ABRAXANE® Powder for Injection (suspension) Product Information

Abraxis BioScience Australia Pty Ltd (an indirect subsidiary of Celgene Corporation)

# ABRAXANE® Product Information

### NAME OF THE MEDICINE

ABRAXANE (nanoparticle albumin-bound paclitaxel) 100 mg powder for injection (suspension).

The empirical formula for Paclitaxel is  $C_{47}H_{51}NO_{14}$ . The CAS Number for paclitaxel is 33069-62-4. The chemical name for paclitaxel is  $5\beta$ ,20-Epoxy-1,2 $\alpha$ ,4,7 $\beta$ ,10 $\beta$ ,13 $\alpha$ -hexahydroxytax-11-en-9-one 4,10-diacetate 2-benzoate 13-ester with (2*R*,3*S*)-*N*-benzoyl-3-phenylisoserine. Paclitaxel has the following chemical structure:

#### **DESCRIPTION**

ABRAXANE (nanoparticle albumin-bound paclitaxel) 100 mg powder for injection (suspension) is an albumin nanoparticle form of paclitaxel with a mean particle size of approximately 130 nanometres. Paclitaxel exists in the nanoparticles in a non-crystalline, amorphous state. Each vial of ABRAXANE contains paclitaxel and human albumin in the ratio of 1:9. The paclitaxel is contained within nanoparticles that consist of a majority of paclitaxel bound to human albumin.

ABRAXANE is supplied as a white to yellow, sterile, lyophilised powder in a 50 mL glass vial.

Each single-use vial contains the following:

Paclitaxel 100 mg

#### Excipients:

Human albumin solution (containing sodium, sodium octanoate and N-acetyl tryptophan).

The reconstituted medicinal product contains approximately 85 mg sodium per vial. ABRAXANE is free of solvents.

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The active agent in ABRAXANE is paclitaxel, a natural product with antitumour activity. Paclitaxel is obtained from *Taxus media*.

Paclitaxel is a white to off-white crystalline powder with a molecular weight of 853.91. It is highly lipophilic, insoluble in water.

#### **PHARMACOLOGY**

Paclitaxel, the active pharmaceutical ingredient in ABRAXANE, is an antimicrotubule agent that promotes the assembly of microtubules from tubulin dimers and stabilises microtubules by preventing depolymerisation. This stability results in the inhibition of the normal dynamic reorganisation of the microtubule network that is essential for vital interphase and mitotic cellular functions. Paclitaxel induces abnormal arrays or "bundles" of microtubules throughout the cell cycle and multiple asters of microtubules during mitosis.

#### **Pharmacokinetics**

Absorption and Distribution: The pharmacokinetics of total paclitaxel following 30- and 180-minute infusions of ABRAXANE at dose levels of 80 to 375 mg/m² were determined in clinical studies. AUCs were approximately dose proportional in the range 80 to 300 mg/m² and the pharmacokinetics of paclitaxel for ABRAXANE were independent of the duration of administration. Following intravenous administration of ABRAXANE, paclitaxel plasma concentrations declined in a biphasic manner, the initial rapid decline representing distribution to the peripheral compartment and the slower second phase representing drug elimination. At the clinical dose range of 80 to 300 mg/m², the mean volume of distribution ranged from 387 to 772 L/m². The large volume of distribution indicates extensive extravascular distribution and/or tissue binding of paclitaxel.

In vitro studies of binding to human serum proteins, using paclitaxel concentrations ranging from 0.1 to 50  $\mu$ g/mL, indicate that between 89% to 98% of drug is bound, although studies specifically investigating protein binding with this formulation of paclitaxel were not conducted. The presence of cimetidine, ranitidine, dexamethasone, or diphenhydramine did not affect protein binding of paclitaxel.

*Metabolism and Excretion:* At the clinical dose range of 80 to 300 mg/m<sup>2</sup>, the mean total clearance of paclitaxel ranged from 13 to 30 L/h/m<sup>2</sup> and the mean terminal half-life ranged from 13 to 27 hours in patients with metastatic breast cancer, advanced NSCLC, or other solid tumours.

After a 30-minute infusion of 260 mg/m² doses of ABRAXANE, the mean values for cumulative urinary recovery of unchanged drug (4%) indicated extensive non-renal clearance. Less than 1% of the total administered dose was excreted in urine as the metabolites  $6\alpha$ -hydroxypaclitaxel and 3'-p-hydroxypaclitaxel. Faecal excretion was approximately 20% of the total dose administered. Hepatic metabolism has been demonstrated in animals. The pharmacokinetics of paclitaxel may also be altered *in vivo* as a result of interactions with compounds that are substrates, inducers, or inhibitors of CYP2C8 and/or CYP3A4 (see

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**PRECAUTIONS: Interactions with other medicines**). The effect of renal or hepatic dysfunction on the disposition of ABRAXANE has not been investigated.

#### **CLINICAL TRIALS**

#### Metastatic Breast Carcinoma

In a multi-centre trial, patients with metastatic breast cancer were randomised to receive paclitaxel every 3 weeks, either in a solvent-based form at 175 mg/m² in a 3-hour intravenous infusion (n=227) or as ABRAXANE 260 mg/m² in a 30-minute intravenous infusion (n=233). Premedication was given with solvent-based paclitaxel to prevent hypersensitivity. The treatments were not blinded. Two patients randomised to solvent-based paclitaxel and four to ABRAXANE did not receive any treatment.

Sixty-four percent of patients had impaired performance status (ECOG 1 or 2) at study entry; 79% had visceral metastases; and 76% had > 3 sites of metastases. Fourteen percent of the patients had not received prior chemotherapy; 27% had received chemotherapy in the adjuvant setting only, 40% in the metastatic setting only, and 19% in both metastatic and adjuvant settings. Fifty-nine percent received study drug as second or greater than second-line therapy. Seventy-seven percent of the patients had been previously exposed to anthracyclines.

Table 1 shows the results of the intent-to-treat analysis.

Table 1: Results for overall response rate, median time to disease progression, and progression-free survival as assessed by the investigator in Randomised Metastatic Breast Cancer Trial (Intent-to-Treat Population)

Efficacy variable	ABRAXANE (260 mg/m²) (n=233)	Solvent-based paclitaxel (175 mg/m²) (n=227)	p-value Ratio [95% CI]
Response rate <sup>a</sup> (%)		<u>, , , , , , , , , , , , , , , , , , , </u>	
	32.6	18.5	≤0.001 <sup>b</sup> 1.76 [1.27, 2.45]
*Time to disease progr	ession (months)		
	Median 5.3	Median 3.8	0.003° 0.73 [0.59, 0.90]
*Progression Free Sur	vival (months)		1
	Median 5.2	Median 3.8	0.003° 0.73 [0.60, 0.90]
*Survival (months)			
	Median 15.0	Median 12.7	0.35° 0.90 [0.73, 1.12]

<sup>\*</sup>This data is based on Clinical Study Report: CA012-0 Addendum dated Final (23 March-2005)

<sup>&</sup>lt;sup>a</sup> Response rate is the sum of the complete and partial response rates assessed according to RECIST criteria

<sup>&</sup>lt;sup>b</sup> Cochran-Mantel-Haenszel test

<sup>&</sup>lt;sup>c</sup> Log-rank test

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# **Non-Small Cell Lung Cancer**

# Randomised comparative study

A multicenter, randomized, open-label study was conducted in 1052 chemonaive patients with Stage IIIb/IV non-small cell lung cancer to compare ABRAXANE in combination with carboplatin versus solvent-based paclitaxel in combination with carboplatin as first-line treatment in patients with advanced non-small cell lung cancer. Patients with evidence of active brain metastases, including leptomeningeal involvement, were excluded from the study. ABRAXANE was administered to patients (N=521) as an intravenous infusion over 30 minutes at a dose of 100 mg/m<sup>2</sup> on Days 1, 8, and 15 of each 21-day cycle without any steroid premedication and without granulocyte colony stimulating factor prophylaxis. Beginning immediately after the end of ABRAXANE administration, carboplatin at a dose of AUC = 6 mg•min/mL was administered intravenously on Day 1 only of each 21-day cycle. Solventbased paclitaxel was administered to patients (N=531) at a dose of 200 mg/m<sup>2</sup> as an intravenous infusion over 3 hours with standard premedication, immediately followed by carboplatin administered intravenously at AUC = 6 mg·min/mL, each drug was administered on Day 1 of each 21-day cycle. The differences in paclitaxel dose and schedule between the two arms may independently influence the study results and limit direct comparison of doseand schedule-dependent clinical outcomes and adverse reactions. Treatment was administered until disease progression or development of an unacceptable toxicity.

Patient demographics of the intent-to-treat population are shown in Table 2. The demographics and disease characteristics were well balanced.

Attachment 1: Product information for AusPAR Abraxane nanoparticle albumin-bound (nab) paclitaxel. Abraxis Bioscience Pty Ltd PM-2002-01185-3-4 Final 9 January 2014. This Product Information was approved at the time this AusPAR was published.

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Table 2: Summary of Patient Characteristics in Randomized Non-Small Cell Lung Cancer Trial (Intent-to-Treat Population)

Patient Characteristics	ABRAXANE (100 mg/m²/week) and carboplatin (N=521)	Solvent-based paclitaxel (200 mg/m <sup>2</sup> every 3 weeks) and carboplatin (N=531)
Age (years)	( )	
Median (range)	60.0 (28, 81)	60.0 (24, 84)
< 65 years, n (%)	360 (69%)	348 (66%)
≥ 65 years, n (%)	161 (31%)	183 (34%)
Gender (%)	`	`
Male/Female	75%/25%	75%/25%
Origin, n (%)		
White, Non-Hispanic & Non-Latino	416 (80%)	433 (82%)
Asian	79 (15%)	80 (15%)
Black, of African heritage	12 (2%)	8 (2%)
White, Hispanic or Latino	11 (2%)	5 (< 1%)
Other	2 (< 1%)	5 (< 1%)
North American Indian or Alaska native	1 (< 1%)	0 (0%)
Stage at Randomization (%)	1 ( 170)	0 (0,0)
IIIb/IV	21%/79%	21%/79%
Histology of Primary Diagnosis	217.6.727.6	21767777
Carcinoma/Adenocarcinoma	254 (49%)	264 (50%)
Squamous Cell Carcinoma	229 (44%)	221 (42%)
Large Cell Carcinoma	9 (2%)	13 (2%)
Other	29 (6%)	33 (6%)
ECOG PS (%)	\ /	
0/1	26%/74%	21%/78%
Smoking Status, N	519	526
Ever/Never Smoked (%)	74%/26%	73%/27%

ECOG PS = Eastern Cooperative Oncology Group Performance Status

Patients received a median of 6 cycles of treatment in both study arms. For the treated population, the median cumulative paclitaxel dose and the median average paclitaxel dose intensity were higher with ABRAXANE administered weekly (1325.0 mg/m² and 81.9 mg/m²/week, respectively) relative to solvent-based paclitaxel administered every 3 weeks (1125.0 mg/m² and 65.1 mg/m²/week, respectively). The median cumulative carboplatin dose and the median average carboplatin dose intensity were lower for the ABRAXANE and carboplatin regimen (3140.5 mg and 166.1 mg/week, respectively) relative to the solvent-based paclitaxel and carboplatin regimen (3315.0 mg and 203.6 mg/week, respectively).

The primary efficacy endpoint was overall response rate defined as the percentage of patients who achieved an objective confirmed complete response or partial response based on an independent, central, blinded radiological review using RECIST guidelines (Version 1.0). Results for overall response rate, progression-free survival, and overall survival are shown in Table 3.

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Table 3: Efficacy Results from Randomized Non-Small Cell Lung Cancer Trial (Intent-to-Treat Population)

(Intent-to-Treat Populati	ABRAXANE	Solvent-based paclitaxel		
	(100 mg/m <sup>2</sup> /week)	(200 mg/m <sup>2</sup> every 3 weeks) and		
	and carboplatin	carboplatin		
Efficacy Parameter	(N=521)	(N=531)		
Overall Response Rate				
Confirmed complete or partial overall				
response, n (%)	170 (33%)	132 (25%)		
95% CI	28.6, 36.7	21.2, 28.5		
$p_A/p_T (95.1\% CI)$	1.313	(1.082, 1.593)		
p <sub>A</sub> /p <sub>T</sub> (95.1% CI) P-value <sup>a</sup>		0.005		
Overall Response Rate in the Elderly Subgr	roup			
Confirmed complete or partial overall				
response, n/N (%)				
< 65 years	116/360 (32%)	86/348 (25%)		
$p_{A}/p_{T}$ (95% CI)	1.304	(1.029, 1.652)		
P-value <sup>a</sup>		0.027		
≥ 65 years	54/161 (34%)	46/183 (25%)		
$p_{A}/p_{T}$ (95% CI)	1.334 (0.958, 1.859)			
P-value <sup>a</sup>	0.087			
Progression-free Survival				
Death or progression, n (%)	297 (57%)	312 (59%)		
Median Progression-free Survival				
(months)	6.3	5.8		
95% CI	5.6, 7.0	5.6, 6.7		
HR <sub>A/T</sub> (95.1% CI)	0.902 (0.767, 1.060)			
P-value <sup>b</sup>		0.214		
Non-inferiority Progression-free Survival <sup>c</sup>				
Death or progression, n (%)	429 (82%)	442 (83%)		
Median Progression-free Survival				
(months)	6.8	6.5 5.7, 6.9		
95% CI	5.7, 7.7	•		
HR <sub>A/T</sub> (95% CI) 0.949 (0.830, 1.086)		(0.830, 1.086)		
Overall Survival <sup>d</sup>	2 (2 (522))	1 201/7000		
Number of deaths, n (%)	360 (69%)	384 (72%)		
Median Overall Survival (months)	12.1	11.2		
95% CI		10.8, 12.9 10.3, 12.6		
HR <sub>A/T</sub> (95.1% CI)	0.922 (0.797, 1.066)			
P-value <sup>b</sup>	0.271			

CI = confidence interval;  $HR_{A/T}$  = hazard ratio of ABRAXANE/carboplatin to solvent-based paclitaxel/carboplatin;  $p_A/p_T$  = response rate ratio of ABRAXANE/carboplatin to solvent-based paclitaxel/carboplatin.

The effect of prognostic factors on the primary efficacy endpoint of overall response rate was pre-specified. Two prognostic factors showed a significant interaction (defined as  $p \le 0.10$ ) with treatment effect on overall response rate: (1) time interval from primary diagnosis to

<sup>&</sup>lt;sup>a</sup> P-value is based on a chi-square test.

<sup>&</sup>lt;sup>b</sup> P-value is based on a stratified log-rank test stratified by geographic region and histology of primary diagnosis.

<sup>&</sup>lt;sup>c</sup> Missing observations or initiation of subsequent new therapy were not used to censor progression-free survival event for this analysis (based on the EMA methodological considerations for PFS). The non-inferiority margin was 15%, or an upper boundary of the 95% CI of the HR < 1.176. This non-inferiority margin was determined after the interim results of the study were known.

d Superiority and non-inferiority analyses of overall survival.

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randomization and (2) histology (see Table 4). There was no interaction between the variable and the treatment effect as measured by overall response rate for the following baseline factors: region, gender, race, age, smoking status, baseline ECOG status, stage at primary diagnosis, time from date of first documented metastasis/relapse to date of study entry, stage at current diagnosis, and number of lesions.

Table 4: Effect of Prognostic Factors on Primary Endpoint of Overall Response Rate in Randomized Non-Small Cell Lung Cancer Trial (Intent-to-Treat Subgroups)

Subgroups)			
Prognostic Factor Category/Statistic	ABRAXANE (100 mg/m²/week) and carboplatin (N=521)	Solvent-based paclitaxel (200 mg/m <sup>2</sup> every 3 weeks) and carboplatin (N=531)	Interaction P-value
Time from Date of Primary Diagnosis to Date of Study Entry			0.092
< 1 month	109/347 (31%)	93/345 (27%)	
1-3 months	36/116 (31%)	26/118 (22%)	
≥ 3 months	25/58 (43%)	13/68 (19%)	
Histology at Primary Diagnosis			0.036
Carcinoma/Adenocarcinoma	66/254 (26%)	71/264 (27%)	
Squamous Cell Carcinoma	94/229 (41%)	54/221 (24%)	
Large Cell Carcinoma	3/9 (33%)	2/13 (15%)	
Other	7/29 (24%)	5/33 (15%)	

P-value is based on a logistic regression model with effects for treatment regimen, prognostic factor, and treatment regimen by prognostic factor interaction. A nonsignificant interaction p-value (ie, p-value  $\geq 0.100$ ) indicates the treatment regimen effect was consistent within a prognostic factor.

# **INDICATIONS**

#### **Metastatic Breast Cancer**

ABRAXANE is indicated for the treatment of metastatic carcinoma of the breast after failure of anthracycline therapy.

#### **Non-small Cell Lung Cancer**

ABRAXANE, in combination with carboplatin, is indicated for the first-line treatment of non-small cell lung cancer in patients who are not candidates for potentially curative surgery and/or radiation.

# CONTRAINDICATIONS

ABRAXANE should not be used in patients who have baseline neutrophil counts of  $< 1.5 \text{ x} + 10^9/\text{L}$ .

Patients who have exhibited hypersensitivity reactions to ABRAXANE or human albumin should not be treated with ABRAXANE.

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ABRAXANE is contraindicated during pregnancy and lactation.

#### **PRECAUTIONS**

ABRAXANE should be administered under the supervision of a physician experienced in the use of cancer chemotherapeutic agents. Appropriate management of complications is possible only when adequate diagnostic and treatment facilities are readily available.

# Interchangeability

An albumin form of paclitaxel may substantially affect a drug's functional properties relative to those of drug in solution. ABRAXANE is not clinically interchangeable with other paclitaxel formulations. If a decision is made to discontinue ABRAXANE and to begin treatment with other paclitaxel formulations (or vice versa), there should be careful consideration of the differences between these products in indication, pharmacokinetics, dosing, administration, safety profile, and monitoring requirements.

#### Haematology

Bone marrow suppression is dose dependent and a dose limiting toxicity. ABRAXANE therapy should not be administered to patients with baseline neutrophil counts of less than 1.5 x  $10^9$ /L. In order to monitor the occurrence of myelotoxicity, it is recommended that frequent peripheral blood cell counts be performed on all patients receiving ABRAXANE. Patients should not be retreated with subsequent cycles of ABRAXANE until neutrophils recover to a level >1.5 x  $10^9$ /L and platelets recover to a level >100 x  $10^9$ /L. In the case of severe neutropenia (<0.5 x  $10^9$ /L for seven days or more) during a course of ABRAXANE therapy, a dose reduction for subsequent courses of therapy is recommended (see **DOSAGE and ADMINISTRATION**).

## **Neuropathy**

Sensory neuropathy occurs frequently with ABRAXANE. The occurrence of grade 1 or 2 sensory neuropathy does not generally require dose modification. For single-agent use of ABRAXANE, if grade 3 sensory neuropathy develops, treatment should be withheld until resolution to grade 1 or 2 followed by a dose reduction for all subsequent courses of ABRAXANE. For combination use of ABRAXANE and carboplatin, if grade 3 or higher peripheral neuropathy develops, treatment should be withheld until improvement to grade 0 or 1 followed by a dose reduction for all subsequent courses of ABRAXANE and carboplatin (see DOSAGE AND ADMINISTRATION section).

#### **Hypersensitivity**

Rare occurrences of severe hypersensitivity reactions, including very rare events of anaphylactic reactions with fatal outcome, have been reported. Patients who experience a severe hypersensitivity reaction to ABRAXANE should not be re-challenged with the drug.

# **Pneumonitis**

Even though the incidence is low, patients should be closely monitored for signs and symptoms of pneumonitis. Pneumonitis has occurred in <1% of patients in metastatic breast cancer and in combination with carboplatin for NSCLC.

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# **Hepatic Impairment**

Patients with severe hepatic impairment (bilirubin > 5 x ULN or AST/ALT > 10 x ULN) should not be treated with ABRAXANE. Hepatic impairment may decrease the elimination of paclitaxel resulting in an inverse linear correlation between bilirubin and clearance.

Patients with hepatic impairment may be at increased risk of toxicity, particularly from myelosuppression, and such patients should be closely monitored for development of profound myelosuppression. The appropriate dose regimen in patients with less severe hepatic impairment is unknown. A dose reduction in patients with bilirubin >2 ULN must be considered since paclitaxel clearance is decreased in patients with high bilirubin levels.

## Cardiotoxicity

Uncommon events of congestive heart failure and left ventricular dysfunction have been observed among individuals receiving ABRAXANE. Most of the individuals were previously exposed to cardiotoxic drugs, such as anthracyclines, or had underlying cardiac history. Thus patients receiving ABRAXANE should be vigilantly monitored by physicians for the occurrence of cardiac events.

#### **CNS** metastases

The effectiveness and safety of ABRAXANE in patients with CNS metastases has not been established.

#### **Gastrointestinal symptoms**

If patients experience nausea, vomiting and diarrhoea following administration of ABRAXANE, they may be treated with commonly used anti-emetics and constipating agents.

#### **Effects on Fertility**

Administration of ABRAXANE to male rats on a weekly basis for 11 weeks prior to mating with untreated female rats was associated with testicular atrophy/degeneration and reduced fertility accompanied by decreased pregnancy rates and increased loss of embryos in mated females. Testicular atrophy/degeneration has also been observed in single dose toxicology studies in rodents administered ABRAXANE at 6 mg/kg (54 mg/m²) and dogs administered 8.75 mg/kg (175 mg/m²).

# **Use in Pregnancy**

#### Category D

ABRAXANE is suspected to cause serious birth defects when administered to a pregnant woman. Administration of ABRAXANE to female rats on gestation days 7 to 17 daily at doses of 6 mg/m² (approximately 2% of the daily maximum recommended human dose on a mg/m² basis) caused embryo- and foetotoxicity, as indicated by intrauterine mortality, increased resorptions, reduced numbers of live foetuses, reduction in foetal body weight and increase in foetal abnormalities. Foetal abnormalities included skeletal and soft tissue malformations, such as eye bulge, folded retina, and dilation of brain ventricles.

There are no adequate and well-controlled studies in pregnant women using ABRAXANE. If this drug is used during pregnancy, or if the patient becomes pregnant while receiving this drug, the patient should be apprised of the potential hazard to the foetus. Women of

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childbearing potential should be advised to avoid becoming pregnant while receiving treatment with ABRAXANE.

Like other genotoxic cytostatics, ABRAXANE can have genotoxic effects. Male patients treated with ABRAXANE are advised not to father a child during and up to six months after treatment.

#### **Use in Lactation**

It is not known whether paclitaxel is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in breastfeeding infants, it is recommended that breastfeeding be discontinued when receiving ABRAXANE therapy.

#### Paediatric Use

The safety and effectiveness of ABRAXANE in paediatric patients have not been evaluated.

# **Use in Elderly**

# Metastatic Breast Cancer

Of the 229 patients in the randomised study who received ABRAXANE, 13% were at least 65 years of age and < 2% were 75 years or older. No toxicities occurred notably more frequently among elderly patients at least 65 years of age who received ABRAXANE.

# Non-Small Cell Lung Cancer

Of the 514 patients in the randomised study who received ABRAXANE and carboplatin, 31% were 65 years or older and 3.5% were 75 years or older. Myelosuppression events, peripheral neuropathy events, and arthralgia were more frequent in patients 65 years or older compared to patients younger than 65 years old. No additional dose reductions, other than those recommended for all patients, are necessary for patients 65 years or older (See **DOSAGE AND ADMINISTRATION** section).

#### Carcinogenicity

The carcinogenic potential of ABRAXANE has not been studied.

#### Genotoxicity

Paclitaxel has been shown to be clastogenic *in vitro* (chromosome aberrations in human lymphocytes) and *in vivo* (micronucleus test in mice). Paclitaxel was not mutagenic in the Ames test or the CHO/HGPRT gene mutation assay.

# **Interactions with Other Medicines**

A pharmacokinetic study was conducted with ABRAXANE and carboplatin in non-small cell lung cancer patients. There were no clinically relevant pharmacokinetic interactions for ABRAXANE on the pharmacokinetics of carboplatin and for carboplatin on the pharmacokinetics of paclitaxel when administered as ABRAXANE.

Drug interaction studies between ABRAXANE and other medicines have not been conducted.

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# **Drugs Metabolised in the Liver**

The metabolism of paclitaxel is catalysed, in part, by cytochrome P450 isoenzymes CYP2C8 and CYP3A4. Clinical interaction studies between ABRAXANE and inhibitors and inducers of either CYP2C8 or CYP3A4 have not been formally investigated. Therefore, caution should be exercised when administering ABRAXANE concomitantly with medicines known to inhibit (e.g. erythromycin, ketoconazole, fluoxetine, imidazole antifungals, gemfibrozil, cimetidine, ritonavir, saquinavir, indinavir, and nelfinavir) or induce (e.g. rifampicin, carbamazepine, phenytoin, efavirenz, nevirapine) either CYP2C8 or CYP3A4 (see **PHARMACOLOGY: Pharmacokinetics section)**.

*In vitro* studies using rat and human liver slices and liver microsomes have shown that the metabolism of paclitaxel is inhibited by a large number of drugs, including CYP2C8 and CYP3A4 substrates, and quinidine, PEG-35 castor oil, quercetin, clozapine, morin, and resveratrol.

## **Effects on Laboratory Tests**

Interactions with laboratory tests have not been established.

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# **ADVERSE EFFECTS**

# **Metastatic Breast Cancer**

<u>Table 5: Frequency<sup>a</sup> of Important Treatment Emergent Adverse Effects in Metastatic Breast</u> Cancer in the Randomised Study on an Every-3-Weeks Schedule

	Percent of Patients		
	ABRAXANE 260/30min <sup>b</sup> (n=229)	Solvent-based paclitaxel 175/3h <sup>c,d</sup> (n=225)	
Bone Marrow			
Neutropenia			
$< 2.0 \times 10^9 / L$	80	82	
$< 0.5 \times 10^9 / L$	9	22	
Thrombocytopenia			
$< 100 \times 10^9 / L$	2	3	
$< 50 \times 10^9 / L$	<1	<1	
Anaemia			
< 110 g/L	33	25	
< 80 g/L	1	<1	
Infections	24	20	
Neutropenic sepsis	<1	<1	
Febrile Neutropenia	2	1	
Bleeding	2	2	
Hypersensitivity Reaction <sup>e</sup>			
All	4	12	
Severe <sup>f</sup>	0	2	
Cardiovascular			
Vital Sign Changes <sup>g</sup>			
Bradycardia	<1	<1	
Hypotension	5	5	
Severe Cardiovascular	3	4	
Events <sup>f</sup>			
Abnormal ECG			
All patients	60	52	
Patients with Normal	35	30	
Baseline			

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<u>Table 5: Frequency<sup>a</sup> of Important Treatment Emergent Adverse Effects in Metastatic Breast</u> Cancer in the Randomised Study on an Every-3-Weeks Schedule, Continued

	Percent of Patients		
	ABRAXANE 260/30min <sup>b</sup> (n=229)	Solvent-based paclitaxel 175/3h <sup>c,d</sup> (n=225)	
Respiratory			
Cough	7	6	
Dyspnea	12	9	
Sensory Neuropathy			
Any Symptoms	71	56	
Severe Symptoms <sup>f</sup>	10	2	
Myalgia / Arthralgia			
Any Symptoms	44	49	
Severe Symptoms <sup>f</sup>	8	4	
Asthenia			
Any Symptoms	47	39	
Severe Symptoms <sup>f</sup>	8	3	
Fluid Retention / Edema			
Any Symptoms	10	8	
Severe Symptoms <sup>f</sup>	0	<1	
Gastrointestinal			
Nausea			
Any Symptoms	30	22	
Severe Symptoms <sup>f</sup>	3	<1	
Vomiting			
Any Symptoms	18	10	
Severe Symptoms <sup>f</sup>	4	1	
Diarrhoea			
Any Symptoms	27	15	
Severe Symptoms <sup>f</sup>	<1	1	
Mucositis			
Any Symptoms	7	6	
Severe Symptoms <sup>f</sup>	<1	0	
Alopecia	90	94	
Hepatic (Patients with			
Normal Baseline)	7	7	
Bilirubin Elevations	7	7	
Alkaline Phosphatase Elevations	36	31	
AST (SGOT) Elevations	39	32	
Injection Site Reaction	<1	1	

a Based on worst grade.

b ABRAXANE dose in mg/m<sup>2</sup>/duration in minutes.

c Solvent-based paclitaxel dose in mg/m<sup>2</sup>/duration in hours.

d Solvent-based paclitaxel pts received premedication.

e Includes treatment-related events related to hypersensitivity (e.g., flushing, dyspnea, chest pain, hypotension) that began on a day of dosing.

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- f Severe events are defined as at least grade 3 toxicity.
- g During study drug dosing.

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# Adverse Events in Any Trial with Single Agent ABRAXANE

Table 6 lists adverse effects associated with the administration of ABRAXANE to patients from studies in which ABRAXANE has been administered as a single agent at any dose in any indication (N = 789).

The frequency of undesirable effects listed in Table 6 is defined using the following convention:

Very common ( $\geq 1/10$ ); common ( $\geq 1/100$ , <1/10); uncommon ( $\geq 1/1,000$ , <1/100); rare ( $\geq 1/10,000$ , <1/1,000); very rare (<1/10,000).

Table 6: Adverse Effects Reported With ABRAXANE at Any Dose in Single Agent Clinical Trials

<u>Trials</u>	
	Common: Infection, urinary tract infection, folliculitis, upper respiratory tract infection, candidiasis, sinusitis
Infections and infestations	Uncommon: Oral candidiasis, nasopharyngitis, cellulitis, herpes simplex, viral infection, pneumonia, catheter-related infection, fungal infection, herpes zoster, injection site infection, respiratory tract infections, neutropenic sepsis
Neoplasms benign, malignant and unspecified	Uncommon: Metastatic pain, tumour necrosis
Blood and lymphatic	Very Common: Neutropenia, anaemia, leukopenia, thrombocytopenia, lymphopenia, bone marrow suppression
system disorders	Common: Febrile neutropenia
Immune system	Uncommon: Hypersensitivity
disorders	Rare: Severe hypersensitivity
	Very common: Anorexia
Metabolism and	Common: Dehydration, decreased appetite, hypokalaemia
nutrition disorders	Uncommon: Hypophosphataemia, fluid retention, hypoalbuminaemia, polydipsia, hyperglycaemia, hypocalcaemia, hypoglycaemia, hyponatraemia
Psychiatric disorders	Common: Insomnia, depression, anxiety
	Uncommon: Restlessness
Nervous system	Very Common: Peripheral neuropathy, neuropathy, hypoaesthesia, paraesthesia.
disorders	<i>Common</i> : Sensory neuropathy, peripheral sensory neuropathy, headache, dysgeusia, dizziness, peripheral motor neuropathy, ataxia, sensory disturbance, somnolence.

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	Uncommon: Polyneuropathy, areflexia, dyskinesia, hyporeflexia, neuralgia, sensory loss, syncope, postural dizziness, neuropathic pain, tremor
Eye disorders	Common: Increased lacrimation, blurred vision, dry eye, keratoconjunctivitis sicca, madarosis
	<i>Uncommon</i> : Eye irritation, eye pain, abnormal vision, reduced visual acuity, conjunctivitis, visual disturbance, eye pruritus, keratitis
Ear and labyrinth disorders	Common: Vertigo
	Uncommon: Ear pain, tinnitus
Cardiac disorders	Common: Arrhythmia, chest pain, dyspnea, edema, flushing, hypotension, hypertension, pulmonary emboli, pulmonary thromboembolism, supraventricular tachycardia, Tachycardia
Cardiae disorders	Uncommon: Congestive heart failure, left ventricular dysfunction
	Rare: Bradycardia, cardiac arrest, atrioventricular block
	Common: Flushing, hot flushes, hypertension, lymphoedema
Vascular disorders	Uncommon: Hypotension, peripheral coldness, orthostatic hypotension
	Rare: Thrombosis
	Common: Dyspnoea, epistaxis, pharyngolaryngeal pain, cough, rhinitis, rhinorrhoea
Respiratory, thoracic and mediastinal disorders	<i>Uncommon</i> : Productive cough, exertional dyspnoea, sinus congestion, decreased breath sounds, pleural effusion, allergic rhinitis, hoarseness, nasal congestion, nasal dryness, wheezing, pulmonary emboli, pulmonary thromboembolism, radiation pneumonitis
	Rare: Interstitial pneumonitis
	Very Common: Nausea, diarrhoea, vomiting, constipation, stomatitis, mucositis
Gastrointestinal disorders	Common: Abdominal pain, abdominal distension, upper abdominal pain, dyspepsia, gastrooesophageal reflux disease, oral hypoaesthesia
	<i>Uncommon</i> : Dysphagia, flatulence, glossodynia, dry mouth, gingival pain, loose stools, oesophagitis, lower abdominal pain, mouth ulceration, oral pain, rectal haemorrhage
Hepatobiliary disorders	Uncommon: Hyperbilirubinaemia, hepatomegaly
	Very Common: Alopecia, rash
Skin and subcutaneous tissue disorders	Common: Nail disorder, pruritus, dry skin, erythema, nail pigmentation/discolouration, skin hyperpigmentation, onycholysis, nail changes

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	<i>Uncommon</i> : Nail bed tenderness, urticaria, skin pain, photosensitivity reaction, pigmentation disorder, pruritic rash, skin disorder, hyperhidrosis, onychomadesis, erythematous rash, generalised rash, dermatitis, night sweats, maculo-papular rash, vitiligo, hypotrichosis, nail discomfort, generalised pruritus, macular rash, papular rash, skin lesion, swollen face
	Very Common: Arthralgia, myalgia
Musculoskeletal and connective tissue	Common: Pain in extremity, bone pain, back pain, muscle cramps, limb pain
disorders	Uncommon: Chest wall pain, muscular weakness, neck pain, groin pain, muscle spasms, musculoskeletal pain, flank pain, limb discomfort, muscle weakness
Renal and urinary disorders	<i>Uncommon</i> : Dysuria, pollakiuria, haematuria, nocturia, polyuria, urinary incontinence
Reproductive system and breast disorders	Uncommon: Breast pain
	Very Common: Fatigue, asthenia, pyrexia
General disorders and administration site conditions	Common: Peripheral oedema, mucosal inflammation, pain, rigors, oedema, weakness, decreased performance status, chest pain, influenza-like illness, malaise, lethargy, hyperpyrexia
	Uncommon: Chest discomfort, abnormal gait, swelling, injection site reaction
Investigations	Common: Decreased weight, increased alanine aminotransferase, increased aspartate aminotransferase, decreased haematocrit, decreased red blood cell count, increased body temperature, increased gammaglutamyltransferase, increased blood alkaline phosphatase
	Uncommon: Increased blood pressure, increased weight, increased blood lactate dehydrogenase, increased blood creatinine, increased blood glucose, increased blood phosphorus, decreased blood potassium, increased bilirubin
Injury, poisoning and procedural complications	Uncommon: Contusion  Rare: radiation recall phenomenon, radiation pneumonitis

# Non-Small Cell Lung Cancer

Table 7 provides the frequency and severity of adverse reactions by system organ class/preferred term that have been reported in  $\geq$ 5% of 514 patients with advanced non-small cell lung cancer who received ABRAXANE and carboplatin and 524 patients with advanced non-small cell lung cancer who received solvent-based paclitaxel and carboplatin. Within each system organ class grouping, adverse reactions are presented in order of decreasing frequency.

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The frequency estimates for adverse reactions are defined as: Very common ( $\geq 1/10$ ); Common ( $\geq 1/100$  to < 1/10); Uncommon ( $\geq 1/1,000$  to < 1/100); Rare ( $\geq 1/10,000$ ) to < 1/10,000), Very rare (< 1/10,000); and Not known (cannot be estimated from available data – spontaneous reports).

Table 7: Adverse Reactions Reported in ≥5% of Patients in Non-Small Cell Lung Cancer Clinical Trial (by MedDRA System Organ Class and Preferred Term)

System	Frequency	Preferred Term	ABRAXANE (100 mg/m²/week) and carboplatin (N=514)		Solvent-based paclitaxel (200 mg/m² every 3 weeks) and carboplatin (N=524)	
Organ Class			All Grades Toxicity <sup>2</sup> (%)	Grade 3 or Higher Toxicity <sup>3</sup> (%)	All Grades Toxicity <sup>2</sup> (%)	Grade 3 or Higher Toxicity <sup>3</sup> (%)
Blood and	Very	Anaemia <sup>1</sup>	97	27	91	7
lymphatic	Common	Leukopenia <sup>1</sup>	89	24	83	23
system		Neutropenia <sup>1</sup>	84	47	83	58
disorders <sup>1</sup>		Thrombocytopenia <sup>1</sup>	67	18	55	9
Skin and	Very	Alopecia	56	<1	60	0
subcutaneous tissue disorders	Common	Rash	10	0	8	<1
Nervous system	Very Common	Peripheral neuropathy <sup>4</sup>	48	3	64	12
disorders	Common	Dysgeusia	7	0	6	0
		Headache	7	<1	4	<1
		Dizziness	6	0	4	<1
General	Very	Fatigue	25	4	23	4
disorders and	Common	Asthenia	16	3	15	4
administration		Oedema peripheral	10	0	4	<1
site conditions	Common	Pyrexia	9	0	8	0
		Chest pain	5	<1	4	<1
Gastro-	Very	Nausea	27	<1	25	<1
intestinal	Common	Constipation	16	<1	13	<1
disorders		Diarrhoea	15	<1	11	0
		Vomiting	12	<1	12	<1
	Common	Stomatitis	6	0	4	0
Respiratory thoracic and	Very Common	Dyspnoea	12	3	12	3
mediastinal	Common	Cough	9	<1	7	0
disorders		Epistaxis	7	0	2	0
		Haemoptysis	4	<1	5	0

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Table 7: Adverse Reactions Reported in ≥5% of Patients in Non-Small Cell Lung Cancer Clinical Trial (by MedDRA System Organ Class and Preferred Term) (Continued)

System Frequency		Preferred Term	ABRAXANE (100 mg/m²/week) and carboplatin (N=514)		Solvent-based paclitaxel (200 mg/m² every 3 weeks) and carboplatin (N=524)	
Organ Class			All Grades Toxicity <sup>2</sup> (%)	Grade 3 or Higher Toxicity <sup>3</sup> (%)	All Grades Toxicity <sup>2</sup> (%)	Grade 3 or Higher Toxicity <sup>3</sup> (%)
Investigations	Common	Alanine aminotransferase increased	9	2	9	<1
		Weight decreased Aspartate aminotransferase increased	8 8	1 <1	6	<1 <1
Musculo-	Very	Arthralgia	13	<1	25	2
skeletal and connective tissue disorders	Common	Myalgia	10	<1	19	2
Metabolic and nutrition disorders	Very Common	Decreased appetite	17	2	18	<1
Infections and infestations	Common	Pneumonia	5	2	3	2
Psychiatric disorders	Common	Insomnia	5	0	8	<1

MedDRA = Medical Dictionary for Regulatory Activities; SMQ = Standardized MedDRA Query.

Additional clinically relevant adverse reactions that were reported in ≥1% and <5% of the non-small cell lung cancer patients who received ABRAXANE and carboplatin included:

Blood and lymphatic system disorders: lymphopenia, febrile neutropenia

Skin and subcutaneous tissue disorders: nail disorder, pruritus

Nervous system disorders: peripheral motor neuropathy, paraesthesia

Gastrointestinal disorders: dyspepsia, abdominal pain, dysphagia

*Investigations:* blood alkaline phosphatase increased

<sup>&</sup>lt;sup>1</sup> The incidence rates in both arms for "All Grades Toxicity" and "Grade 3 or Higher Toxicity" are based on laboratory assessments. Source: CA031 Table 22.0.0. Maximal Degree of Myelosuppression (Treated Population); Neutropenia and Thrombocytopenia: N=508 for the ABRAXANE and carboplatin arm and N=513 for the solvent-based paclitaxel and carboplatin arm; Anaemia and Leukopenia: N=508 for the ABRAXANE and carboplatin arm and N=514 for the solvent-based paclitaxel and carboplatin arm.

<sup>&</sup>lt;sup>2</sup> Incidences in ≥5% of patients in either arm are included. Source: CA031 Table 21.17.0. Incidence of Treatment-Emergent Adverse Events by MedDRA System Organ Class and Preferred Term (Treated Population); CA031 Table 21.17.0 includes Grades 1-5.

<sup>&</sup>lt;sup>3</sup> Source: CA031 Table 21.18.1. Incidence of Treatment-Emergent Grade 3 or Higher Adverse Events by MedDRA System Organ Class and Preferred Term (Treated Population).

<sup>&</sup>lt;sup>4</sup> Peripheral neuropathy is defined by the MedDRA v14.0 SMQ neuropathy (broad scope). Sources: CA031 Table 21.17.6 and CA031 Table 21.20.7.

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Musculoskeletal and connective tissue disorders: back pain, pain in extremity, musculoskeletal pain

Metabolic and nutrition disorders: dehydration

Infections and infestations: bronchitis, upper respiratory tract infection, urinary tract

infection

Vascular disorders: hypotension, hypertension

Eye disorders: vision blurred

Hepatobiliary disorders: hyperbilirubinaemia

Additional clinically relevant adverse reactions that were reported in <1% of the non-small cell lung cancer patients who received ABRAXANE and carboplatin included:

Blood and lymphatic system disorders: pancytopenia

Skin and subcutaneous tissue disorders: dermatitis allergic, urticaria, skin exfoliation General disorders and administration site conditions: mucosal inflammation, infusion site extravasation, infusion site inflammation, infusion site rash

Respiratory thoracic and mediastinal disorders: pneumonitis

Infections and infestations: oral candidiasis, sepsis

Vascular disorders: flushing

Immune system disorders: drug hypersensitivity, hypersensitivity

# **Summary of the Safety Profile**

Significantly less ≥ grade 3 neuropathy, neutropenia, arthralgia, and myalgia occurred in the ABRAXANE arm, while less thrombocytopenia and anaemia occurred in the paclitaxel arm.

#### **Peripheral Neuropathy**

In the non-small cell lung cancer study, peripheral neuropathy was graded by the investigator according to National Cancer Institute Common Terminology Criteria for Adverse Events, Version 3.0. For ABRAXANE and carboplatin, the median time to first occurrence of grade 3 peripheral neuropathy was 121 days, and the median time to improvement from grade 3 peripheral neuropathy to grade 1 was 38 days. No patients treated with ABRAXANE and carboplatin had grade 4 peripheral neuropathy.

Patient-reported taxane toxicity was assessed using the 4 subscales of the Functional Assessment of Cancer Therapy (FACT)-Taxane questionnaire. Using repeated measure analysis, 3 of the 4 subscales (peripheral neuropathy, pain hands/feet, and hearing) favored ABRAXANE and carboplatin ( $p \le 0.002$ ). For the other subscale (edema), there was no difference in the treatment arms.

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Post-marketing experience

<u>Table 8: Adverse Reactions Reported during Post-Marketing (by MedDRA System Organ Class and Preferred Term in Alphabetical Order)</u>

_System Organ Class	Preferred Term
Blood and Lymphatic System Disorders	Pancytopenia
Cardiac Disorders	Atrioventricular block
Eye Disorders	Cystoid macular edema
Nervous System Disorders	Cranial nerve palsies, vocal cord paresis
Respiratory, Thoracic and Mediastinal Disorders	Pneumonitis, radiation pneumonitis
Skin/Subcutaneous Disorders	Erythema, maculo-papular rash, palmar-plantar erythrodysaesthesiae in patients previously exposed to capecitabine, photosensitivity reaction, Stevens-Johnson syndrome, toxic epidermal necrolysis
Injury, Poisoning and Procedural Complications	Radiation recall phenomenon
General Disorders and Administration Site Conditions	Extravasation
Immune System Disorders	Severe hypersensitivity

# DOSAGE AND ADMINISTRATION

The reconstituted suspension is milky and homogenous without visible particles.

ABRAXANE should be administered under the supervision of a physician experienced in the use of chemotherapeutic agents.

ABRAXANE is for single use in one patient only. Discard any residue.

No premedication to prevent hypersensitivity reactions is required prior to administration of ABRAXANE.

#### **Metastatic Breast Cancer**

The recommended dose for ABRAXANE is 260 mg/m<sup>2</sup> administered intravenously over 30 minutes every 3 weeks.

## **Dose Adjustments During Treatment**

Patients who experience severe neutropenia (neutrophil <0.5 x 10<sup>9</sup>/L for a week or longer) or severe sensory neuropathy during ABRAXANE therapy should have dosage reduced to 220

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mg/m² for subsequent courses of ABRAXANE. For recurrence of severe neutropenia or severe sensory neuropathy, additional dose reduction should be made to  $180 \text{ mg/m}^2$ . ABRAXANE should not be administered until neutrophil counts recover to  $>1.5 \times 10^9/L$ . For grade 3 sensory neuropathy hold treatment until resolution to grade 1 or 2, followed by a dose reduction for all subsequent courses of ABRAXANE.

# Non-Small Cell Lung Cancer

The recommended dose of ABRAXANE is 100 mg/m<sup>2</sup> administered as an intravenous infusion over 30 minutes on Days 1, 8, and 15 of each 21-day cycle. The recommended dose of carboplatin is AUC = 6 mg•min/mL on Day 1 only of each 21-day cycle, beginning immediately after the end of ABRAXANE administration. Day 1 is the only day of each 21-day cycle when carboplatin is used in combination with ABRAXANE.

# **Dose Adjustments During Treatment**

# Haematologic toxicities

ABRAXANE should not be administered on Day 1 of a cycle until absolute neutrophil count (ANC) is  $\ge 1.5 \times 10^9 / L$  and platelet count is  $\ge 100 \times 10^9 / L$ . For each subsequent weekly dose of ABRAXANE, patients must have an ANC  $\ge 0.5 \times 10^9 / L$  and platelets  $> 50 \times 10^9 / L$  or the dose is to be withheld until counts recover. When counts recover, resume dosing the following week according to the criteria in Table 9. Reduce subsequent dose only if criteria in Table 9 are met. Weekly pre-dose full blood counts should be performed (see PRECAUTIONS, Haematology).

Table 9: Dose Reductions for Haematologic Toxicities in NSCLC

Haematologic Toxicity	Occurrence	Dose of ABRAXANE (mg/m²)	Dose of carboplatin (AUC mg•min/mL)	
Nadir ANC $< 0.5 \times 10^9$ /L with neutropenic fever $> 38^{\circ}$ C	First	75	4.5	
OR Delay of next cycle due to persistent	Second	50	3.0	
neutropenia <sup>1</sup> (Nadir ANC <1.5 x 10 <sup>9</sup> /L)  OR  Nadir ANC <0.5 x 10 <sup>9</sup> /L for > 1 week	Third	Discont	Discontinue Treatment	
Nadir platelets <50 x 10 <sup>9</sup> /L	First	75	4.5	
	Second	Discontinue Treatment		

Maximum of 7 days post scheduled Day 1 dose of next cycle.

#### Nonhaematologic toxicities

Guidelines for implementing dose reductions for nonhaematologic toxicities are provided in Table 10. For Grade 2 or 3 cutaneous toxicity, Grade 3 mucositis, or Grade 3 diarrhoea, interrupt treatment until the toxicity improves to  $\leq$  Grade 1, then restart treatment according to the guidelines in Table 10. For  $\geq$  Grade 3 peripheral neuropathy, withhold treatment until resolution  $\leq$  Grade 1. Treatment may be resumed at the next lower dose level in subsequent cycles according to the guidelines in Table 10. For any other Grade 3 or 4 nonhaematologic toxicity excluding alopecia, interrupt treatment until the toxicity improves to  $\leq$  Grade 2, then restart treatment according to the guidelines in Table 10.

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 Table 10:
 Dose Reductions for Nonhaematologic Toxicities in NSCLC

Nonhaematologic Toxicity	Occurrence	Dose of ABRAXANE (mg/m²)	Dose of carboplatin (AUC mg•min/mL)	
Grade 2 or 3 cutaneous toxicity Grade 3 diarrhoea	First	75	4.5	
Grade 3 mucositis  ≥ Grade 3 Peripheral neuropathy	Second	50	3.0	
Any other Grade 3 or 4 nonhaematologic toxicity excluding alopecia	Third	Discont	ntinue Treatment	
Grade 4 cutaneous toxicity, diarrhoea, or mucositis	First	Discontinue Treatment		

#### **Missed Dose**

ABRAXANE is administered every three weeks. In the event that the next scheduled dose is missed, dosing should occur as soon as possible, consistent with good medical practice, after the missed dose.

#### **Hepatic Impairment**

Patients with severe hepatic impairment (bilirubin > 5 x ULN or AST/ALT > 10 x ULN) should not be treated with ABRAXANE. The appropriate dose regimen in patients with less severe hepatic impairment is unknown. A dose reduction in patients with bilirubin >2 ULN must be considered since paclitaxel clearance is decreased in patients with high bilirubin levels.

## **Patients with Impaired Renal Function**

Studies in patients with impaired renal function have not been performed and there is insufficient data to permit dosage recommendations in this patient population.

## **Preparation and Administration Precautions**

ABRAXANE is a cytotoxic anticancer drug and, as with other potentially toxic paclitaxel compounds, caution should be exercised in handling ABRAXANE. The use of gloves is recommended. If ABRAXANE (lyophilised cake or reconstituted suspension) contacts the skin, wash the skin immediately and thoroughly with soap and water. Following topical exposure to paclitaxel, events may include tingling, burning and redness. If ABRAXANE contacts mucous membranes, the membranes should be flushed thoroughly with water.

Given the possibility of extravasation, it is advisable to closely monitor the infusion site for possible infiltration during drug administration. Limiting the infusion of ABRAXANE to 30 minutes, as directed, reduces the likelihood of infusion-related reactions.

Each mL of the reconstituted formulation will contain 5 mg/mL paclitaxel.

Calculate the exact total dosing volume of 5 mg/mL suspension required for the patient: Dosing volume (mL) = Total dose (mg)/5 (mg/mL)

Do not mix any other drugs with the ABRAXANE infusion.

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# **Preparation for Intravenous Administration**

ABRAXANE is supplied as a sterile lyophilised powder for reconstitution before use. **AVOID ERRORS, READ ENTIRE PREPARATION INSTRUCTIONS PRIOR TO RECONSTITUTION**.

Vial Size	Volume of Diluent to be Added to Vial	Approximate Available Volume	Nominal Concentration per mL
50 mL	20 mL	20 mL	5 mg/mL

- 1. Aseptically, reconstitute each vial by injecting 20 mL of 0.9% Sodium Chloride Injection.
- 2. Slowly inject the 20 mL of 0.9% Sodium Chloride Injection over a minimum of 1 minute, using the sterile syringe to direct the solution flow onto the INSIDE WALL OF THE VIAL.



- 3. DO NOT INJECT the 0.9% Sodium Chloride Injection directly onto the lyophilised cake as this will result in foaming.
- 4. Once the injection is complete, allow the vial to stand for a minimum of 5 minutes to ensure proper wetting of the lyophilised cake/powder.
- 5. Gently swirl and/or invert the vial slowly for at least 2 minutes until complete dissolution of any cake/powder occurs. Avoid generation of foam.
- 6. If foaming or clumping occurs, stand solution for at least 15 minutes until foam subsides.

The reconstituted sample should be milky and homogenous without visible particulates. If particulates or settling are visible, the vial should be **gently** inverted again to ensure complete resuspension prior to use. Discard the reconstituted suspension if precipitates are observed. Discard any unused portion.

Inject the appropriate amount of reconstituted ABRAXANE into an empty, sterile, polyvinyl chloride (PVC) or non-PVC type IV bag. The use of specialised DEHP-free solution containers or administration sets is not necessary, but may be used if desired to prepare or administer ABRAXANE infusions. The use of an in-line filter is not recommended.

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Parenteral drug products should be inspected visually for particulate matter and discolouration prior to administration whenever solution and container permit.

Retain in the original package to protect from bright light.

Unopened vials of ABRAXANE are stable until the date indicated on the package when stored between 20°C to 25°C, in the original package.

Neither freezing nor refrigeration adversely affects the stability of the product.

# Stability of Reconstituted Suspension in the Vial

Reconstituted ABRAXANE should be used immediately, but may be refrigerated at 2°C to 8°C (36°F to 46°F) for a maximum of 8 hours if necessary. If not used immediately, each vial of reconstituted suspension should be replaced in the original carton to protect it from bright light. Discard any unused portion.

# Stability of the Reconstituted Suspension in the Infusion Bag

The suspension for infusion prepared as recommended in an infusion bag should be used immediately. To reduce microbiological hazard, use as soon as practicable after dilution. If storage is necessary, hold at 2 - 8°C for not more than 8 hours.

# **Handling and Disposal**

Procedures for proper handling and disposal of anticancer drugs should be considered. Several guidelines on this subject have been published. There is no general agreement that all of the procedures recommended in the guidelines are necessary or appropriate.

## **OVERDOSAGE**

There is no known antidote for ABRAXANE overdosage. The primary anticipated complications of overdosage would consist of bone marrow suppression, sensory neurotoxicity, and mucositis.

#### PRESENTATION AND STORAGE CONDITIONS

## **Pack**

ABRAXANE is supplied as a white to yellow, sterile, lyophilised cake for reconstitution in a 50 mL clear Type I glass vial with a latex free, bromo butyl rubber stopper, individually packaged in a carton. Each single use vial contains 100 mg of paclitaxel and 900 mg of human albumin. ABRAXANE is free of solvents.

After reconstitution with 20 mL of 0.9% Sodium Chloride Injection each millilitre (mL) of reconstituted suspension contains 5 mg of paclitaxel.

Pack Size: 1 single vial in a carton.

AUST R 133500

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#### **Storage**

Store the vials in original cartons below 25°C. Protect from light.

#### NAME AND ADDRESS OF SPONSOR

#### In Australia:

Abraxis BioScience Australia Pty Ltd Level 1, 711 High Street East Kew, Victoria 3102

Distributed by Specialised Therapeutics Australia Pty Ltd

Ph: 1300 798 820 Fax: 1800 798 829

www.specialisedtherapeutics.com.au

# In New Zealand:

Pharmacy Retailing (NZ) Limited trading as Healthcare Logistics PO Box 62027 Mt Wellington AUCKLAND New Zealand

Ph: (09) 918 5100 Fax: (09) 918 5101

## POISON SCHEDULE / CLASSIFICATION

**S4 / PRESCRIPTION MEDICINE** 

# DATE OF FIRST INCLUSION IN THE AUSTRALIAN REGISTER OF THERAPEUTIC GOODS (THE ARTG)

17 October 2008

#### DATE OF THE MOST RECENT AMENDMENT

02 September 2013

Approved by Medsafe on 15 July 2010

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