reported adverse drug reactions associated with gemcitabine treatment include: nausea with or without vomiting, raised liver transaminases (AST/ALT) and alkaline phosphatase, reported in approximately 60% of patients; proteinuria and haematuria reported in approximately 50% of patients; dyspnoea reported in 10-40% of patients (highest incidence in lung cancer patients); allergic skin rashes occur in approximately 25% of patients and are associated with itching in 10% of patients.
The frequency and severity of the adverse reactions are affected by the dose, infusion rate and intervals between doses. Dose-limiting adverse reactions are reductions in thrombocyte, leucocyte and granulocyte counts.
Frequencies are defined as: Very common (≥1/10), Common (≥1/100 to <1/10), Uncommon (≥1/1,000 to <1/100), Rare (≥1/10,000 to <1/1,000), Very Rare (<1/10,000).
The following undesirable effects and frequencies are based on data from clinical trials. Within each frequency grouping, undesirable effects are presented in order of decreasing seriousness.
• Blood and lymphatic system disorders: Very common: Leucopenia; Thrombocytopenia; Anaemia. Common: Febrile neutropenia. Very rare: Thrombocytosis.
• Immune system disorders: Very Rare: Anaphylactoid reaction.
• Metabolism and nutrition disorders: Common: Anorexia
• Nervous system disorders: Common: Headache, Insomnia, Somnolence; Uncommon: Cerebrovascular accident;Very rare: Posterior reversible encephalopathy syndrome.
• Cardiac disorders: Uncommon: Arrhythmias, predominantly supraventricular in nature, Heart failure; Rare: Myocardial infarct.
• Vascular disorders: Rare: Clinical signs of peripheral vasculitis and gangrene, Hypotension; Very rare: Capillary leak syndrome.
• Respiratory, thoracic and mediastinal disorders: Very common: Dyspnoea -usually mild and passes rapidly without treatment; Common: Cough, Rhinitis; Uncommon: Interstitial pneumonitis, Bronchospasm - usually mild and transient but may require parenteral treatment; Rare: Pulmonary oedema, Adult respiratory distress syndrome.
• Gastrointestinal disorders: Very common: Vomiting, Nausea; Common: Diarrhoea, Stomatitis and ulceration of the mouth, Constipation; Very rare: Ischaemic colitis.
• Hepatobiliary disorders: Very common: Elevation of liver transaminases (AST and ALT) and alkaline phosphatase; Common: Increased bilirubin; Uncommon: Serious hepatotoxicity, including liver failure and death; Rare: Increased gamma-glutamyl transferase (GGT).
• Skin and subcutaneous tissue disorders: Very common: Allergic skin rash frequently associated with pruritus, Alopecia; Common: Itching, Sweating; Rare: Severe skin reactions, including desquamation and bullous skin eruptions, Ulceration, Vesicle and sore formation, Scaling; Very rare: Toxic epidermal, necrolysis, Stevens-Johnson Syndrome.

P1013/6

• Musculoskeletal and connective tissue disorders: Common: Back pain, Myalgia.
• Renal and urinary disorders: Very common: Haematuria, Mild proteinuria; Uncommon: Renal failure, Haemolytic uraemic syndrome.
• General disorders and administration site conditions: Very common: Influenza-like symptoms - the most common symptoms are fever, headache, chills, myalgia, asthenia and anorexia. Cough, rhinitis, malaise, perspiration and sleeping difficulties have also been reported. Oedema/peripheral oedema-including facial oedema. Oedema is usually reversible after stopping treatment. Common: Fever, Asthenia, Chills. Rare: Injection site reactions - mainly mild in nature.
• Injury, poisoning, and procedural complications: Rare: Radiation toxicity, Radiation recall.

**DOSAGE AND ADMINISTRATION**
Gemcitabine should only be prescribed by a physician qualified in the use of anti-cancer chemotherapy.
Recommended posology:
Bladder cancer
Combination use
The recommended dose for gemcitabine is 1,000 mg/m2, given by 30-minute infusion. The dose should be given on Days 1, 8 and 15 of each 28-day cycle in combination with cisplatin. Cisplatin is given at a recommended dose of 70 mg/m2 on Day 1 following gemcitabine or Day 2 of each 28-day cycle. This 4-week cycle is then repeated. Dosage reduction with each cycle or within a cycle may be applied based upon the grade of toxicity experienced by the patient.
Pancreatic cancer
The recommended dose of gemcitabine is 1,000 mg/m2, given by 30-minute intravenous infusion. This should be repeated once weekly for up to 7 weeks followed by a week of rest. Subsequent cycles should consist of injections once weekly for 3 consecutive weeks out of every 4 weeks. Dosage reduction with each cycle or within a cycle may be applied based upon the grade of toxicity experienced by the patient.
Non-small cell lung cancer
Monotherapy
The recommended dose of gemcitabine is 1,000 mg/m2, given by 30-minute intravenous infusion. This should be repeated once weekly for 3 weeks, followed by a 1-week rest period. This 4-week cycle is then repeated. Dosage reduction with each cycle or within a cycle may be applied based upon the grade of toxicity experienced by the patient.
Combination use
The recommended dose for gemcitabine is 1,250 mg/m2 body surface area given as a 30-minute intravenous infusion on Days 1 and 8 of the treatment cycle (21 days). Dosage reduction with each cycle or within a cycle may be applied based upon the grade of toxicity experienced by the patient.
Cisplatin has been used at doses between 75-100 mg/m2 once every 3 weeks.
Breast cancer
Combination use
Gemcitabine, in combination with paclitaxel, is recommended using paclitaxel (175 mg/m2) administered on Day 1 over approximately 3 hours as an intravenous infusion, followed by gemcitabine (1,250 mg/m2) as a 30-minute intravenous infusion on Days 1 and 8 of each 21-day cycle. Dose reduction with each cycle or within a cycle may be applied based upon the grade of toxicity experienced by the patient. Patients should have an absolute granulocyte count of at least 1,500 (x $10^6$/l) prior to initiation of gemcitabine + paclitaxel combination.
Ovarian cancer
Combination use
Gemcitabine, in combination with carboplatin, is recommended using gemcitabine 1,000 mg/m2 administered on Days 1 and 8 of each 21-day cycle as a 30-minute intravenous infusion. After gemcitabine, carboplatin will be given on Day 1 consistent with a target area under curve (AUC) of 4.0 mg/ ml•min. Dosage reduction with each cycle or within a cycle may be applied based upon the grade of toxicity experienced by the patient.
Monitoring for toxicity and dose modification due to toxicity
Dose modification due to non-haematological toxicity
Periodic physical examination and checks of renal and hepatic function should be made to detect non-haematological toxicity. Dosage reduction with each cycle or within a cycle may be applied based upon the grade of toxicity experienced by the patient. In general, for severe (Grade 3 or 4) non-haematological toxicity, except nausea/vomiting, therapy with gemcitabine should be withheld or decreased depending on the judgement of the treating physician. Doses should be withheld until toxicity has resolved, in the opinion of the physician.
For cisplatin, carboplatin, and paclitaxel dosage adjustment in combination therapy, please refer to the corresponding Summary of Product Characteristics.
Dose modification due to haematological toxicity
Initiation of a cycle
For all indications, the patient must be monitored before each dose for platelet and granulocyte counts. Patients should have an absolute granulocyte count of at least 1,500 (x $10^6$/l) and platelet count of 100,000 (x $10^6$/l) prior to the initiation of a cycle.
Within a cycle
Dose modifications of gemcitabine within a cycle should be performed according to the following:
**1. Dose modification of gemcitabine within a cycle for bladder cancer, NSCLC and pancreatic cancer, given in monotherapy or in combination with cisplatin**
• If the "Absolute granulocyte count" is > 1,000 (x $10^6$/l) and the "Platelet count" is > 100,000 (x $10^6$/l): the percentage of standard dose of Gemtabine® is 100%.
• If the "Absolute granulocyte count" is 500-1,000 (x $10^6$/l) or the "Platelet count" is 50,000-100,000 (x $10^6$/l): the percentage of standard dose of Gemtabine® is 75%.
• If the "Absolute granulocyte count" is < 500 (x $10^6$/l) or the "Platelet count" is < 50,000 (x $10^6$/l): omit the dose*.
*Treatment omitted will not be reinstated within a cycle before the absolute granulocyte count reaches at least 500 (x$10^6$/l) and the platelet count reaches 50,000 (x$10^6$/l).
**2. Dose modification of gemcitabine within a cycle for breast cancer, given in combination with paclitaxel**
• If the "Absolute granulocyte count" is ≥ 1,200 (x $10^6$/l) and the "Platelet count" is > 75,000 (x $10^6$/l): the percentage of standard dose of Gemtabine® is 100%.
• If the "Absolute granulocyte count" is 1,000 ≤ 1,200 (x $10^6$/l) or the "Platelet count" is 50,000-75,000 (x $10^6$/l): the percentage of standard dose of Gemtabine® is 75%.
• If the "Absolute granulocyte count" is 700 ≤ 1000 (x $10^6$/l) and the "Platelet count" is ≥ 50,000 (x $10^6$/l): the percentage of standard dose of Gemtabine® is 50%.
• If the "Absolute granulocyte count" is < 700 (x $10^6$/l) or the "Platelet count" is < 50,000 (x $10^6$/l): omit the dose*.
*Treatment omitted will not be reinstated within a cycle. Treatment will start on Day 1 of the next cycle once the absolute granulocyte count reaches at least 1,500 (x$10^6$/l) and the platelet count reaches 100,000 (x$10^6$/l).
Dose modifications due to haematological toxicity in subsequent cycles, for all indications
The gemcitabine dose should be reduced to 75% of the original cycle initiation dose, in the case of the following haematological toxicities:
• Absolute granulocyte count < 500 x $10^6$/l for more than 5 days
• Absolute granulocyte count < 100 x $10^6$/l for more than 3 days
• Febrile neutropenia
• Platelets < 25,000 x $10^6$/l
• Cycle delay of more than 1 week due to toxicity
**Method of administration**
Gemtabine® is tolerated well during infusion and may be administered ambulant. If extravasation occurs, generally the infusion must be stopped immediately and started again in another blood vessel. The patient should be monitored carefully after the administration.
For instructions on reconstitution refer to: ***Instructions for reconstitution (and further dilution, if performed).***
**Special populations**
Patients with renal or hepatic impairment
Gemcitabine should be used with caution in patients with hepatic or renal impairment.
Older people (> 65 years)
Gemcitabine has been well tolerated in patients over the age of 65. There is no evidence to suggest that dose adjustments, other than those already recommended for all patients, are necessary in older people.
Paediatric population (< 18 years)
Gemcitabine is not recommended for use in children under 18 years of age.

Special precautions for disposal and other handling
Handling
The normal safety precautions for cytostatic agents must be observed when preparing and disposing of the infusion solution. Handling of the solution for infusion should be done in a safety box and protective coats and gloves should be used. If no safety box is available, the equipment should be supplemented with a mask and protective glasses.
If the preparation meets the eyes, this may cause serious irritation. The eyes should be rinsed immediately and thoroughly with water. If there is lasting irritation, a doctor should be consulted. If the solution is spilled on the skin, rinse thoroughly with water.
**Instructions for reconstitution (and further dilution, if performed)**
The only approved diluent for reconstitution of gemcitabine sterile powder is sodium chloride 9 mg/ml (0.9%) solution for injection (without preservative). Due to solubility considerations, the maximum concentration for gemcitabine upon reconstitution is 40 mg/ml. Reconstitution at concentrations greater than 40 mg/ml may result in incomplete dissolution and should be avoided.
1. Use aseptic technique during the reconstitution and any further dilution of gemcitabine for intravenous infusion administration.
2. To reconstitute, add 5 ml of sterile sodium chloride 9 mg/ml (0.9 %) solution for injection, without preservative, to the 200 mg vial or 25 ml sterile sodium chloride 9 mg/ml (0.9 %) solution for injection, without preservative, to the 1,000 mg vial. The total volume after reconstitution is 5.26 ml (200 mg vial) or 26.3 ml (1,000 mg vial) respectively. This yields a gemcitabine concentration of 38 mg/ml, which includes accounting for the displacement volume of the lyophilised powder. Shake to dissolve. Further dilution with sterile sodium chloride 9 mg/ml (0.9 %) solution for injection, without preservative, can be done.
3. Parenteral medicinal products should be inspected visually for particulate matter and discolouration prior to administration. If particulate matter is observed, do not administer.
Any unused product or waste material should be disposed of in accordance with local requirements.
**OVERDOSAGE**
There is no known antidote for overdose of gemcitabine. Doses as high as 5,700 mg/m2 have been administered by intravenous infusion over 30 minutes every 2 weeks with clinically acceptable toxicity. In the event of suspected overdose, the patient should be monitored with appropriate blood counts and receive supportive therapy, as necessary.

**STORAGE CONDITIONS**
Store below 30°C.
Keep in original pack in intact conditions.

**Reconstituted solution:**
Chemical and physical in-use stability has been demonstrated for 24 hours at 30°C. From a microbiological point of view, the product should be used immediately. If not used immediately, in-use storage times and conditions prior to use are the responsibility of the user and would normally not be longer than 24 hours at room temperature.
Solutions of reconstituted gemcitabine should not be refrigerated, as crystallisation may occur.

**Date of Revision:** October 2018.

**This is a medicament**
- A medicament is a product which affects your health, and its consumption contrary to instructions is dangerous for you
- Follow strictly the doctor's prescription, the method of use, and the instructions of the pharmacist who sold the medicament
- The doctor and the pharmacist are experts in medicine, its benefits and risks
- Do not by yourself interrupt the period of treatment prescribed for you
- Do not repeat the same prescription without consulting your doctor
- Medicament: keep out of reach of children

Council of Arab Health Ministers
Union of Arab Pharmacists

**Benta** S.A.L.,
Dbayeh - Lebanon