

This medicinal product is subject to additional monitoring in Australia. This will allow quick identification of new safety information. Healthcare professionals are asked to report any suspected adverse events at [www.tga.gov.au/reporting-problems](http://www.tga.gov.au/reporting-problems).

## AUSTRALIAN PRODUCT INFORMATION

### NUBEQA (DAROLUTAMIDE)

#### 1 NAME OF THE MEDICINE

Nubeqa (darolutamide)

#### 2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each film-coated tablet contains 300 mg of darolutamide.

Excipients with known effect:

Each film-coated tablet contains 176.9 mg of lactose (as lactose monohydrate).

For a full list of excipients, see section 6.1 List of excipients.

#### 3 PHARMACEUTICAL FORM

White to off-white, oval, film-coated tablets with a length of 16 mm and a width of 8 mm, marked with “300” on one side, and “BAYER” on the other side.

#### 4 CLINICAL PARTICULARS

##### 4.1 THERAPEUTIC INDICATIONS

Nubeqa is indicated for the treatment of patients with non-metastatic castration resistant prostate cancer (nmCRPC).

##### 4.2 DOSE AND METHOD OF ADMINISTRATION

###### *Method of administration*

For oral use.

###### *Dosage regimen*

The recommended dose is 600 mg (two film-coated tablets of 300 mg) darolutamide taken twice daily, equivalent to a total daily dose of 1200 mg.

The tablets should be taken whole with food (see section **5.2 PHARMACOKINETIC PROPERTIES**).

Patients receiving Nubeqa should also receive a gonadotropin-releasing hormone (GnRH) analog concurrently or should have had bilateral orchiectomy.

If a dose of Nubeqa is missed, the dose should be taken as soon as the patient remembers prior to the next scheduled dose. The patient should not take two doses together to make up for a missed dose.

### ***Dose modification***

If a patient experiences a  $\geq$  Grade 3 toxicity or an intolerable adverse reaction, dosing should be withheld or reduced to 300 mg twice daily until symptoms improve. Then treatment may be resumed at a dose of 600 mg twice daily.

Dose reduction below 300 mg twice daily is not recommended. The maximum efficacious daily dose is the recommended dose of 600 mg twice daily (see **section 5.2 PHARMACOKINETIC PROPERTIES**).

### ***Additional information on special populations***

#### ***Paediatric patients***

The safety and efficacy of Nubeqa in children and adolescents below 18 years of age have not been established.

#### ***Elderly***

In clinical studies, no clinically relevant differences in safety or efficacy were observed between elderly patients aged 65-74 years, 75-84 years or  $\geq$  85 years and younger patients (aged  $<$  65 years). No dose adjustment is necessary in elderly patients (see also section 5.2 Pharmacokinetic properties’).

#### ***Patients with hepatic impairment***

No dose adjustment is necessary for patients with mild hepatic impairment.

The recommended dose for patients with moderate hepatic impairment (Child-Pugh B) is 300 mg twice daily.

The effect of severe hepatic impairment (Child-Pugh C) on darolutamide pharmacokinetics is unknown.

#### ***Patients with renal impairment***

No dose adjustment is necessary for patients with mild and moderate renal impairment.

The recommended dose for patients with severe renal impairment (eGFR 15-29 mL/min/1.73m<sup>2</sup>) is 300 mg twice daily.

The pharmacokinetics of darolutamide has not been studied in patients with end stage renal disease receiving dialysis (eGFR <15 mL/min/1.73 m<sup>2</sup>).

#### **4.3 CONTRAINDICATIONS**

- Hypersensitivity to the active substance or to any of the excipients listed in section 6.1
- women who are or may become pregnant

#### **4.4 SPECIAL WARNINGS AND PRECAUTIONS FOR USE**

##### ***Cardiovascular***

The safety of darolutamide has not been characterised in patients with recent (within 6 months) cardiovascular events, including uncontrolled hypertension, stroke, myocardial infarction, severe/unstable angina pectoris, coronary/peripheral artery bypass graft, and NYHA Class III or IV congestive heart failure, as these patients were excluded from the pivotal study.

##### ***Use in hepatic impairment***

See section **4.2 DOSE AND METHOD OF ADMINISTRATION - *Additional information on special populations in Patients with hepatic impairment***

##### ***Use in renal impairment***

See section **4.2 DOSE AND METHOD OF ADMINISTRATION - *Additional information on special populations in Patients with renal impairment***

##### ***Use in the elderly***

See section **4.2 DOSE AND METHOD OF ADMINISTRATION - *Additional information on special populations in Geriatric patients***

##### ***Paediatric use***

See section **4.2 DOSE AND METHOD OF ADMINISTRATION - *Additional information on special populations in Paediatric patients***

##### ***Effects on laboratory tests***

See section **4.8 ADVERSE EFFECTS (UNDESIRABLE EFFECTS).**

## 4.5 INTERACTIONS WITH OTHER MEDICINES AND OTHER FORMS OF INTERACTIONS

### Effects of other medicinal products on darolutamide

#### ***CYP3A4 and P-gp inducers***

Darolutamide is a substrate of CYP3A4 and P-glycoprotein (P-gp).

Repeated administration of rifampicin (600 mg), a strong CYP3A4 and a P-gp inducer, with a single dose of darolutamide (600 mg) together with food, resulted in a decrease of 72% in mean exposure [AUC(0-72)] and a decrease of 52% in C<sub>max</sub> of darolutamide.

Concomitant use of darolutamide with combined strong CYP3A4 inducers and P-gp inducers (e.g. carbamazepine, phenobarbital, St. John's Wort) should be avoided, unless there is no therapeutic alternative. Selection of an alternate concomitant medicinal product, with no or weak potential to induce CYP3A4 or P-gp should be considered.

#### ***CYP3A4, P-gp and BCRP inhibitors***

Darolutamide is a substrate of CYP3A4, P gp and Breast Cancer Resistance Protein (BCRP).

Administration of itraconazole (200 mg twice daily on day 1 and once daily on the following 7 days), a strong CYP3A4, P gp and BCRP inhibitor, with a single dose of darolutamide (600 mg on day 5 together with food) resulted in a 1.7 fold increase in mean exposure [AUC(0-72)] and a 1.4 fold increase of C<sub>max</sub> of darolutamide.

Consider alternative therapies that do not strongly inhibit CYP3A4 and/or P-gp activity. In situations where satisfactory therapeutic alternatives do not exist, patients should be closely monitored for darolutamide related adverse events.

### Effects of darolutamide on other medicinal products

#### ***BCRP substrates***

Darolutamide is an inhibitor of Breast Cancer Resistance Protein (BCRP).

Administration of darolutamide (600 mg twice daily for 5 days) prior to co-administration of a single dose of rosuvastatin (5 mg) together with food, resulted in approximately 5-fold increase in mean exposure (AUC) and C<sub>max</sub> of rosuvastatin.

This indicates that co-administration of Nubeqa may increase the plasma concentrations of other concomitant BCRP substrates (e.g. methotrexate, sulfasalazine, fluvastatin, atorvastatin). Avoid concomitant use with BCRP substrates where possible. If used together, the related recommendation in the product information of the BCRP substrate should be followed.

### ***P-gp substrates***

Co-administration of darolutamide together with the sensitive P gp substrate dabigatran etexilate did not reveal any increase in exposure (AUC and Cmax) of dabigatran.

This indicates that Nubeqa may be given concomitantly with P-gp substrates without a clinically relevant drug-drug interaction.

### ***CYP substrates***

Darolutamide is a weak inducer of CYP3A4. Administration of darolutamide (600 mg twice daily for 9 days) prior to co-administration of a single dose of the sensitive CYP3A4 substrate midazolam (1 mg) together with food, decreased the mean exposure (AUC) and Cmax of midazolam by 29% and 32%, respectively.

Darolutamide did not inhibit the metabolism of selected CYP substrates in vitro at clinically relevant concentrations.

This indicates that Nubeqa may be given concomitantly with CYP substrates (e.g. warfarin, L-thyroxine, omeprazole) without a clinically relevant drug-drug interaction.

### ***Substrates for other transporters***

In vitro data indicate darolutamide administration may inhibit OATP1B1, OATP1B3, OAT3, MATE1, MATE2K and intestinal MRP2. Darolutamide did not inhibit the transporters, BSEP, OAT1, OCTs, OATP2B1 and NTCP at clinically relevant concentrations.

## **4.6 FERTILITY, PREGNANCY AND LACTATION**

### ***Effects on fertility***

There are no human data on the effect of Nubeqa on fertility.

In repeated dose toxicity studies in rats and dogs, atrophy and hypospermia in the male reproductive system were observed, which is consistent with the pharmacological activity of darolutamide.

### ***Use in pregnancy (Category D)***

#### Pregnancy and breast-feeding

Nubeqa is contraindicated in women who are or may become pregnant. Based on its mechanism of action, Nubeqa may cause fetal harm when administered during pregnancy. There are no data available with the use of Nubeqa during pregnancy in humans.

#### Women of childbearing potential / Contraception in males and females

Nubeqa may be harmful to a developing fetus. Patients having sex with female partners of reproductive potential should use a condom along with another highly effective contraceptive method during treatment and for three months after the last dose of Nubeqa.

### ***Use in lactation***

Nubeqa is not indicated in women. Nubeqa is not to be used in women who are, or may be, pregnant or breast-feeding.

## **4.7 EFFECTS ON ABILITY TO DRIVE AND USE MACHINES**

There is no evidence that Nubeqa will affect the ability to drive or use machines.

## **4.8 ADVERSE EFFECTS (UNDESIRABLE EFFECTS)**

Reporting suspected adverse reactions after registration of the medicinal product is important. It allows continued monitoring of the benefit-risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions at [www.tga.gov.au/reporting-problems](http://www.tga.gov.au/reporting-problems) (Australia) or <https://nzphvc.otago.ac.nz/reporting/> (New Zealand).

### ***Summary of the safety profile***

The overall safety profile of Nubeqa is based on data from 1508 patients of whom 954 received at least one dose of Nubeqa in the ARAMIS study.

The **most frequently** observed adverse drug reaction ( $\geq 10\%$ ) in patients receiving Nubeqa is fatigue.

Overall, serious adverse events occurred in 25% of patients receiving NUBEQA and in 20% of patients receiving placebo. Overall 3.9% of patients receiving NUBEQA and 3.2% of patients receiving placebo died from adverse events, which included death (0.4%), cardiac failure (0.3%), cardiac arrest (0.2%), general physical health deterioration (0.2%), and pulmonary embolism (0.2%) for NUBEQA.

Permanent discontinuation due to adverse events occurred in 9% of patients receiving NUBEQA or placebo. The most frequent adverse events requiring permanent discontinuation in patients who received NUBEQA included cardiac failure (0.4%), and death (0.4%).

Dosage interruptions due to adverse events occurred in 13% of patients treated with NUBEQA. The most frequent adverse events requiring dosage interruption in patients who received NUBEQA included hypertension (0.6%), diarrhea (0.5%), and pneumonia (0.5%).

Dosage reductions due to adverse events occurred in 6% of patients treated with NUBEQA. The most frequent adverse events requiring dosage reduction in patients treated with NUBEQA included fatigue (0.7%), hypertension (0.3%), and nausea (0.3%).

### ***Tabulated list of adverse reactions***

The adverse drug reactions observed with Nubeqa are listed in Table 1 below. They are classified according to System Organ Class (MedDRA version 21.0). The most appropriate MedDRA term is used to describe a certain reaction and its synonyms and related conditions.

Adverse drug reactions are grouped according to their frequencies. Frequency groups are defined by the following convention: very common:  $\geq 1/10$ ; common:  $\geq 1/100$  to  $< 1/10$ .

Within each frequency group, adverse drug reactions are presented in order of decreasing seriousness.

Table 1: Adverse drug reactions reported in patients treated with Nubeqa in the ARAMIS study

System Organ Class (MedDRA)	Very common	Common
Skin and subcutaneous tissue disorders		Rash
Musculoskeletal and connective tissue disorders		Pain in extremity
General disorders and administration site conditions	Fatigue	

Table 2: Incidence of adverse drug reactions ( $\geq 1\%$ ) reported in patients treated with Nubeqa in ARAMIS and reported more frequently than in patients receiving placebo

System Organ Class Preferred Term	Nubeqa (n=954)		Placebo (n=554)	
	Grade		Grade	
	All %	3-4 %	All %	3-4 %
<b>Musculoskeletal and Connective Tissue Disorders</b>				
<b>Pain in Extremity</b>	5.8	0	3.2	0.2
<b>Skin and subcutaneous tissue disorders</b>				
<b>Rash</b>	2.9	0.1	0.9	0
<b>General disorders and administration site conditions</b>				
<b>Fatigue</b>	15.8	0.6	11.4	1.1

### Laboratory test abnormalities

**Table 3: Laboratory test abnormalities related to Nubeqa treatment and reported more frequently in Nubeqa-treated patients compared to placebo-treated patients in the ARAMIS study**

Laboratory parameter (in % of samples investigated)	Nubeqa (N=954)*		Placebo (N=554)*	
	All Grades**	Grade 3/4**	All Grades**	Grade 3/4**
<b>Blood and lymphatic system disorders</b>				
Neutrophil count decreased	19.6%	3.5%	9.4%	0.5%
<b>Hepatobiliary disorders</b>				
Bilirubin increased	16.4%	0.1%	6.9%	0
AST increased	22.5%	0.5%	13.6%	0.2%

\* The number of patients tested for a specific laboratory test parameter may be different. The incidence of each laboratory test abnormality was calculated accordingly.

\*\* Common Terminology Criteria for Adverse Events (CTCAE) version 4.03. Only laboratory test values (no clinical assessments) were used for the grading. Grade 4 laboratory test values were limited to neutrophil count decreased.

### Cardiovascular

Ischaemic heart disease occurred in 3.2% of patients treated with NUBEQA and in 2.5% of patients treated with placebo. Grade 3 or 4 reactions occurred in 1.7% of patients treated with NUBEQA and 0.4% of patients treated with placebo. Heart failure occurred in 1.9% of patients treated with NUBEQA and in 0.9% of patients treated with placebo. Grade 3 or 4 reactions occurred only in the NUBEQA arm in 0.5% of patients.

### 4.9 OVERDOSE

For general advice on overdose management, contact the Poisons Information Centre, telephone number 13 11 26 (Australia) or the National Poisons Centre, 0800 POISON or 0800 764 766 (New Zealand).

The highest dose of Nubeqa studied clinically was 900 mg twice daily, equivalent to a total daily dose of 1800 mg. No dose limiting toxicities were observed with this dose.

Considering the saturable absorption (see section 5.2 PHARMACOKINETIC PROPERTIES) and the absence of evidence for acute toxicity, an intake of a higher than recommended dose of darolutamide is not expected to lead to toxicity.

In the event of intake of a higher than recommended dose, Nubeqa treatment can be continued with the next dose as scheduled.

There is no specific antidote for Nubeqa and symptoms of overdose are not established.



## 5 PHARMACOLOGICAL PROPERTIES

### 5.1 PHARMACODYNAMIC PROPERTIES

Pharmacotherapeutic group: Anti-androgens ATC code: L02BB

#### ***Mechanism of action***

Darolutamide is a non-steroidal androgen receptor antagonist with a flexible polar-substituted pyrazole structure that binds with nanomolar affinity directly to the receptor ligand binding domain to retain antagonistic activity against the androgen receptor (AR).

Darolutamide competitively inhibits androgen binding, androgen receptor nuclear translocation and AR mediated transcription.

Darolutamide had significant in vivo anti-tumour efficacy (decreased tumour cell proliferation) leading to decreased tumour volume in xenograft models of prostate cancer implemented in mice, including the castration-resistant model VCaP which overexpresses the AR.

#### ***Pharmacodynamic effects***

Patients receiving darolutamide in the ARAMIS study demonstrated a significantly higher confirmed PSA response rate (defined as a  $\geq 50\%$  reduction from baseline), compared with patients receiving placebo, 83.6% versus 7.6% (difference = 76%,  $p < 0.000001$ ).

No prolongation of the mean QTcF interval (i.e., greater than 10 ms) was observed after oral administration of 600 mg darolutamide twice daily compared to placebo in a subgroup of 500 patients in the phase III study (ARAMIS).

#### ***Clinical trials***

The efficacy and safety of Nubeqa was assessed in a randomized, double-blind, placebo-controlled multicenter phase III study (ARAMIS) in patients with non-metastatic castration resistant prostate cancer with a prostate-specific antigen doubling time (PSADT) of  $\leq 10$  months. In total, 1509 patients were randomized 2:1 to receive either 600 mg darolutamide orally twice daily (n=955) or matching placebo (n=554).

All patients received a gonadotropin-releasing hormone (GnRH) analog concurrently or had a bilateral orchiectomy. Patients with presence of pelvic lymph nodes  $< 2$  cm in short axis below the aortic bifurcation were allowed to enter the study. Absence or presence of metastasis was assessed by independent central radiological review. Included in these analyses were 89 patients that were retrospectively identified with metastasis at baseline. Randomization was stratified by PSADT ( $\leq 6$  months or  $> 6$  months) and use of osteoclast-targeted therapy at study entry (yes or no).

The following patient demographics and disease characteristics were balanced between treatment arms. The median age was 74 years (range 48-95) and 9% of patients were 85 years of age or older. The racial distribution was 79% White, 13% Asian, and 3% Black. A

majority of patients had a Gleason score of 7 or higher at diagnosis (73%). The median PSADT was 4.5 months. Nine percent (9%) of patients had prior orchiectomy, 25% of patients had prior prostatectomy and 50% of patients had at least one prior radiotherapy. Seventy-six percent (76%) of patients received more than one prior anti-hormonal treatment. Most patients had an Eastern Cooperative Oncology Group Performance Status (ECOG PS) score of 0 (69%) at study entry.

Treatment with Nubeqa continued until radiographic disease progression as assessed by conventional imaging (CT, MRI, Tc99m bone scan) by blinded central review, unacceptable toxicity or withdrawal.

The primary efficacy endpoint was metastasis free survival (MFS). Secondary endpoints were overall survival (OS), time to pain progression, time to initiation of first cytotoxic chemotherapy for prostate cancer, and time to first symptomatic skeletal events (defined as occurrence of any of the following: external beam radiotherapy to relieve skeletal symptoms, new symptomatic pathologic bone fracture, spinal cord compression, or tumour-related orthopedic surgical intervention).

Treatment with Nubeqa resulted in a statistically significant improvement in MFS compared to placebo with a p-value of <0.000001 and a hazard ratio (HR) of 0.413 (see Table 4 and Figure 1).

MFS results were consistent across patient subgroups regardless of PSADT, prior use of bone-targeting agents or loco-regional disease. Additional subgroups with consistent MFS results included PSA at baseline, Gleason score at diagnosis, age, geographical region, ECOG PS at baseline, race, and number of prior hormonal therapies.

Treatment with Nubeqa also resulted in a positive trend in overall survival (median was not reached in either arm at the time of the interim OS analysis, HR=0.706, p=0.045210, see Table 4

Table 4: Efficacy Results from the ARAMIS study

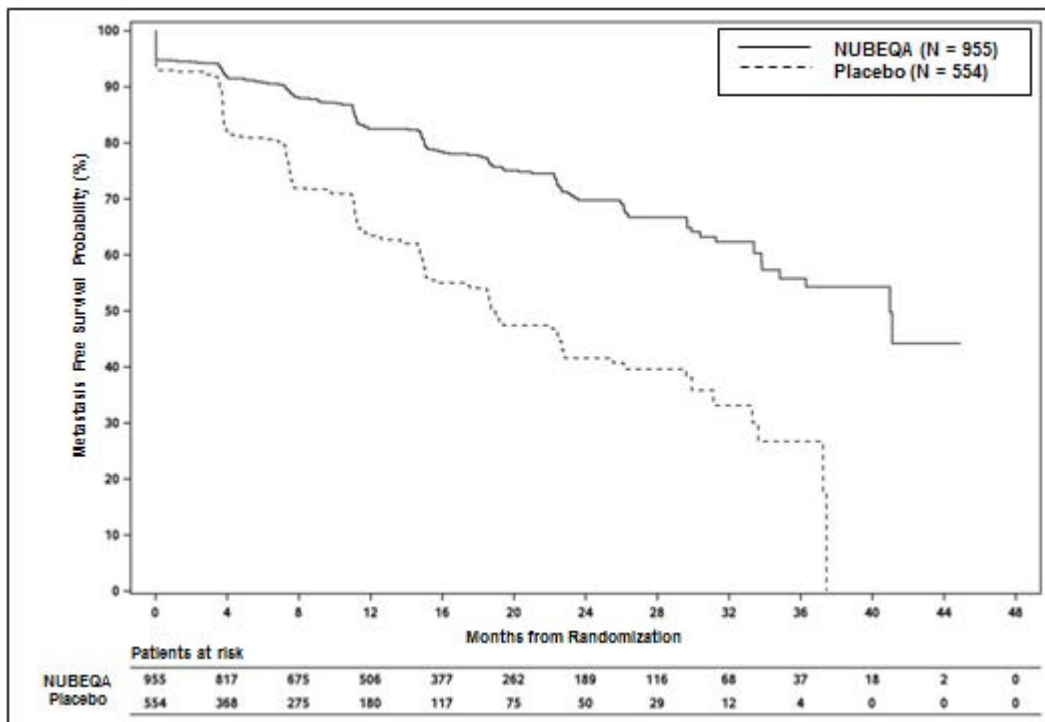
Efficacy parameter	Number of events (%)		Median (95% CI)		Hazard Ratio <sup>a</sup> (95% Confidence Interval [CI]) p-value (two-sided)
	Nubeqa (N=955)	Placebo (N=554)	Nubeqa (N=955)	Placebo (N=554)	
Metastasis free survival	221 (23.1%)	216 (39.0%)	40.4 months (34.3, NR)	18.4 months (15.5, 22.3)	0.413 (0.341, 0.500) <0.000001
Overall survival	78 (8.2%)	58 (10.5%)	NR (44.5, NR)	NR (NR, NR)	0.706 (0.501, 0.994) 0.045210 <sup>b</sup>

a Hazard ratio < 1 favours Nubeqa

b The p-value for OS did not reach the pre-defined threshold for statistical significance at the time of the interim OS analysis. Therefore (as per hierarchical methodology) a formal testing for significance of the remaining three secondary endpoints was not conducted.

NR not reached

Figure 1: Kaplan-Meier curves of metastasis free survival



## 5.2 PHARMACOKINETIC PROPERTIES

Darolutamide consists of two diastereomers [(S,R) darolutamide and (S,S) darolutamide] which interconvert via the main circulating metabolite called keto darolutamide. *In vitro*, all three substances show similar pharmacological activity. Darolutamide is poorly soluble in aqueous solvents over a large pH range and generally more soluble in organic solvents.

### Absorption

Following oral administration of 600 mg (2 tablets of 300 mg), peak plasma concentrations of darolutamide of 4.79 mg/L (coefficient of variation: 30.9%) are usually reached around 4 hours after administration. The ratio of the two diastereomers, (S,R) darolutamide to (S,S) darolutamide, changed from a 1:1 ratio in the tablet to an approximately 1:9 ratio in plasma based on AUC(0-12) data at steady-state. Following oral administration together with food, steady-state is reached after 2-5 days of repeated twice-daily dosing.

The absolute bioavailability compared to an intravenous injection is approximately 30% following oral administration of a Nubeqa tablet containing 300 mg darolutamide under fasted conditions. Bioavailability of darolutamide was enhanced by 2.0- to 2.5 fold when administered with food. A similar increase of exposure was observed for the major metabolite keto darolutamide.

### ***Distribution***

The apparent volume of distribution of darolutamide after intravenous administration is 119 L indicating that darolutamide is widely distributed throughout the body to both intracellular and extracellular fluid spaces.

Darolutamide is moderately (92%) bound to human plasma proteins without any difference between the two diastereomers. The major metabolite of darolutamide, keto darolutamide, is highly (99.8%) bound to plasma proteins.

Passage of darolutamide across the blood-brain barrier has not been studied clinically. However, brain exposures to darolutamide in terms of AUC (0 - 24) are very low with 4.5% of plasma exposure after single dose in rats and 2-4% after repeated dose in mice. This indicates low passage of darolutamide across the intact blood-brain barrier in rats and mice and a low likelihood that darolutamide crosses the intact blood-brain barrier in humans to a clinically relevant extent.

### ***Metabolism***

The diastereomers (S,R) darolutamide and (S,S) darolutamide are able to interconvert via the metabolite keto darolutamide with a preference for (S,S) darolutamide.

Following single oral administration of 300 mg <sup>14</sup>C darolutamide given as an oral solution, keto darolutamide is the only major metabolite with about 2 fold higher total exposure in plasma compared to darolutamide. Darolutamide and keto darolutamide accounted together for 87.4% of the <sup>14</sup>C radioactivity in plasma indicating that all other metabolites are of minor importance.

Darolutamide is metabolized primarily by oxidative metabolism mediated mainly by CYP3A4, as well as by direct glucuronidation mediated preferentially by UGT1A9 and UGT1A1. In addition, mainly the AKR1C3 to a lesser extent AKR1C1 and AKR1D1 aldo-keto reductase isoforms were shown to catalyse the reduction of keto darolutamide to primarily the S,S-diastereomer.

### ***Excretion***

The effective half-life of darolutamide and keto darolutamide in plasma of patients is approximately 20 hours. Of the two diastereomers comprising darolutamide, (S,R) darolutamide has a shorter effective half-life of 9 hours compared to (S,S) darolutamide with an effective half-life of 22 hours.

The clearance of darolutamide following intravenous administration was 116 mL/min (CV: 39.7%). A total of 63.4% of drug related material is excreted in the urine (approximately 7% unchanged), 32.4% is excreted in the feces. More than 95% of the dose was recovered within 7 days after administration.

In the dose range of 100 to 700 mg (after single dose and at steady state), the exposure to the two diastereomers and the major metabolite keto darolutamide increases linearly in a nearly dose-related manner. Based on a saturated absorption, no further increase in exposure to darolutamide was observed at 900 mg twice daily.

## Additional information on special populations

### ***Pediatric patients***

Safety and efficacy of Nubeqa have not been studied in children and adolescents below 18 years of age.

### ***Elderly***

No clinically relevant differences in the pharmacokinetics of darolutamide were observed based on age (48-95 years).

### ***Patients with hepatic impairment***

In a clinical pharmacokinetic study, C<sub>max</sub> and AUC for darolutamide were 1.5 and 1.9 fold higher in patients with moderate hepatic impairment (Child Pugh B) compared to healthy volunteers. There are no data for patients with severe hepatic impairment (Child Pugh C).

### ***Patients with renal impairment***

In a clinical pharmacokinetic study, AUC and C<sub>max</sub> for darolutamide were 2.5 and 1.6 fold higher in patients with severe renal impairment (estimated Glomerular Filtration Rate [eGFR] 15 to 29 mL/min/1.73 m<sup>2</sup>) compared to healthy volunteers.

A population pharmacokinetic analysis indicate a 1.1 and 1.3-fold higher exposure (AUC) of darolutamide in patients with mild and moderate renal impairment (eGFR 30 to 89 mL/min/1.73 m<sup>2</sup>) compared to patients with normal renal function.

The pharmacokinetics of darolutamide has not been studied in patients with end stage renal disease receiving dialysis (eGFR <15 mL/min/1.73 m<sup>2</sup>).

## 5.3 PRECLINICAL SAFETY DATA

### ***Genotoxicity***

Darolutamide did not induce mutations in the microbial mutagenesis (Ames) assay. At high concentrations, darolutamide did induce structural chromosome aberrations in vitro in cultured human lymphocytes. However, in the in vivo combined bone marrow micronucleus test and the Comet assay in the liver and duodenum of the rat, no genotoxicity was observed. Overall, darolutamide did not show a relevant genotoxic potential for human use.

### ***Carcinogenicity***

Long-term animal studies to evaluate the carcinogenic potential of darolutamide have not been conducted.

## 6 PHARMACEUTICAL PARTICULARS

## 6.1 LIST OF EXCIPIENTS

### Tablet core

Calcium hydrogen phosphate dihydrate  
Croscarmellose sodium  
Lactose monohydrate  
Magnesium stearate  
Povidone

### Film coat

Hypromellose  
Lactose monohydrate  
Macrogol 3350  
Titanium dioxide

## 6.2 INCOMPATIBILITIES

Not applicable.

## 6.3 SHELF LIFE

Bottle: Keep the bottle tightly closed after first opening. Once the bottle is opened the medicinal product has shown to be stable for 3 months.

Information on the shelf life can be found on the public summary of the Australian Register of Therapeutic Goods (ARTG). The expiry date can be found on the packaging.

## 6.4 SPECIAL PRECAUTIONS FOR STORAGE

Store below 30°C. Store in original container.

## 6.5 NATURE AND CONTENTS OF CONTAINER

Blister: Each package contains 112 film coated tablets in PVC/Aluminium foil blisters (7 x 16).

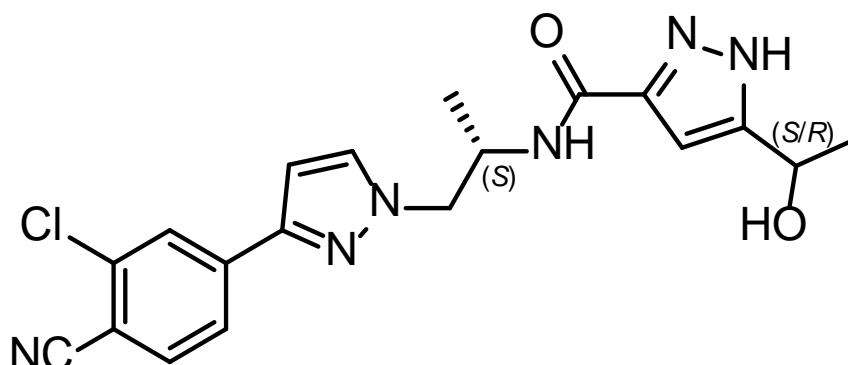
Bottle: Each 120 mL PE white opaque bottle contains 120 tablets and closed with PP/PP white opaque seal PE child-resistant screw cap

## 6.6 SPECIAL PRECAUTIONS FOR DISPOSAL

In Australia, any unused medicine or waste material should be disposed of by taking to your local pharmacy.

## 6.7 PHYSICOCHEMICAL PROPERTIES

### Chemical structure



Chemical name: N-{(2S)-1-[3-(3-chloro-4-cyanophenyl)-1H-pyrazol-1-yl]propan-2-yl}-5-(1-hydroxyethyl)-1H-pyrazole-3-carboxamide

Empirical formula: C<sub>19</sub>H<sub>19</sub>ClN<sub>6</sub>O<sub>2</sub>

Molecular weight: 398.85

CAS: 1297538-32-9

## 7 MEDICINE SCHEDULE (POISONS STANDARD)

S4 Prescription Only Medicine

## 8 SPONSOR

Bayer Australia Ltd  
Abn 22 000 138 714  
875 pacific highway  
Pymble, nsw 2073  
[www.bayer.com.au](http://www.bayer.com.au)

## 9 DATE OF FIRST APPROVAL

26 February 2020

## 10 DATE OF REVISION

AusPAR - NUBEQA - darolutamide - Bayer Australia Limited - PM-2019-01420-1-4 FINAL 2 July 2020. This is the Product Information that was approved with the submission described in this AusPAR. It may have been superseded. For the most recent PI, please refer to the TGA website at <https://www.tga.gov.au/product-information-pi>

## SUMMARY TABLE OF CHANGES

Section Changed	Summary of new information