

## PROFESSIONAL INFORMATION

### SCHEDULING STATUS

S4

#### 1. NAME OF THE MEDICINE

HALAVEN

#### 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each 5 ml vial contains eribulin mesilate equivalent to 0,88 mg of eribulin in 2 ml of solution.

Inactive ingredients:

5 % (v/v) ethanol in water for injections.

Sugar free

For the full list of excipients, see section 6.1.

#### 3. PHARMACEUTICAL FORM

Solution for injection

#### 4. CLINICAL PARTICULARS

##### 4.1. Therapeutic Indications

HALAVEN is indicated for the treatment of adult patients with locally advanced or metastatic breast cancer who have progressed after at least one chemotherapeutic regimen for advanced disease (see "Pharmacodynamic properties"). Prior therapy should have included an anthracycline and a taxane in either the adjuvant or metastatic setting unless patients were not suitable for these treatments.

HALAVEN is indicated for the treatment of adult patients with unresectable liposarcoma who have received prior anthracycline containing therapy (unless unsuitable) for advanced or metastatic disease (see "Pharmacodynamic properties").

#### **4.2. Posology and method of administration**

HALAVEN should be administered in units specialised in the administration of cytotoxic chemotherapy and only under the supervision of a qualified medical practitioner experienced in the appropriate use of cytotoxic medicines.

##### **Dosage**

The recommended dose of HALAVEN as ready-to-use solution is 1,23 mg/m<sup>2</sup> which should be administered intravenously over 2 to 5 minutes on Day 1 and 8 of every 21-day cycle.

##### ***IMPORTANT:***

##### ***PLEASE NOTE:***

The recommended dose refers to the base of the active substance (eribulin).

Calculation of the individual dose to be administered to a patient must be based on the strength of the ready-to-use solution that contains 0,44 mg/ml eribulin and the dose recommendation of 1,23 mg/m<sup>2</sup>.

The dose reduction recommendation shown below are also shown as the dose of eribulin to be administered based on the strength of the ready-to-use solution.

In the pivotal trials, the corresponding publications and in some other regions e.g. the US and Switzerland, the recommended dose is based on the salt form (eribulin mesilate).

Patients may experience nausea or vomiting. Anti-emetic prophylaxis including corticosteroids should be considered.

##### ***Dose delays during therapy***

The administration of HALAVEN should be delayed on Day 1 or Day 8 for any of the following:

- Absolute neutrophil count (ANC) < 1 x 10<sup>9</sup>/l
- Platelets < 75 x 10<sup>9</sup>/l
- Grade 3 or 4 non-haematological toxicities.

##### ***Dose reduction during therapy***

Dose reduction recommendations for retreatment are shown in the following table.

### Dose reduction recommendations

| Adverse reaction after previous HALAVEN administration  | Recommended dose of HALAVEN |
|---|-----------------------------|
| <b>Haematological</b>   |                             |
| ANC < $0,5 \times 10^9/l$ lasting more than 7 days  | 0,97 mg/ml <sup>2</sup>     |
| ANC < $1 \times 10^9/l$ neutropenia complicated by fever or infection   |                             |
| Platelets < $25 \times 10^9/l$ thrombocytopenia   |                             |
| Platelets < $50 \times 10^9/l$ thrombocytopenia complicated by haemorrhage or requiring blood or platelet transfusion |                             |
| <b>Non-haematological</b>   |                             |
| Any Grade 3 or 4 in the previous cycle  |                             |
| <b>Reoccurrence of any haematological or non-haematological adverse reactions as specified above</b>                  |                             |
| Despite reduction to 0,97 mg/m <sup>2</sup>   | 0,62 mg/m <sup>2</sup>      |
| Despite reduction to 0,62 mg/m <sup>2</sup>   | Consider discontinuation    |

**Do not re-escalate the HALAVEN dose after it has been reduced.**

#### *Patients with hepatic impairment*

Impaired liver function due to metastases:

The recommended dose of HALAVEN in patients with mild hepatic impairment (Child-Pugh A) is 0,97 mg/m<sup>2</sup> administered intravenously over 2 to 5 minutes on Days 1 and 8 of a 21-day cycle.

The recommended dose of HALAVEN in patients with moderate hepatic impairment (Child- Pugh B) is 0,62 mg/m<sup>2</sup> administered intravenously over 2 to 5 minutes on Days 1 and 8 of a 21-day cycle.

Severe hepatic impairment (Child-Pugh C) has not been studied but it is expected that a more marked dose reduction is needed if HALAVEN is used in these patients.

Impaired liver function due to cirrhosis:

This patient group has not been studied. The doses given above may be used in mild and moderate impairment, but close monitoring is advised as the doses may need readjustment.

#### *Patients with renal impairment*

Patients with moderately or severely impaired renal function (creatinine clearance < 50 ml/min) will have increased HALAVEN exposure.

The recommended dose of HALAVEN in patients with moderate renal impairment (creatinine clearance (CLcr) 30-50 ml/min) is 1,1 mg/m<sup>2</sup> administered intravenously over 2 to 5 minutes on Days 1 and 8 of a 21-day cycle.

The safety of HALAVEN was not studied in patients with severe renal impairment (CrCl < 30 ml/min). For all patients with renal impairment, caution and close safety monitoring is advised. (See "5.1 Pharmacokinetic Properties").

#### *Elderly patients*

No specific dose adjustments are recommended based on the age of the patient.

#### *Paediatric population*

There is no relevant use of HALAVEN in children and adolescents in the indication of breast cancer.

The safety and efficacy of HALAVEN in children from birth to 18 years of age have not been established in soft tissue sarcoma. No data are available.

#### *Method of Administration*

HALAVEN is for intravenous use. The dose may be diluted in up to 100 ml of sodium chloride 9 mg/ml (0,9 % NaCl) solution for injection. It should not be diluted in glucose 5 % infusion solution.

In the absence of compatibility studies HALAVEN must not be mixed with other medicines except sodium chloride 9 mg/ml (0,9 % NaCl) solution for injection.

Good peripheral venous access or a patent central line should be ensured prior to administration.

There is no evidence that HALAVEN is a vesicant or an irritant. In the event of extravasation, treatment should be symptomatic.

Following administration, it is recommended that the intravenous line be flushed with sodium chloride 9 mg/ml (0,9 % NaCl) solution for injection to ensure administration of the complete dose.

HALAVEN is a cytotoxic anticancer medicine and caution should be exercised in its handling. The use of gloves, goggles, and protective clothing is recommended.

If the skin comes into contact with the HALAVEN solution, the skin should be washed immediately and thoroughly with soap and water. If the HALAVEN solution comes into contact with mucous membranes, the membranes should be flushed thoroughly with water.

HALAVEN should only be prepared and administered by personnel appropriately trained in handling of cytotoxic medicines.

Pregnant staff should not handle HALAVEN.

Discard any unused portion of the vial.

#### **4.3. Contraindications**

Hypersensitivity to eribulin or to any of the excipients of HALAVEN.

Pregnancy and lactation (see “4.6 Fertility, pregnancy and lactation”).

#### **4.4. Special warnings and precautions for use**

##### *Haematology*

Myelosuppression is dose dependent and primarily manifested as neutropenia (see “4.8 Undesirable effects”). Monitoring of complete blood counts should be performed on all patients prior to each dose of HALAVEN. Treatment with HALAVEN should only be initiated in patients with Absolute Neutrophil Count (ANC) values  $\geq 1,5 \times 10^9/l$  and platelets  $> 100 \times 10^9/l$ .

Febrile neutropenia occurred in  $< 5 \%$  of breast cancer patients treated with HALAVEN. Patients experiencing febrile neutropenia, severe neutropenia or thrombocytopenia, should be treated

according to the recommendations in section 4.2 “Posology and method of administration”.

Patients with alanine aminotransferase (ALT) or aspartate aminotransferase (AST) > 3 x upper limit of normal (ULN) experienced a higher incidence of Grade 4 neutropenia and febrile neutropenia.

Although data are limited, patients with bilirubin > 1,5 x ULN also have a higher incidence of Grade 4 neutropenia and febrile neutropenia.

Fatal cases of febrile neutropenia, neutropenic sepsis, sepsis and septic shock have been reported.

Severe neutropenia may be managed by the use of granulocyte colony-stimulating factor (G-CSF) or equivalent at the medical practitioner’s discretion in accordance with relevant guidelines (see “Pharmacodynamic properties”).

#### *Peripheral neuropathy*

Patients should be closely monitored for signs of peripheral motor and sensory neuropathy. The development of severe peripheral neurotoxicity requires a delay or reduction of dose (see 4.2 “Posology and method of administration”).

In clinical trials, patients with pre-existing neuropathy greater than Grade 2 were excluded. However, patients with pre-existing neuropathy Grade 1 or 2 were no more likely to develop new or worsening symptoms than those who entered the study without the condition.

#### *QT prolongation*

In an uncontrolled open-label ECG study in 26 patients, QT prolongation was observed on Day 8, independent of HALAVEN concentration. ECG monitoring is recommended if therapy is initiated in patients with congestive heart failure, bradydysrhythmias and electrolyte abnormalities.

Concomitant treatment with medicines known to prolong the QT interval, including Class Ia and III antidysrhythmics is not recommended.

Hypokalaemia or hypomagnesaemia should be corrected prior to initiating HALAVEN and these electrolytes should be monitored periodically during therapy.

HALAVEN should be avoided in patients with congenital long QT syndrome.

#### **4.5. Interaction with other medicines and other forms of interaction**

Formal interaction studies have not been done.

HALAVEN is mainly (up to 70 %) eliminated through biliary excretion. The transport protein involved in this process is unknown.

HALAVEN is not a substrate of breast cancer resistance protein (BCRP), organic anion (OAT1, OAT3, OATP1B1, OATP1B3), multi-drug resistance-associated protein (MRP2, MRP4) and bile salt export pump (BSEP) transporters. No interactions are expected with CYP3A4 inhibitors and inducers. HALAVEN exposure (AUC and C<sub>max</sub>) was unaffected by rifampicin, a CYP3A4 inducer.

##### *Effects of HALAVEN on the pharmacokinetics of other medicine*

HALAVEN may inhibit CYP3A4 according to in vitro data.

Caution and monitoring for adverse events is recommended with concomitant use of substances that have a narrow therapeutic window and that are eliminated mainly via CYP3A4-mediated metabolism (e.g. alfentanil, ciclosporin, ergotamine, fentanyl, pimozide, quinidine, sirolimus, tacrolimus).

HALAVEN does not inhibit the CYP enzymes CYP1A2, 2B6, 2C8, 2C9, 2C19, 2D6 or 2E1 at relevant clinical concentrations.

At relevant clinical concentrations, HALAVEN did not inhibit BCRP, OCT1, OCT2, OAT1, OAT3, OATP1B1 and OATP1B3 transporter-mediated activity.

#### **4.6. Fertility, pregnancy and lactation**

##### *Pregnancy*

HALAVEN is contraindicated in pregnancy and lactation.

There are no data from the use of HALAVEN in pregnant women.

HALAVEN is embryotoxic, foetotoxic, and teratogenic in rats.

HALAVEN should not be used during pregnancy (see “4.3 Contraindications”).

##### *Women of childbearing age*

If you could become pregnant, you should use appropriate contraception methods during treatment and for 7 months following the last dose of eribulin.

Men receiving eribulin are advised to use appropriate contraception methods during treatment and for 4 months following the last dose of eribulin. It is recommended that those who wish to become fathers in the future discuss the possibility of freezing of their sperm prior to treatment.

#### *Lactation*

There is no information on the excretion of HALAVEN or its metabolites in human or animal breast milk.

Mothers on HALAVEN must not breastfeed their infants (see 4.3 “Contraindications”).

#### *Fertility*

Testicular toxicity has been observed in rats and dogs.

Male patients should seek advice on conservation of sperm prior to treatment because of the possibility of irreversible infertility due to therapy with HALAVEN.

### **4.7. Effects on ability to drive and use machines.**

HALAVEN may cause tiredness and dizziness which may influence the ability to drive or use machines. Patients should be advised not to drive or use machines when receiving HALAVEN.

### **4.8. Undesirable effects**

#### *Summary of safety profile*

The most commonly reported adverse reactions related to HALAVEN, are bone marrow suppression manifested as neutropenia, leukopenia, anaemia and thrombocytopenia with associated infections.

New onset or worsening of pre- existing peripheral neuropathy has also been reported.

Gastrointestinal toxicities, manifested as anorexia, nausea, vomiting, diarrhoea, constipation and stomatitis are among the undesirable effects reported. Other undesirable effects

include fatigue, alopecia, increased liver enzymes, sepsis and musculoskeletal pain syndrome.

Tabulated list of adverse reactions

Unless otherwise noted, the table below shows the incidence of adverse reactions observed in breast cancer and soft tissue sarcoma patients who received the recommended dose in Phase 2 and Phase



3 studies.

Frequency categories are defined as: very common ( $\geq 1/10$ ), common ( $\geq 1/100$  to  $< 1/10$ ) and uncommon ( $\geq 1/1000$  to  $< 1/100$ ). Within each frequency grouping, undesirable effects are presented in order of decreasing frequency. Where Grade 3 or 4 reactions occurred, the actual total frequency and the frequency of Grade 3 or 4 reactions are given.

| System Organ Class                        | Adverse reactions – All Grades  |  |  |
|---|---|--|--|
|   | Very Common<br>(Frequency %)  | Common<br>(Frequency %)  | Uncommon   |
| <b>Infections and infestations</b>        |   | Urinary tract infection<br>(8,5 %) (G3/4: 0,7 %)<br><br>Pneumonia<br>(1,6 %) (G3/4: 1,0 %)<br><br>Oral candidiasis<br><br>Oral herpes<br><br>Upper respiratory tract infection<br><br>Nasopharyngitis<br><br>Rhinitis<br><br>Herpes zoster | Sepsis (0,5 %) (G3/4: 0,5 %) <sup>a</sup><br><br>Neutropenic sepsis<br>(0,2 %) (G3/4: 0,2 %) <sup>a</sup><br><br>Septic Shock (0,2 %) (G3/4: 0,2 %) <sup>a</sup> |
| <b>Blood and lymphatic disorders</b>      | Neutropenia (53,6 %) (G3/4: 46,0 %)<br><br>Leukopenia (27,9 %) (G3/4: 17,0 %)<br><br>Anaemia (21,8 %) (G3/4: 3,0 %) | Lymphopenia (5,7 %) (G3/4: 2,1 %)<br><br>Febrile neutropenia<br>(4,5 %) (G3/4: 4,4 %) <sup>a</sup><br><br>Thrombocytopenia<br>(4,2 %) (G3/4: 0,7 %)  |  |
| <b>Metabolism and nutrition disorders</b> | Decreased appetite<br>(22,5 %) (G3/4: 0,7 %)  | Hypokalaemia (6,8 %) (G3/4: 2,0 %)<br><br>Hypomagnesaemia  |  |

|  |  |  |  |
|--|--|--|--|
|  |  | (2,8 %) (G3/4: 0,3 %)<br>Dehydration (2,8 %)<br>(G3/4: 0,5 %)<br>Hyperglycaemia<br>Hypophosphataemia |  |
| <b>Psychiatric disorders</b>                           |  | Insomnia<br>Depression   |  |
| <b>Nervous system disorders</b>                        | Peripheral neuropathy <sup>b</sup><br>(35,9 %) (G3/4: 7,3 %)<br>Headache (17,5 %)<br>(G3/4: 0,7 %) | Dysgeusia<br>Dizziness (9,0 %)<br>(G3/4: 0,4 %)<br>Hypoaesthesia<br>Lethargy<br>Neurotoxicity        |  |
| <b>Eye disorders</b>                                   |  | Lacrimation increased (5,8 %)<br>(G3/4: 0,1 %)<br>Conjunctivitis                                     |  |
| <b>Ear and Labyrinth Disorders</b>                     |  | Vertigo<br>Tinnitus  |  |
| <b>Cardiac disorders</b>                               |  | Tachycardia  |  |
| <b>Vascular disorders</b>                              |  | Hot flush<br>Pulmonary embolism<br>(1,3 %) (G3/4: 1,1 %) <sup>a</sup>                                | Deep vein thrombosis                               |
| <b>Respiratory, thoracic and mediastinal disorders</b> | Dyspnoea (15,2 %) <sup>a</sup><br>(G3/4: 3,5 %) <sup>a</sup><br>Cough (15,0 %)<br>(G3/4: 0,5 %)    | Oropharyngeal pain<br>Epistaxis<br>Rhinorrhoea   | Interstitial lung disease<br>(0,2 %) (G3/4: 0,1 %) |
| <b>Gastrointestinal disorders</b>                      | Nausea (35,7 %)<br>(G3/4: 1,1 %)<br>Constipation (22,3 %)  | Abdominal pain<br>Stomatitis (11,1 %) (G3/4: 1,0 %)  | Mouth ulceration<br>Pancreatitis                   |

|   |  |   |   |
|---|--|---|---|
|   | (G3/4: 0,7 %)<br>Diarrhoea (18,7 %)<br>(G3/4: 0,8 %)<br>Vomiting (18,1 %)<br>(G3/4: 1,0 %) | Dry mouth<br>Dyspepsia (6,5 %)<br>(G3/4: 0,3 %)<br>Gastrooesophageal reflux disease<br>Abdominal distension   |   |
| <b>Hepatobiliary disorders</b>                |  | Aspartate aminotransferase increased (7,7 %)<br>(G3/4: 1,4 %)<br>Alanine aminotransferase increased (7,6 %)<br>(G3/4: 1,9 %)<br>Gamma glutamyl transferase increased (1,7 %)<br>(G3/4: 0,9 %)<br>Hyperbilirubinaemia (1,4 %)<br>(G3/4: 0,4 %) | Hepatotoxicity (0,8 %)<br>(G3/4: 0,6 %) |
| <b>Skin and subcutaneous tissue disorders</b> | Alopecia   | Rash (4,9 %) (G3/4: 0,1 %)<br>Pruritus (3,9 %) (G3/4: 0,1 %)<br>Nail disorder<br>Night sweats<br>Dry skin<br>Erythema<br>Hyperhidrosis<br>Palmar plantar Erythrodysesthesia (1,0 %)<br>(G3/4: 0,1 %)  | Angioedema                              |

|   |   |   |  |
|---|---|---|--|
| <b>Musculoskeletal and connective tissue disorders</b>      | Arthralgia and myalgia (20,4 %) (G3/4: 1,0 %)<br>Back pain (12,8 %) (G3/4: 1,5 %)<br>Pain in extremity (10,0 %) (G3/4: 0,7 %) | Bone pain (6,7 %) (G3/4: 1,2 %)<br>Muscle spasms (5,3 %) (G3/4: 0,1 %)<br>Musculoskeletal pain<br>Musculoskeletal chest pain<br>Muscular weakness |  |
| <b>Renal and urinary disorders</b>                          |   | Dysuria   | Haematuria<br>Proteinuria<br>Renal failure |
| <b>General disorders and administration site conditions</b> | Fatigue/Asthenia (53,2 %) (G3/4: 7,7 %)<br>Pyrexia (21,8 %) (G3/4: 0,7 %)   | Mucosal inflammation (6,4 %) (G3/4: 0,9 %)<br>Peripheral oedema<br>Pain<br>Chills<br>Influenza-like illness<br>Chest pain                         |  |
| <b>Investigations</b>                                       | Weight decreased (11,4 %) (G3/4: 0,4 %)   |   |  |

<sup>a</sup> Includes Grade 5 events

<sup>b</sup> Includes preferred terms of peripheral neuropathy, peripheral motor neuropathy, polyneuropathy, paraesthesia, peripheral sensory neuropathy, peripheral sensorimotor neuropathy and demyelinating polyneuropathy.

Overall, the safety profiles in the breast cancer and soft tissue sarcoma patient populations were similar.

#### Description of selected adverse reactions

##### *Neutropenia*

The neutropenia was reversible and not cumulative; the mean time to nadir was 13 days and the mean time to recovery from severe neutropenia ( $< 0,5 \times 10^9/l$ ) was 8 days.

Neutrophil counts of  $< 0,5 \times 10^9/l$  that lasted for more than 7 days occurred in 13 % of breast cancer patients treated with HALAVEN.

Neutropenia was reported as a Treatment Emergent Adverse Event (TEAE) in 151/404 (37,4 % for all grades) in the sarcoma population, compared with 902/1559 (57,9 % for all grades) in the breast cancer population. The combined grouped TEAE and neutrophil laboratory abnormality frequencies were 307/404 (76,0 %) and 1314/1559 (84,3 %), respectively. The median duration of treatment was 12,0 weeks for sarcoma patients and 15,9 weeks for breast cancer patients.

Fatal cases of febrile neutropenia, neutropenic sepsis, sepsis and septic shock have been reported. Out of 1 963 breast cancer and soft tissue sarcoma patients who received HALAVEN at the recommended dose in clinical trials, there was one fatal event each of neutropenic sepsis (0,1 %) and febrile neutropenia (0,1 %). In addition, there were 3 fatal events of sepsis (0,2 %) and one of septic shock (0,1 %).

Severe neutropenia may be managed by the use of G-CSF or equivalent at the medical practitioner's discretion in accordance with relevant guidelines.

18 % and 13 % of HALAVEN-treated patients received G-CSF in the two phase 3 breast cancer studies.

In the phase 3 sarcoma study, 26 % of the HALAVEN-treated patients received G-CSF.

Neutropenia resulted in discontinuation in  $< 1$  % of patients receiving HALAVEN.

#### *Disseminated intravascular coagulation*

Cases of disseminated intravascular coagulation have been reported, typically in association with neutropenia and/or sepsis.

#### *Peripheral neuropathy*

In the 1 559 breast cancer patients the most common adverse reaction resulting in discontinuation of treatment with HALAVEN was peripheral neuropathy (3,4 %). The median time to Grade 2 peripheral neuropathy was 12,6 weeks (post 4 cycles). Out of the 404 sarcoma patients, 2 patients discontinued treatment with HALAVEN due to peripheral neuropathy. The median time to Grade 2 peripheral neuropathy was 18,4 weeks.

Development of Grade 3 or 4 peripheral neuropathy occurred in 7,4 % of HALAVEN-treated breast cancer patients and 3,5 % of sarcoma patients. In clinical trials, patients with pre-existing neuropathy were as likely to develop new or worsening symptoms as those who entered the study without the condition.

In breast cancer patients with pre-existing Grade 1 or 2 peripheral neuropathy, the frequency of treatment-emergent Grade 3 peripheral neuropathy was 14 %.

#### *Hepatotoxicity*

In some patients with normal/abnormal liver enzymes prior treatment with HALAVEN, increased levels of liver enzymes were reported with initiation of HALAVEN treatment. Such elevations appeared to have occurred early with HALAVEN treatment in cycle 1 – 2 for the majority of these patients and, whilst thought likely to be a phenomenon of adaptation to HALAVEN treatment by the liver and not a sign of significant liver toxicity in most patients, hepatotoxicity has also been reported.

#### *Post-marketing experience*

Post-marketing spontaneous side effects include disseminated intravascular coagulation and Stevens-Johnson syndrome/toxic epidermal necrolysis. The frequencies are not known.

#### *Reporting of suspected adverse reactions*

Reporting suspected adverse reactions after authorisation of the medicine is important. It allows continued monitoring of the benefit/risk balance of the medicine. Health care providers are asked to report any suspected adverse reactions to SAHPRA via the “6.04 Adverse Drug Reactions Reporting Form”, found online under SAHPRA’s publications: <https://www.sahpra.org.za/Publications/Index/8>

#### **4.9. Overdose**

Symptoms of overdosage reported were hypersensitivity reactions and neutropenia.

There is no known antidote for HALAVEN overdose. In the event of an overdose, the patient should be closely monitored. Management of overdose should include supportive medical interventions to treat the presenting clinical manifestations.

### **35. PHARMACOLOGICAL ACTION**

#### **5.1. Pharmacodynamic properties**

Category and class: A. 26 Cytostatic agents

ATC code: L01XX41

Eribulin mesilate is a synthetic analogue of halichondrin B, a natural product isolated from the marine sponge *Halichondria okadai* that inhibits tubulin formation and mitotic spindle function, leading to phase G2/M cell-cycle arrest.

Eribulin inhibits the growth phase of microtubules without affecting the shortening phase and sequesters tubulin into non-productive aggregates. Eribulin exerts its effects via a tubulin-based antimitotic mechanism leading to G2/M cell- cycle block, disruption of mitotic spindles, and, ultimately, apoptotic cell death after prolonged and irreversible mitotic blockage.

#### **Pharmacokinetic properties**

##### *Distribution*

Eribulin is rapidly and widely distributed, hence has a large volume of distribution of 43 to 114 l/m<sup>2</sup>.

The plasma protein binding of eribulin (100-1000 ng/ml) ranged from 49 % to 65 % in human plasma.

##### *Biotransformation*

Unchanged eribulin was the major circulating species in plasma following administration of 14C-eribulin to patients. Metabolite concentrations represented < 0,6 % of parent compound, confirming that there are no major human metabolites of eribulin.

### *Elimination*

Eribulin has a low clearance of 1,16 to 2,42 l/h/m<sup>2</sup> with a terminal half-life of approximately 40 h. No significant accumulation of eribulin was observed on weekly administration. The pharmacokinetic properties are not dose or time dependent in the range of eribulin doses of 0,22 to 3,53 mg/m<sup>2</sup>.

Eribulin is eliminated primarily by biliary excretion.

After administration of <sup>14</sup>C-eribulin to patients, approximately 82 % of the dose was eliminated in faeces and only 9 % in urine indicating that renal clearance is not a significant route of eribulin elimination.

Unchanged eribulin represented most of the total radioactivity in faeces and urine.

### *Hepatic impairment*

A study evaluated the pharmacokinetics of eribulin in patients with mild (Child-Pugh A; n=7) and moderate (Child- Pugh B; n=4) hepatic impairment due to liver metastases. Compared to patients with normal hepatic function (n=6), eribulin exposure increased 1,8-fold and 3-fold in patients with mild and moderate hepatic impairment, respectively. Administration of eribulin at a dose of 0,97 mg/m<sup>2</sup> to patients with mild hepatic impairment and 0,62 mg/m<sup>2</sup> to patients with moderate hepatic impairment resulted in a somewhat higher exposure than after a dose of 1,23 mg/m<sup>2</sup> to patients with normal hepatic function. Eribulin was not studied in patients with severe hepatic impairment (Child-Pugh C). There is no study in patients with hepatic impairment due to cirrhosis. See 4.2 “Posology and method of administration”.

### *Renal impairment*

Increased Halaven exposure was seen in patients with moderately or severely impaired renal function, with high between-subject variability. The pharmacokinetics of eribulin were evaluated in a Phase 1 study in patients with normal renal function (Creatinine clearance: ≥ 80 ml/min; n=6), moderate (30-50 ml/min; n=7) or severe (15 to <30 ml/min; n=6) renal impairment. Creatinine clearance was estimated with the Cockcroft-Gault formula. A 1,5-fold (90 % CI: 0,9-2,5) higher dose-



normalised AUC(0-inf) was observed in patients with moderate and severe renal impairment.

See 4.2 “Posology and method of administration” for treatment recommendations.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1. List of excipients**

Dehydrated alcohol, Water for Injection, hydrochloric acid and/or sodium hydroxide are used to adjust pH of the medicine during the compounding process if necessary.

### **6.2. Incompatibilities**

In the absence of compatibility studies, this medicinal product must not be mixed with other medicinal products except those mentioned in section 6.1.

### **6.3. Shelf life**

48 months.

### **6.4. Special precautions for storage**

Store at or below 25 °C.

#### *In-use instructions*

From a microbiological point of view unless the method of opening precludes the risk of microbial contamination the product should be used immediately.

If not used immediately, in-use storage times and conditions are the responsibility of the user. If not used immediately HALAVEN as the undiluted solution in a syringe should not normally be stored longer than 4 hours at 25 °C and ambient lighting, or 24 hours at 2 °C to 8 °C.

Diluted solutions of HALAVEN (0,018 mg/ml to 0,18 mg/ml eribulin in sodium chloride 9 mg/ml (0,9 %)) solution for injection should not be stored longer than 24 hours at 2 °C to 8 °C, unless dilution has taken place in controlled and validated aseptic conditions.

### **6.5. Nature and content of container**

Clear, colourless aqueous solution for injection essentially free from visible particles of foreign matter.

5 ml Type I clear glass vial, with teflon-coated, grey butyl rubber stopper and blue flip-off aluminium over seal, containing a sufficient volume to allow the withdrawal of 2 ml of solution.

The pack sizes are cartons of 1 or 6 vials.

Not all pack sizes may be marketed.

#### **6.6. Special precautions for disposal and other handling**

HALAVEN is a cytotoxic anticancer medicine and caution should be exercised in its handling. The use of gloves, goggles, and protective clothing is recommended.

If the skin comes into contact with the HALAVEN solution, the skin should be washed immediately and thoroughly with soap and water. If the HALAVEN solution comes into contact with mucous membranes, the membranes should be flushed thoroughly with water.

HALAVEN should only be prepared and administered by personnel appropriately trained in handling of cytotoxic medicines.

Pregnant staff should not handle HALAVEN.

Discard any unused portion of the vial.

#### **7. HOLDER OF THE REGISTRATION CERTIFICATE**

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#### **8. REGISTRATION NUMBER(S)**

48/26/0047

**9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

Date of registration: 29 July 2016

**10. DATE OF REVISION OF THE TEXT**

6 March 2025