Nanoparticle albumin bound paclitaxel (nabpaclitaxel): Drug information

(For additional information see "Nanoparticle albumin bound paclitaxel (nabpaclitaxel): Patient drug information")

For abbreviations and symbols that may be used in Lexicomp (show table)

ALERT: US Boxed Warning

Do not interchange:

An albumin form of paclitaxel may substantially affect a drug's functional properties relative to those of drug in solution. Do not substitute for or with other paclitaxel formulations.

Neutropenia:

Do not give to patients who have baseline neutrophil counts of less than 1,500 cells/mm^3. In order to monitor the occurrence of bone marrow suppression, primarily neutropenia, which may be severe and result in infection, perform frequent peripheral blood cell counts on all patients.

Brand Names: US

Abraxane

Brand Names: Canada

Abraxane for Injectable Suspension

Pharmacologic Category

Antineoplastic Agent, Antimicrotubular; Antineoplastic Agent, Taxane Derivative

Dosing: Adult

Note: When administered as part of a combination chemotherapy regimen, sequence of administration may vary by regimen; refer to specific protocol for sequence of administration. Premedication is not generally necessary prior to paclitaxel (protein bound), but may be needed in patients with prior mild-to-moderate hypersensitivity reactions.

Breast cancer, metastatic: IV: 260 mg/m^2 every 3 weeks (Gradishar 2005)

Off-label dosing: IV: 100 to 150 mg/m^2 on days 1, 8, and 15 of a 28-day cycle (Gradishar 2009)

Non-small cell lung cancer (NSCLC), locally advanced or metastatic: IV: 100 mg/m^2 on days 1, 8, and 15 of each 21-day cycle (in combination with carboplatin) (Socinski 2012)

Pancreatic adenocarcinoma, metastatic: IV: 125 mg/m^2 on days 1, 8, and 15 of a 28-day cycle (in combination with gemcitabine) (Von Hoff 2013)

Melanoma, metastatic (off-label use): IV:

Previously treated patients: 100 mg/m^2 on days 1, 8, and 15 of a 28-day cycle; if tolerated, may increase dose by 25 mg/m^2 in cycle 2 and beyond (Hersh 2010)

Previously untreated patients: 150 mg/m^2 on days 1, 8, and 15 of a 28-day cycle (Hersh 2010)

Ovarian, fallopian tube, or primary peritoneal cancer, recurrent (off-label use): IV: 260 mg/m^2 on day 1 of a 21-day cycle for 6 to 8 cycles (Teneriello 2009) **or** 100 mg/m^2 on days 1, 8, and 15 of a 28-day cycle until disease progression or unacceptable toxicity (Coleman 2011)

Dosing: Geriatric

Refer to adult dosing.

Dosing: Renal Impairment

CrCl ≥30 mL/minute: No dosage adjustment necessary

CrCl <30 mL/minute: There are no dosage adjustments provided in the manufacturer's labeling (has not been studied)

End-stage renal disease (ESRD): There are no dosage adjustments provided in the manufacturer's labeling (has not been studied)

Dosing: Hepatic Impairment

Dosage adjustment for hepatic impairment at treatment initiation:

Breast cancer (every 3 week regimen):

Mild impairment (AST ≤10 times ULN and bilirubin >1 to ≤1.5 times ULN): No dosage adjustment necessary.

Moderate impairment (AST ≤10 times ULN and bilirubin >1.5 to ≤3 times ULN): Reduce dose to 200 mg/m^2; may increase up to 260 mg/m^2 if the reduced dose is tolerated for 2 cycles

Severe impairment:

AST ≤10 times ULN and bilirubin >3 to ≤5 times ULN: Reduce dose to 200 mg/m^2; may increase up to 260 mg/m^2 in subsequent cycles if the reduced dose is tolerated for 2 cycles

AST >10 times ULN or bilirubin >5 times ULN: Use is not recommended (has not been studied).

Non-small cell lung cancer (NSCLC) regimen:

Mild impairment (AST ≤10 times ULN and bilirubin >1 to ≤1.5 times ULN): No dosage adjustment necessary.

Moderate impairment (AST ≤10 times ULN and bilirubin >1.5 to ≤3 times ULN): Reduce dose to 80 mg/m^2; may increase up to 100 mg/m^2 in subsequent cycles if the reduced dose is tolerated for 2 cycles

Severe impairment:

AST ≤10 times ULN and bilirubin >3 to ≤5 times ULN: Reduce dose to 80 mg/m^2; may increase up to 100 mg/m^2 in subsequent cycles if the reduced dose is tolerated for 2 cycles

AST >10 times ULN or bilirubin >5 times ULN: Use is not recommended (has not been studied).

Pancreatic adenocarcinoma:

Mild impairment (AST ≤10 times ULN and bilirubin >1 to ≤1.5 times ULN): No dosage adjustment necessary.

Moderate impairment (AST ≤10 times ULN and bilirubin >1.5 to ≤3 times ULN): Use is not recommended.

Severe impairment:

AST ≤10 times ULN and bilirubin >3 to ≤5 times ULN: Use is not recommended.

AST >10 times ULN or bilirubin >5 times ULN: Use is not recommended.

Dosage adjustment for hepatic impairment during treatment: AST >10 times ULN or bilirubin >5 times ULN: Withhold treatment

Dosing: Obesity

ASCO Guidelines for appropriate chemotherapy dosing in obese adults with cancer: Utilize patient's actual body weight (full weight) for calculation of body surface area- or weight-based dosing, particularly when the intent of therapy is curative; manage regimen-related toxicities in the same manner as for nonobese patients; if a dose reduction is utilized due to toxicity, consider resumption of full weight-based dosing with subsequent cycles, especially if cause of toxicity (eg, hepatic or renal impairment) is resolved (Griggs 2012).

Dosing: Adjustment for Toxicity

Breast cancer (every 3 week regimen):

Severe neutropenia (<500 cells/mm^3) ≥1 week: Reduce dose to 220 mg/m^2 for subsequent courses

Recurrent severe neutropenia: Reduce dose to 180 mg/m^2 for subsequent courses

Sensory neuropathy

Grade 1 or 2: Dosage adjustment generally not required

Grade 3: Hold treatment until resolved to grade 1 or 2, then resume with reduced dose for all subsequent cycles

Severe sensory neuropathy: Reduce dose to 220 mg/m^2 for subsequent courses

Recurrent severe sensory neuropathy: Reduce dose to 180 mg/m^2 for subsequent courses

Non-small cell lung cancer (NSCLC):

Neutropenia: ANC <1,500 cells/mm^3: Withhold therapy until ANC is ≥1,500 cells/mm^3 on day 1 or ≥500 cells/mm^3 on days 8 or 15. Reduce dose upon therapy reinitiation if:

Neutropenic fever (ANC <500 cells/mm^3 with fever >38°C) **or** delay of next cycle by >7 days due to ANC <1,500 cells/mm^3 **or** ANC <500 cells/mm^3 for >7 days:

First occurrence: Permanently reduce dose to 75 mg/m^2

Second occurrence: Permanently reduce dose to 50 mg/m^2

Third occurrence: Discontinue therapy.

Thrombocytopenia: Platelet count <100,000 cells/mm^3: Withhold therapy until platelet count is ≥100,000 cells/mm^3 on day 1 or ≥50,000 cells/mm^3 on days 8 or 15. Reduce dose upon therapy reinitiation if:

Platelet count <50,000 cells/mm^3:

First occurrence: Permanently reduce dose to 75 mg/m^2

Second occurrence: Discontinue therapy.

Sensory neuropathy: Withhold therapy for grade 3 or 4 peripheral neuropathy. Resume therapy at reduced doses when neuropathy resolves completely or improves to grade 1:

First occurrence: Permanently reduce dose to 75 mg/m^2

Second occurrence: Permanently reduce dose to 50 mg/m^2

Third occurrence: Discontinue therapy.

Pancreatic adenocarcinoma:

Note: Dose level reductions for toxicity:

Full dose: 125 mg/m^2

First dose reduction: 100 mg/m^2

Second dose reduction: 75 mg/m^2

If additional dose reduction is necessary: Discontinue.

Hematologic toxicity (neutropenia and/or thrombocytopenia):

Day 1: If ANC is <1,500 cells/mm^3 or platelet count is <100,000 cells/mm^3: Withhold therapy until ANC is ≥1,500 cells/mm^3 and platelet count is ≥100,000 cells/mm^3

Day 8:

If ANC is 500 to <1,000 cells/mm^3 **or** platelet count is 50,000 to <75,000 cells/mm^3: Reduce 1 dose level

If ANC is <500 cells/mm^3 **or** platelet count is <50,000 cells/mm^3: Withhold day 8 dose

Day 15:

US labeling:

If day 8 doses were reduced or given without modification:

If ANC is 500 to <1,000 cells/mm^3 **or** platelet count is 50,000 to <75,000 cells/mm^3: Reduce 1 dose level from day 8

If ANC is <500 cells/mm^3 **or** platelet count is <50,000 cells/mm^3: Withhold day 15

dose

If day 8 doses were withheld:

If ANC is ≥1000 cells/mm^3 **or** platelet count is ≥75,000 cells/mm^3: Reduce 1 dose level from day 1

If ANC is 500 to <1,000 cells/mm^3 **or** platelet count is 50,000 to <75,000 cells/mm^3: Reduce 2 dose levels from day 1

If ANC is <500 cells/mm^3 **or** platelet count is <50,000 cells/mm^3: Withhold day 15 dose

Canadian labeling:

If day 8 doses were given without modification:

If ANC is 500 to <1,000 cells/mm^3 or platelet count is 50,000 to <75,000 cells/mm^3: Treat at current dose and follow with WBC growth factors or reduce 1 dose level from day 8 if growth factors are not available

If ANC is <500 cells/mm^3 or platelet count is <50,000 cells/mm^3: Withhold day 15 dose

If day 8 doses were reduced:

If ANC is ≥1,000 cells/mm^3 and platelet count is ≥75,000 cells/mm^3: Treat with day 1 dose and follow with WBC growth factors or reduce 1 dose level from day 1 if growth factors are not available

If ANC is 500 to <1,000 cells/mm^3 or platelet count is 50,000 to <75,000 cells/mm^3: Treat with day 8 dose and follow with WBC growth factors or reduce 1 dose level from day 8 if growth factors are not available

If ANC is <500 cells/mm^3 or platelet count is <50,000 cells/mm^3: Withhold day 15 dose

If day 8 doses were withheld:

If ANC is ≥1,000 cells/mm^3 and platelet count is ≥75,000 cells/mm^3: Treat with day 1 dose and follow with WBC growth factors or reduce 1 dose level from day 1 if growth factors are not available

If ANC is 500 to <1,000 cells/mm^3 or platelet count is 50,000 to <75,000 cells/mm^3: Reduce 1 dose level from day 1 and follow with WBC growth factors or reduce 2 dose levels from day 1 if growth factors are not available

If ANC is <500 cells/mm^3 or platelet count is <50,000 cells/mm^3: Withhold day 15 dose

Neutropenic fever: Withhold therapy for grade 3 or 4 fever. Resume therapy at next lower dose level when fever resolves and ANC is ≥1500 cells/mm^3.

Peripheral neuropathy: Withhold therapy for grade 3 or 4 peripheral neuropathy. Resume therapy at next lower dose level when neuropathy improves to ≤grade 1.

Dermatologic toxicity: For grade 2 or 3 toxicity, reduce dose to next lower dose level; if toxicity persists, discontinue.

Gastrointestinal toxicity: Withhold therapy for grade 3 mucositis or diarrhea. Resume therapy at next lower dose level when improves to ≤grade 1.

Dosage Forms Excipient information presented when available (limited, particularly for generics); consult specific product labeling.

Suspension Reconstituted, Intravenous:

Abraxane: 100 mg (1 ea)

Generic Equivalent Available (US) No

Administration IV: Administer over 30 minutes (breast cancer and NSCLC) or over 30 to 40 minutes (pancreatic cancer); limiting the infusion rate to 30 minutes reduces the risk for infusion-related reaction. Monitor infusion site; avoid extravasation. When given on a weekly (off-label) schedule, infusions were administered over ~30 minutes (Gradishar 2009; Hersh 2010; Rizvi 2008). When administered as part of a combination chemotherapy regimen, sequence of administration may vary by regimen; refer to specific protocol for sequence of administration. According to the manufacturer, paclitaxel (protein bound should be given first, followed immediately by carboplatin (NSCLC) or gemcitabine (pancreatic cancer).

Hazardous Drugs Handling Considerations

Hazardous agent (NIOSH 2016 [group 1]).

Use appropriate precautions for receiving, handling, administration, and disposal). Gloves (single) should be worn during receiving, unpacking, and placing in storage.

NIOSH recommends double gloving, a protective gown, ventilated engineering controls (a class II biological safety cabinet or a compounding aseptic containment isolator), and closed system transfer devices (CSTDs) for preparation. Double gloving, a gown, and (if dosage form allows) CSTDs are required during administration (NIOSH 2016).

Use

US labeling:

Breast cancer, metastatic: Treatment of refractory (metastatic) or relapsed (within 6 months of adjuvant therapy) breast cancer after failure of combination chemotherapy (including anthracycline-based therapy unless clinically contraindicated)

Non-small cell lung cancer (NSCLC): First-line treatment of locally advanced or metastatic NSCLC (in combination with carboplatin) in patients ineligible for curative surgery or radiation therapy

Pancreatic adenocarcinoma: First-line treatment of metastatic adenocarcinoma of the pancreas (in combination with gemcitabine)

Canadian labeling:

Breast cancer, metastatic: Treatment of metastatic breast cancer

Pancreatic adenocarcinoma: First-line treatment of metastatic adenocarcinoma of the pancreas (in combination with gemcitabine)

Use: Off-Label

Melanoma, metastatic; Ovarian, fallopian tube, or primary peritoneal cancers (recurrent)

Medication Safety Issues

Sound-alike/look-alike issues:

PACLitaxel (protein bound) may be confused with PACLitaxel (conventional)

Abraxane may be confused with Paxil, Taxol, Taxotere

High alert medication:

This medication is in a class the Institute for Safe Medication Practices (ISMP) includes among its list of drug classes which have a heightened risk of causing significant patient harm when used in error.

Adverse Reactions Frequency may vary based on indication and/or concomitant therapy.

>10%:

Cardiovascular: ECG abnormality (60%; 35% in patients with a normal baseline), peripheral edema (10% to 46%)

Central nervous system: Peripheral sensory neuropathy (71%; grades 3/4: 10%; dose dependent; cumulative), fatigue (25% to 59%), peripheral neuropathy (48% to 54%; grade 3: 3% to 17%), headache (14%), depression (12%)

Dermatologic: Alopecia (50% to 90%), skin rash (10% to 30%)

Endocrine & metabolic: Dehydration (21%), increased gamma-glutamyl transferase (grades 3/4: 14%), hypokalemia (12%)

Gastrointestinal: Nausea (27% to 54%; grades 3/4: 3% to 6%), diarrhea (15% to 44%; grades 3/4: ≤6%), decreased appetite (17% to 36%), vomiting (12% to 36%; grades 3/4: 4% to 6%), constipation (16%), dysgeusia (16%)

Genitourinary: Urinary tract infection (11%)

Hematologic & oncologic: Anemia (33% to 98%; grades 3/4: 1% to 28%), neutropenia (73% to 85%; grades 3/4: 34% to 47%), thrombocytopenia (2% to 74%; grades 3/4: <1% to 18%), bone marrow depression (dose-related)

Hepatic: Increased serum AST (39%), increased serum alkaline phosphatase (36%)

Infection: Infection (24%; primarily included oral candidiasis, respiratory tract infection, and pneumonia)

Neuromuscular & skeletal: Weakness (16% to 47%; severe: 8%), musculoskeletal pain (10% to 44%; myalgia/arthralgia), limb pain (11%)

Ophthalmic: Visual disturbance (13%; severe [keratitis, blurred vision]: 1%)

Renal: Increased serum creatinine (11%; severe 1%)

Respiratory: Cough (7% to 17%), epistaxis (7% to 15%), dyspnea (12%)

Miscellaneous: Fever (41%)

1% to 10%:

Cardiovascular: Edema (10%), cardiac failure (<10%), hypotension (5%), significant cardiovascular event (grades 3/4: 3%; included chest pain, cardiac arrest, supraventricular tachycardia, thrombosis, pulmonary thromboembolism, pulmonary emboli, and hypertension)

Gastrointestinal: Mucositis (7% to 10%; grades 3/4: ≤1%)

Hematologic & oncologic: Hemorrhage (2%), febrile neutropenia (2%)

Hepatic: Increased serum bilirubin (7%)

Hypersensitivity: Hypersensitivity reaction (4%, includes anaphylactic reactions, chest pain, dyspnea, flushing, hypotension; severe: <1%)

Infection: Sepsis (5%)

Ophthalmic: Cystoid macular edema (<10%)

Respiratory: Pneumonitis (4%)

<1%, postmarketing, and/or case reports: Atrioventricular block, autonomic neuropathy, bradycardia, cardiac arrhythmia, cerebrovascular accident, cranial nerve palsy, decreased visual acuity, embolism, erythema, hepatic encephalopathy, hepatic necrosis, injection site reaction (mild), intestinal obstruction, intestinal perforation, ischemic colitis, ischemic heart disease, left ventricular dysfunction, maculopapular rash, myocardial infarction, nail discoloration, neutropenic sepsis, optic nerve damage (rare), palmar-plantar erythrodysesthesia (in patients previously exposed to capecitabine), pancreatitis, pancytopenia, paralytic ileus, peripheral motor neuropathy, pneumonia, pneumothorax, pruritus, pulmonary embolism, radiation pneumonitis (with concurrent radiation therapy), radiation recall phenomenon, skin photosensitivity, Stevens-Johnson syndrome, thrombosis, toxic epidermal necrolysis, transient ischemic attacks, ventricular dysfunction, vocal cord paralysis

Contraindications

Baseline neutrophil count of <1500/mm^3; severe hypersensitivity reaction to paclitaxel (protein bound) or any component of the formulation

Warnings/Precautions

Concerns related to adverse effects:

• Bone marrow suppression: **[US Boxed Warning]: Bone marrow suppression, primarily**

neutropenia, may occur; monitor peripheral blood counts frequently. Baseline neutrophils should be ≥1,500/mm^3 for administration on day 1 of each cycle; platelets should recover to >100,000/mm^3 prior to day 1 of the next treatment cycle. Hematologic toxicity is dose-dependent and dose-limiting. For severe neutropenia, dose reductions may be recommended for subsequent cycles.

• Cardiovascular effects: In a scientific statement from the American Heart Association, conventional paclitaxel has been determined to be an agent that may either cause direct myocardial toxicity or exacerbate underlying myocardial dysfunction (magnitude: moderate) (AHA [Page 2016]).

• Hypersensitivity: Severe hypersensitivity reactions (including anaphylaxis) have been reported; do not rechallenge after severe hypersensitivity reaction. Premedication is not generally necessary prior to paclitaxel (protein bound), but may be needed in patients with prior mild-to-moderate hypersensitivity reactions. Use has not been studied in patients with a prior hypersensitivity reaction to conventional paclitaxel or to albumin.

• Neuropathy: Dose- and schedule-related sensory neuropathy is common; severe sensory neuropathy may occur. If ≥ grade 3 sensory neuropathy occurs, withhold therapy until resolution to grade 1 or 2 (breast cancer) or ≤ grade 1 (non-small cell lung cancer [NSCLC] and pancreatic cancer). Upon recovery, subsequent cycles should be dose reduced. Prior therapy with neurotoxic agents may influence the frequency and severity of neurologic toxicity.

• Ocular effects: Vision disturbances including decreased visual acuity associated with cystoid macular edema (CME) have been observed; resolution observed in most cases following therapy discontinuation. Consider prompt/complete ophthalmologic evaluation in patients with vision changes/decreased acuity; the Canadian labeling recommends discontinuing therapy if CME is confirmed.

• Pneumonitis: Pneumonitis (including fatal cases) was observed in clinical trials when used in combination with gemcitabine. Monitor for signs/symptoms of pneumonitis; interrupt therapy during diagnostic process. If pneumonitis is confirmed, permanently discontinue.

• Sepsis: Sepsis was observed in both neutropenic and non-neutropenic patients treated with paclitaxel (protein bound) in combination with gemcitabine for pancreatic cancer; biliary obstruction and/or the presence of a biliary stent may be risk factors for severe and/or fatal sepsis. Treat promptly with broad spectrum antibiotics if fever occurs (regardless of neutrophil count). May require therapy interruption and/or dosage reduction.

Disease-related concerns:

• Hepatic impairment: Exposure may be increased in patients with hepatic impairment; monitor closely; the risk of toxicities (particularly myelosuppression) is increased. Reduced initial dosages are recommended for breast cancer and NSCLC patients with moderate and severe hepatic impairment; use is not recommended in pancreatic patients with moderate or severe impairment (bilirubin >1.5 times ULN and AST ≤10 times ULN). Use is not recommended in patients with AST >10 times ULN or total bilirubin >5 times ULN.

Concurrent drug therapy issues:

• Drug-drug interactions: Potentially significant interactions may exist, requiring dose or frequency adjustment, additional monitoring, and/or selection of alternative therapy. Consult drug interactions database for more detailed information.

Special populations:

• Elderly: Certain adverse events (myelosuppression, peripheral neuropathy, arthralgia, diarrhea, decreased appetite, dehydration, fatigue, and epistaxis) occurred more frequently in older adults ≥65 years compared to younger adults.

Dosage form specific issues:

• Albumin: Product contains albumin, which confers a remote risk of viral disease transmission and a theoretical risk of transmission of Creutzfeldt-Jakob disease.

Other warnings/precautions:

• Do not interchange: **[US Boxed Warning]: Paclitaxel (protein-bound) is not interchangeable with other forms of paclitaxel, including Cremophor-based or unbound paclitaxel.**

Metabolism/Transport Effects

Substrate of CYP2C8 (major), CYP3A4 (major), P-glycoprotein; **Note:** Assignment of Major/Minor substrate status based on clinically relevant drug interaction potential

Drug Interactions

(For additional information: Launch drug interactions program) Lexicomp®

Abiraterone Acetate: May increase the serum concentration of CYP2C8 Substrates. *Risk C: Monitor therapy*

Antineoplastic Agents (Anthracycline, Systemic): Taxane Derivatives may enhance the adverse/toxic effect of Antineoplastic Agents (Anthracycline, Systemic). Taxane Derivatives may increase the serum concentration of Antineoplastic Agents (Anthracycline, Systemic). Taxane Derivatives may also increase the formation of toxic anthracycline metabolites in heart tissue. *Risk D: Consider therapy modification*

Aprepitant: May increase the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

BCG (Intravesical): Immunosuppressants may diminish the therapeutic effect of BCG (Intravesical). *Risk X: Avoid combination*

BCG (Intravesical): Myelosuppressive Agents may diminish the therapeutic effect of BCG (Intravesical). *Risk X: Avoid combination*

Bosentan: May decrease the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

CloZAPine: Myelosuppressive Agents may enhance the adverse/toxic effect of CloZAPine. Specifically, the risk for neutropenia may be increased. *Risk C: Monitor therapy*

Coccidioides immitis Skin Test: Immunosuppressants may diminish the diagnostic effect of Coccidioides immitis Skin Test. *Risk C: Monitor therapy*

Conivaptan: May increase the serum concentration of CYP3A4 Substrates. *Risk X: Avoid combination*

CYP2C8 Inducers (Strong): May increase the metabolism of CYP2C8 Substrates. Management: Consider an alternative for one of the interacting drugs. Some combinations may be specifically contraindicated. Consult appropriate manufacturer labeling. *Risk D: Consider therapy modification*

CYP2C8 Inhibitors (Moderate): May decrease the metabolism of CYP2C8 Substrates. *Risk C: Monitor*

therapy

CYP2C8 Inhibitors (Strong): May decrease the metabolism of CYP2C8 Substrates. *Risk D: Consider therapy modification*

CYP3A4 Inducers (Moderate): May decrease the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

CYP3A4 Inducers (Strong): May increase the metabolism of CYP3A4 Substrates. Management: Consider an alternative for one of the interacting drugs. Some combinations may be specifically contraindicated. Consult appropriate manufacturer labeling. *Risk D: Consider therapy modification*

CYP3A4 Inhibitors (Moderate): May decrease the metabolism of CYP3A4 Substrates. *Risk C: Monitor therapy*

CYP3A4 Inhibitors (Strong): May decrease the metabolism of CYP3A4 Substrates. *Risk D: Consider therapy modification*

Dabrafenib: May decrease the serum concentration of CYP3A4 Substrates. Management: Seek alternatives to the CYP3A4 substrate when possible. If concomitant therapy cannot be avoided, monitor clinical effects of the substrate closely (particularly therapeutic effects). *Risk D: Consider therapy modification*

Dabrafenib: May decrease the serum concentration of CYP2C8 Substrates. Management: Seek alternatives to the CYP2C8 substrate when possible. If concomitant therapy cannot be avoided, monitor clinical effects of the substrate closely (particularly therapeutic effects). *Risk D: Consider therapy modification*

Dasatinib: May increase the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Deferasirox: May decrease the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Deferasirox: May increase the serum concentration of CYP2C8 Substrates. *Risk C: Monitor therapy*

Deferiprone: Myelosuppressive Agents may enhance the neutropenic effect of Deferiprone. *Risk X: Avoid combination*

Denosumab: May enhance the adverse/toxic effect of Immunosuppressants. Specifically, the risk for serious infections may be increased. *Risk C: Monitor therapy*

Dipyrone: May enhance the adverse/toxic effect of Myelosuppressive Agents. Specifically, the risk for agranulocytosis and pancytopenia may be increased *Risk X: Avoid combination*

DOXOrubicin (Conventional): Taxane Derivatives may decrease the metabolism of DOXOrubicin (Conventional). Management: Consider using docetaxel instead of paclitaxel as a way to avoid this potential interaction, and monitor closely for toxic effects of doxorubicin. Administer doxorubicin prior to paclitaxel when used concomitantly. *Risk D: Consider therapy modification*

Echinacea: May diminish the therapeutic effect of Immunosuppressants. *Risk D: Consider therapy modification*

Enzalutamide: May decrease the serum concentration of CYP3A4 Substrates. Management: Concurrent use of enzalutamide with CYP3A4 substrates that have a narrow therapeutic index should be avoided. Use of enzalutamide and any other CYP3A4 substrate should be performed with caution and close

monitoring. *Risk D: Consider therapy modification*

Fingolimod: Immunosuppressants may enhance the immunosuppressive effect of Fingolimod. Management: Avoid the concomitant use of fingolimod and other immunosuppressants when possible. If combined, monitor patients closely for additive immunosuppressant effects (eg, infections). *Risk D: Consider therapy modification*

Fosaprepitant: May increase the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Fusidic Acid (Systemic): May increase the serum concentration of CYP3A4 Substrates. *Risk X: Avoid combination*

Idelalisib: May increase the serum concentration of CYP3A4 Substrates. *Risk X: Avoid combination*

Leflunomide: Immunosuppressants may enhance the adverse/toxic effect of Leflunomide. Specifically, the risk for hematologic toxicity such as pancytopenia, agranulocytosis, and/or thrombocytopenia may be increased. Management: Consider not using a leflunomide loading dose in patients receiving other immunosuppressants. Patients receiving both leflunomide and another immunosuppressant should be monitored for bone marrow suppression at least monthly. *Risk D: Consider therapy modification*

Lenograstim: Antineoplastic Agents may diminish the therapeutic effect of Lenograstim. *Risk D: Consider therapy modification*

MiFEPRIStone: May increase the serum concentration of CYP2C8 Substrates. Management: Use CYP2C8 substrates at the lowest recommended dose, and monitor closely for adverse effects (including myopathy), during and in the 2 weeks following mifepristone treatment. *Risk D: Consider therapy modification*

MiFEPRIStone: May increase the serum concentration of CYP3A4 Substrates. Management: Minimize doses of CYP3A4 substrates, and monitor for increased concentrations/toxicity, during and 2 weeks following treatment with mifepristone. Avoid cyclosporine, dihydroergotamine, ergotamine, fentanyl, pimozide, quinidine, sirolimus, and tacrolimus. *Risk D: Consider therapy modification*

Mitotane: May decrease the serum concentration of CYP3A4 Substrates. Management: Doses of CYP3A4 substrates may need to be adjusted substantially when used in patients being treated with mitotane. *Risk D: Consider therapy modification*

Natalizumab: Immunosuppressants may enhance the adverse/toxic effect of Natalizumab. Specifically, the risk of concurrent infection may be increased. *Risk X: Avoid combination*

Netupitant: May increase the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Nivolumab: Immunosuppressants may diminish the therapeutic effect of Nivolumab. *Risk D: Consider therapy modification*

Ocrelizumab: May enhance the immunosuppressive effect of Immunosuppressants. *Risk C: Monitor therapy*

Palbociclib: May increase the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Palifermin: May enhance the adverse/toxic effect of Antineoplastic Agents. Specifically, the duration and severity of oral mucositis may be increased. Management: Do not administer palifermin within 24 hours before, during infusion of, or within 24 hours after administration of myelotoxic chemotherapy. *Risk D: Consider therapy modification*

P-glycoprotein/ABCB1 Inhibitors: May increase the serum concentration of P-glycoprotein/ABCB1 Substrates. P-glycoprotein inhibitors may also enhance the distribution of p-glycoprotein substrates to specific cells/tissues/organs where p-glycoprotein is present in large amounts (e.g., brain, T-lymphocytes, testes, etc.). *Risk C: Monitor therapy*

Pimecrolimus: May enhance the adverse/toxic effect of Immunosuppressants. *Risk X: Avoid combination*

Platinum Derivatives: May enhance the myelosuppressive effect of Taxane Derivatives. Administer Taxane derivative before Platinum derivative when given as sequential infusions to limit toxicity. *Risk D: Consider therapy modification*

Promazine: May enhance the myelosuppressive effect of Myelosuppressive Agents. *Risk C: Monitor therapy*

Ranolazine: May increase the serum concentration of P-glycoprotein/ABCB1 Substrates. *Risk C: Monitor therapy*

Roflumilast: May enhance the immunosuppressive effect of Immunosuppressants. *Risk D: Consider therapy modification*

Sarilumab: May decrease the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Siltuximab: May decrease the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Simeprevir: May increase the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Sipuleucel-T: Immunosuppressants may diminish the therapeutic effect of Sipuleucel-T. *Risk C: Monitor therapy*

St John's Wort: May decrease the serum concentration of CYP3A4 Substrates. Management: Consider an alternative for one of the interacting drugs. Some combinations may be specifically contraindicated. Consult appropriate manufacturer labeling. *Risk D: Consider therapy modification*

Stiripentol: May increase the serum concentration of CYP3A4 Substrates. Management: Use of stiripentol with CYP3A4 substrates that are considered to have a narrow therapeutic index should be avoided due to the increased risk for adverse effects and toxicity. Any CYP3A4 substrate used with stiripentol requires closer monitoring. *Risk D: Consider therapy modification*

Tacrolimus (Topical): May enhance the adverse/toxic effect of Immunosuppressants. *Risk X: Avoid combination*

Tertomotide: Immunosuppressants may diminish the therapeutic effect of Tertomotide. *Risk C: Monitor therapy*

Tocilizumab: May decrease the serum concentration of CYP3A4 Substrates. *Risk C: Monitor therapy*

Tofacitinib: Immunosuppressants may enhance the immunosuppressive effect of Tofacitinib. Management: Concurrent use with antirheumatic doses of methotrexate or nonbiologic disease modifying antirheumatic drugs (DMARDs) is permitted, and this warning seems particularly focused on more potent immunosuppressants. *Risk X: Avoid combination*

Trastuzumab: May enhance the neutropenic effect of Immunosuppressants. *Risk C: Monitor therapy*

Vaccines (Inactivated): Immunosuppressants may diminish the therapeutic effect of Vaccines

(Inactivated). Management: Vaccine efficacy may be reduced. Complete all age-appropriate vaccinations at least 2 weeks prior to starting an immunosuppressant. If vaccinated during immunosuppressant therapy, revaccinate at least 3 months after immunosuppressant discontinuation. *Risk D: Consider therapy modification*

Vaccines (Live): Immunosuppressants may enhance the adverse/toxic effect of Vaccines (Live). Immunosuppressants may diminish the therapeutic effect of Vaccines (Live). Management: Avoid use of live organism vaccines with immunosuppressants; live-attenuated vaccines should not be given for at least 3 months after immunosuppressants. *Risk X: Avoid combination*

Vinorelbine: PACLitaxel (Protein Bound) may enhance the neurotoxic effect of Vinorelbine. *Risk C: Monitor therapy*

Food Interactions Paclitaxel (protein bound) serum concentrations may be increased when taken with grapefruit or grapefruit juice. Management: Avoid concurrent use.

Pregnancy Risk Factor D (show table)

Pregnancy Implications Adverse events were observed in animal reproduction studies. An *ex vivo* human placenta perfusion model illustrated that paclitaxel (non-protein bound preparation) crossed the placenta at term. Placental transfer was low and affected by the presence of albumin; higher albumin concentrations resulted in lower paclitaxel placental transfer (Berveiller 2012). Women of childbearing potential should be advised to avoid becoming pregnant during therapy; may cause fetal harm if administered during pregnancy. Additionally, testicular atrophy/degeneration was observed in animal studies; males should be advised to not father a child during therapy. A pregnancy registry is available for all cancers diagnosed during pregnancy at Cooper Health (877-635-4499).

Breast-Feeding Considerations Paclitaxel (non-protein bound) is excreted in breast milk (case report). The mother (3 months postpartum) was treated with paclitaxel 30 mg/m^2 (56.1 mg) and carboplatin once weekly for papillary thyroid cancer. Milk samples were obtained 4-316 hours after the infusion given at the sixth and final week of therapy. The average paclitaxel milk concentration over the testing interval was 0.78 mg/L. Although maternal serum concentrations were not noted in the report, the relative infant dose to a nursing infant was calculated to be ~17% of the maternal dose. Paclitaxel continued to be detected in breast milk when sampled at 172 hours after the dose and was below the limit of detection when sampled at 316 hours after the infusion (Griffin 2012).

Due to the potential for serious adverse reactions in the nursing infant, the decision to discontinue the drug or to discontinue breast-feeding should take into consideration the benefit of treatment to the mother.

Monitoring Parameters CBC with differential (prior to day 1 of cycle for metastatic breast cancer and prior to days 1, 8, and 15 for NSCLC); hepatic function; monitor infusion site; monitor for neuropathy and signs/symptoms of pneumonitis and sepsis

Mechanism of Action Albumin-bound paclitaxel nanoparticle formulation; paclitaxel promotes microtubule assembly by enhancing the action of tubulin dimers, stabilizing existing microtubules, and inhibiting their disassembly, interfering with the late G_2 mitotic phase, and inhibiting cell replication. May also distort mitotic spindles, resulting in the breakage of chromosomes. Paclitaxel may also suppress cell proliferation and modulate immune response.

Pharmacodynamics/Kinetics

Distribution: V_d: 1741 L (extensive extravascular distribution and/or tissue binding)

Protein binding: 94%

Metabolism: Hepatic primarily via CYP2C8 to 6-alpha-hydroxypaclitaxel; also to minor metabolites via CYP3A4

Half-life elimination: Terminal: 13 to 27 hours

Excretion: Feces (~20%); urine (4% as unchanged drug, <1% as metabolites)

Pricing: US

Suspension (reconstituted) (Abraxane Intravenous)

100 mg (1): $1457.23

Disclaimer: The pricing data provide a representative AWP and/or AAWP price from a single manufacturer of the brand and/or generic product, respectively. The pricing data should be used for benchmarking purposes only, and as such should not be used to set or adjudicate any prices for reimbursement or purchasing functions. Pricing data is updated monthly.

International Brand Names

Abraxane (AE, AR, AT, AU, CN, CY, CZ, DE, DK, EC, EE, ES, FR, GB, GR, HK, HR, HU, IE, IL, IN, IS, JP, KR, LB, LK, LT, MT, NL, NO, NZ, PL, PT, RO, SE, SG, SI, SK, TR)

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