

## PHYSICIAN PRESCRIBING INFORMATION

### NAME OF THE MEDICINAL PRODUCT

**Mektovi 15 mg**

### QUALITATIVE AND QUANTITATIVE COMPOSITION

Each film-coated tablet contains 15 mg of binimetinib.

For the full list of excipients, *see Description (11)*.

### PHARMACEUTICAL FORM

Film-coated tablet

## 1 THERAPEUTIC INDICATIONS

### 1.1 BRAF V600E or V600K Mutation-Positive Unresectable or Metastatic Melanoma

Binimetinib is a kinase inhibitor indicated, in combination with encorafenib, for the treatment of adult patients with unresectable or metastatic melanoma with a BRAF V600E or V600K mutation [*see Dosage and Administration (2.1)*].

### 1.2 BRAF V600E Mutation-Positive metastatic non-small cell lung cancer (NSCLC)

Binimetinib is a kinase inhibitor indicated, in combination with encorafenib, for the treatment of adult patients with metastatic non-small cell lung cancer (NSCLC) adenocarcinoma with a BRAF V600E mutation, as detected by an approved test.

## 2 DOSAGE AND ADMINISTRATION

### 2.1 Patient Selection

#### BRAF V600E or V600K Mutation-Positive Unresectable or Metastatic Melanoma

Confirm the presence of a BRAF V600E or V600K mutation in tumor specimens prior to initiating MEKTOVI [*Clinical Studies (14)*].

#### BRAF V600E Mutation-Positive Metastatic Non-Small Cell Lung Cancer (NSCLC)

Confirm the presence of a BRAF V600E mutation in tumor or plasma specimens prior to initiating MEKTOVI [*see Clinical Studies (14.2)*]. If no mutation is detected in a plasma specimen, test tumor tissue.

### 2.2 Recommended Dosage and Administration

The recommended dosage of MEKTOVI is 45 mg orally taken twice daily, approximately 12 hours apart, in combination with encorafenib until disease progression or unacceptable toxicity. Refer to the encorafenib prescribing information for recommended encorafenib dosing information.

MEKTOVI may be taken with or without food [*see Clinical Pharmacology (12.3)*]. Do not take a missed dose of MEKTOVI within 6 hours of the next dose of MEKTOVI.

Do not take an additional dose if vomiting occurs after MEKTOVI administration but continue with the next scheduled dose.

### 2.3 Dosage Modifications for Adverse Reactions

If encorafenib is permanently discontinued, discontinue MEKTOVI.

Dose reductions for adverse reactions associated with MEKTOVI are presented in Table 1.

**Table 1: Recommended Dose Reductions for MEKTOVI for Adverse Reactions**

Action	Recommended Dose
First Dose Reduction	30 mg orally twice daily
Subsequent Modification	Permanently discontinue if unable to tolerate MEKTOVI 30 mg orally twice daily

Dosage modifications for adverse reactions associated with MEKTOVI are presented in Table 2.

**Table 2: Recommended Dosage Modifications for MEKTOVI for Adverse Reactions**

Severity of Adverse Reaction <sup>a</sup>	Dose Modification for MEKTOVI
<i>Cardiomyopathy [see Warnings and Precautions (5.2)]</i>	
<ul style="list-style-type: none"> <li>Asymptomatic, absolute decrease in LVEF of greater than 10% from baseline that is also below lower limit of normal (LLN)</li> </ul>	Withhold MEKTOVI for up to 4 weeks, evaluate LVEF every 2 weeks.  Resume MEKTOVI at a reduced dose if the following are present: <ul style="list-style-type: none"> <li>LVEF is at or above the lower limit of normal <u>and</u></li> <li>Absolute decrease from baseline is 10% or less <u>and</u></li> <li>Patient is asymptomatic.</li> </ul> If the LVEF does not recover within 4 weeks permanently discontinue MEKTOVI.
<ul style="list-style-type: none"> <li>Symptomatic congestive heart failure or absolute decrease in LVEF of greater than 20% from baseline that is also below LLN</li> </ul>	Permanently discontinue MEKTOVI.
<i>Venous Thromboembolism [see Warnings and Precautions (5.3)]</i>	
<ul style="list-style-type: none"> <li>Uncomplicated deep venous thrombosis (DVT) or pulmonary embolism (PE)</li> </ul>	Withhold MEKTOVI. <ul style="list-style-type: none"> <li>If improves to Grade 0-1, resume at a reduced dose.</li> <li>If no improvement, permanently discontinue MEKTOVI.</li> </ul>
<ul style="list-style-type: none"> <li>Life threatening PE</li> </ul>	Permanently discontinue MEKTOVI.
<i>Serous Retinopathy [see Warnings and Precautions (5.4)]</i>	
<ul style="list-style-type: none"> <li>Symptomatic serous retinopathy/Retinal pigment epithelial detachments</li> </ul>	Withhold MEKTOVI for up to 10 days. <ul style="list-style-type: none"> <li>If improves and becomes asymptomatic, resume at same dose.</li> <li>If not improved, resume at a lower dose level or permanently discontinue MEKTOVI.</li> </ul>
<i>Retinal Vein Occlusion (RVO) [see Warnings and Precautions (5.4)]</i>	
<ul style="list-style-type: none"> <li>Any Grade</li> </ul>	Permanently discontinue MEKTOVI.
<i>Uveitis [see Warnings and Precautions (5.4)]</i>	
<ul style="list-style-type: none"> <li>Grade 1-3</li> </ul>	If Grade 1 or 2 does not respond to specific ocular therapy, or for Grade 3 uveitis, withhold MEKTOVI for up to 6 weeks. <ul style="list-style-type: none"> <li>If improved, resume at same or reduced dose.</li> <li>If not improved, permanently discontinue MEKTOVI.</li> </ul>
<ul style="list-style-type: none"> <li>Grade 4</li> </ul>	Permanently discontinue MEKTOVI.
<i>Interstitial Lung Disease [see Warnings and Precautions (5.5)]</i>	
<ul style="list-style-type: none"> <li>Grade 2</li> </ul>	Withhold MEKTOVI for up to 4 weeks. <ul style="list-style-type: none"> <li>If improved to Grade 0-1, resume at a reduced dose.</li> <li>If not resolved within 4 weeks, permanently discontinue MEKTOVI.</li> </ul>
<ul style="list-style-type: none"> <li>Grade 3 or Grade 4</li> </ul>	Permanently discontinue MEKTOVI.
<i>Hepatotoxicity [see Warnings and Precautions (5.6)]</i>	
<ul style="list-style-type: none"> <li>Grade 2 AST or ALT increased</li> </ul>	Maintain MEKTOVI dose. <ul style="list-style-type: none"> <li>If no improvement within 2 weeks, withhold MEKTOVI until improved to Grade 0-1 or to pretreatment/baseline levels and then resume at the same dose.</li> </ul>
<ul style="list-style-type: none"> <li>Grade 3 or 4 AST or ALT increased</li> </ul>	See <i>Other Adverse Reactions</i> .

Severity of Adverse Reaction <sup>a</sup>	Dose Modification for MEKTOVI
<i>Rhabdomyolysis or Creatine Phosphokinase (CPK) elevations [see Warnings and Precautions (5.7)]</i>	
<ul style="list-style-type: none"> <li>Grade 4 asymptomatic CPK elevation or</li> <li>Any Grade CPK elevation with symptoms or with renal impairment</li> </ul>	Withhold MEKTOVI dose for up to 4 weeks. <ul style="list-style-type: none"> <li>If improved to Grade 0-1 resume at a reduced dose.</li> <li>If not resolved within 4 weeks, permanently discontinue MEKTOVI.</li> </ul>
<i>Dermatologic [other than palmar plantar erythrodysesthesia syndrome (PPES)] [see Adverse Reactions (6.1)]</i>	
<ul style="list-style-type: none"> <li>Grade 2</li> </ul>	If no improvement within 2 weeks, withhold MEKTOVI until Grade 0-1. Resume at same dose if first occurrence or reduce dose if recurrent.
<ul style="list-style-type: none"> <li>Grade 3</li> </ul>	Withhold MEKTOVI until Grade 0-1. Resume at same dose if first occurrence or reduce dose if recurrent.
<ul style="list-style-type: none"> <li>Grade 4</li> </ul>	Permanently discontinue MEKTOVI.
<i>Other Adverse Reactions (including: Hemorrhage) [see Warnings and Precautions (5. 8), Adverse Reactions (6.1)]<sup>b</sup></i>	
<ul style="list-style-type: none"> <li>Recurrent Grade 2 or</li> <li>First occurrence of any Grade 3</li> </ul>	Withhold MEKTOVI for up to 4 weeks. <ul style="list-style-type: none"> <li>If improves to Grade 0-1 or to pretreatment/baseline levels, resume at reduced dose.</li> <li>If no improvement, permanently discontinue MEKTOVI.</li> </ul>
<ul style="list-style-type: none"> <li>First occurrence of any Grade 4</li> </ul>	Permanently discontinue MEKTOVI, or Withhold MEKTOVI for up to 4 weeks. <ul style="list-style-type: none"> <li>If improves to Grade 0-1 or to pretreatment/baseline levels, then resume at a reduced dose.</li> <li>If no improvement, permanently discontinue MEKTOVI.</li> </ul>
<ul style="list-style-type: none"> <li>Recurrent Grade 3</li> </ul>	Consider permanently discontinuing MEKTOVI.
<ul style="list-style-type: none"> <li>Recurrent Grade 4</li> </ul>	Permanently discontinue MEKTOVI.

<sup>a</sup> National Cancer Institute Common Terminology Criteria for Adverse Events (NCI CTCAE) version 4.03.

<sup>b</sup> Dose modification of MEKTOVI when administered with encorafenib is not recommended for the following adverse reactions: palmar-plantar erythrodysesthesia syndrome (PPES), non-cutaneous RAS mutation-positive malignancies, and QTc prolongation.

Refer to the encorafenib prescribing information for dose modifications for adverse reactions associated with encorafenib.

## 2.4 Dosage Modifications for Moderate or Severe Hepatic Impairment

For patients with moderate (total bilirubin greater than 1.5 and less than or equal to  $3 \times$  ULN and any AST) or severe (total bilirubin levels greater than  $3 \times$  ULN and any AST) hepatic impairment, the recommended dosage is 30 mg orally taken twice daily [see *Use in Specific Populations (8.6), Clinical Pharmacology (12.3)*].

## 3 DOSAGE FORMS AND STRENGTHS

Tablets: 15 mg, Ovaloid biconvex (capsule shaped), yellow to dark yellow in color, film-coated tablets and debossed with a stylized “A” on one side and “15” on the other side.

## 4 CONTRAINDICATIONS

Hypersensitivity to the active substance or to any of the excipients listed in Description (11).

## 5 WARNINGS AND PRECAUTIONS

### 5.1 New Primary Malignancies

New primary malignancies, cutaneous and non-cutaneous, can occur when MEKTOVI is used in combination with encorafenib.

In PHAROS, cutaneous squamous cell carcinoma and skin papilloma each occurred in 2% of patients who received MEKTOVI in combination with encorafenib.

Monitor patients for new malignancies prior to initiation of treatment, while on treatment, and after discontinuation of treatment [see *Dosage and Administration (2.3)*].

### 5.2 Cardiomyopathy

Cardiomyopathy, manifesting as left ventricular dysfunction associated with symptomatic or asymptomatic decreases in ejection fraction, has been reported in patients treated with MEKTOVI in combination with encorafenib. In COLUMBUS, evidence of cardiomyopathy (decrease in LVEF below the institutional LLN with an absolute decrease in LVEF  $\geq 10\%$  below baseline as detected by echocardiography or MUGA) occurred in 7% of patients receiving MEKTOVI plus encorafenib. Grade 3 left ventricular dysfunction occurred in 1.6% of patients. The median time to first occurrence of left ventricular dysfunction (any grade) in patients receiving MEKTOVI in combination with encorafenib was 3.6 months (range 0 to 21 months). Cardiomyopathy resolved in 87% of patients receiving MEKTOVI plus encorafenib.

In PHAROS, evidence of cardiomyopathy (decrease in LVEF below the institutional LLN with an absolute decrease in LVEF  $\geq 10\%$  below baseline as detected by echocardiography or MUGA) occurred in 11% of patients receiving MEKTOVI in combination with encorafenib. Grade 3 left ventricular dysfunction occurred in 1% of patients. Cardiomyopathy resolved in 82% of patients receiving MEKTOVI plus encorafenib.

Assess ejection fraction by echocardiogram or MUGA scan prior to initiating treatment, one month after initiating treatment, and then every 2 to 3 months during treatment. The safety of MEKTOVI in combination with encorafenib has not been established in patients with a baseline ejection fraction that is either below 50% or below the institutional lower limit of normal (LLN). Patients with cardiovascular risk factors should be monitored closely when treated with MEKTOVI.

Withhold, reduce dose, or permanently discontinue based on severity of adverse reaction [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

### **5.3 Venous Thromboembolism**

In COLUMBUS, venous thromboembolism (VTE) occurred in 6% of patients receiving MEKTOVI in combination with encorafenib, including 3.1% of patients who developed pulmonary embolism. In PHAROS, VTE occurred in 7% of patients receiving MEKTOVI in combination with encorafenib, including 1% of patients who developed pulmonary embolism.

Withhold, reduce dose, or permanently discontinue based on severity of adverse reaction [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

### **5.4 Ocular Toxicities**

#### Serous Retinopathy

In COLUMBUS, serous retinopathy occurred in 20% of patients treated with MEKTOVI in combination with encorafenib; 8% were retinal detachment and 6% were macular edema. Symptomatic serous retinopathy occurred in 8% of patients with no cases of blindness. No patient discontinued MEKTOVI due to serous retinopathy; 6% of patients required dose interruptions or dose reductions. The median time to onset of the first event of serous retinopathy (all grades) was 1.2 months (range 0 to 17.5 months).

In PHAROS, serous retinopathy (retinal detachment) occurred in 2% of patients with no cases of blindness treated with MEKTOVI in combination with encorafenib. No patient permanently discontinued MEKTOVI due to serous retinopathy; 1% of patients required dose interruptions.

Assess for visual symptoms at each visit. Perform an ophthalmologic examination at regular intervals, for new or worsening visual disturbances, and to follow new or persistent ophthalmologic findings. Withhold, reduce dose, or permanently discontinue based on severity of adverse reaction [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

#### Retinal Vein Occlusion

RVO is a known class-related adverse reaction of MEK inhibitors and may occur in patients treated with MEKTOVI in combination with encorafenib. In patients with BRAF mutation-positive melanoma receiving MEKTOVI with encorafenib (n=690), 1 patient experienced RVO (0.1%).

The safety of MEKTOVI has not been established in patients with a history of RVO or current risk factors for RVO including uncontrolled glaucoma or a history of hyperviscosity or hypercoagulability syndromes.

Perform ophthalmologic evaluation for patient-reported acute vision loss or other visual disturbance within 24 hours. Permanently discontinue MEKTOVI in patients with documented RVO [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

### Uveitis

Uveitis, including iritis and iridocyclitis, has been reported in patients treated with MEKTOVI in combination with encorafenib. In COLUMBUS, the incidence of uveitis among patients treated with MEKTOVI in combination with encorafenib was 4%. In PHAROS, uveitis occurred in 1% of patients receiving MEKTOVI in combination with encorafenib.

Assess for visual symptoms at each visit. Perform an ophthalmologic evaluation at regular intervals and for new or worsening visual disturbances, and to follow new or persistent ophthalmologic findings. Withhold, reduce dose, or permanently discontinue based on severity of adverse reaction [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

### **5.5 Interstitial Lung Disease**

In patients with BRAF mutation-positive melanoma receiving MEKTOVI with encorafenib (n=690), 2 patients (0.3%) developed interstitial lung disease (ILD), including pneumonitis. In PHAROS, 1 patient (1%) receiving MEKTOVI with encorafenib developed pneumonitis.

Assess new or progressive unexplained pulmonary symptoms or findings for possible ILD. Withhold, reduce dose, or permanently discontinue based on severity of adverse reaction [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

### **5.6 Hepatotoxicity**

Hepatotoxicity can occur when MEKTOVI is administered in combination with encorafenib. In COLUMBUS, the incidence of Grade 3 or 4 increases in liver function laboratory tests in patients receiving MEKTOVI in combination with encorafenib was 6% for alanine aminotransferase (ALT), 2.6% for aspartate aminotransferase (AST), and 0.5% for alkaline phosphatase. No patient experienced Grade 3 or 4 serum bilirubin elevation. In PHAROS, the incidence of Grade 3 or 4 increases in liver function laboratory tests in patients receiving MEKTOVI in combination with encorafenib was 10% for AST, 9% for ALT, and 3.2% for alkaline phosphatase.

Monitor liver laboratory tests before initiation of MEKTOVI, monthly during treatment, and as clinically indicated. Withhold, reduce dose, or permanently discontinue based on severity of adverse reaction [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

### **5.7 Rhabdomyolysis**

Rhabdomyolysis can occur when MEKTOVI is administered in combination with encorafenib. In COLUMBUS, elevation of laboratory values of serum CPK occurred in 58% of patients treated with MEKTOVI in combination with encorafenib. In patients with BRAF mutation-positive melanoma receiving MEKTOVI with encorafenib (n=690), rhabdomyolysis was reported in 1 patient (0.1%). In PHAROS, elevation of laboratory values of serum creatine kinase (CK) occurred in 41% of patients treated with MEKTOVI in combination with encorafenib. No patient experienced rhabdomyolysis.

Monitor CPK and creatinine levels prior to initiating MEKTOVI, periodically during treatment, and as clinically indicated. Withhold, reduce dose, or permanently discontinue based on severity of adverse reaction [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

### **5.8 Hemorrhage**

Hemorrhage can occur when MEKTOVI is administered in combination with encorafenib. In COLUMBUS, hemorrhage occurred in 19% of patients receiving MEKTOVI in combination with encorafenib. Grade 3 or greater hemorrhage occurred in 3.2% of patients. The most frequent hemorrhagic events were gastrointestinal, including rectal hemorrhage (4.2%), hematochezia (3.1%), and hemorrhoidal hemorrhage (1%). Fatal intracranial hemorrhage in the setting of new or progressive brain metastases occurred in 1.6% of patients.

In PHAROS, hemorrhage occurred in 12% of patients receiving MEKTOVI in combination with encorafenib including fatal hemorrhage intracranial (1%); Grade 3 or 4 hemorrhage occurred in 4.1% of patients. The most frequent hemorrhagic events were anal hemorrhage and hemothorax (2% each).

Withhold, reduce dose, or permanently discontinue based on severity of adverse reaction [*see Dosage and Administration (2.3), Adverse Reactions (6.1)*].

## 5.9 Embryo-Fetal Toxicity

Based on findings from animal studies and its mechanism of action, MEKTOVI can cause fetal harm when administered to a pregnant woman. Binimetinib was embryotoxic and abortifacient when administered to rabbits during the period of organogenesis at doses greater than or equal to those resulting in exposures approximately 5 times the human exposure at the recommended clinical dose of 45 mg twice daily.

Advise pregnant women and females of reproductive potential of the potential risk to a fetus. Advise females of reproductive potential to use effective contraception during treatment with MEKTOVI and for at least 30 days after the final dose [*see Use in Specific Populations (8.1, 8.3)*].

## 5.10 Risks Associated with Combination Treatment

MEKTOVI is indicated for use in combination with encorafenib. Refer to the encorafenib prescribing information for additional risk information that applies to combination use treatment.

## 6 ADVERSE REACTIONS

The following adverse reactions are described elsewhere in the labeling:

- New Primary Malignancies [*see Warnings and Precautions (5.1)*]
- Cardiomyopathy [*see Warnings and Precautions (5.2)*]
- Venous Thromboembolism [*see Warnings and Precautions (5.3)*]
- Ocular Toxicities [*see Warnings and Precautions (5.4)*]
- Interstitial Lung Disease [*see Warnings and Precautions (5.5)*]
- Hepatotoxicity [*see Warnings and Precautions (5.6)*]
- Rhabdomyolysis [*see Warnings and Precautions (5.7)*]
- Hemorrhage [*see Warnings and Precautions (5.8)*]
- Embryo-Fetal Toxicity [*see Warnings and Precautions (5.9)*]
- Risks Associated with Combination Treatment [*see Warnings and Precautions (5.10)*]

## 6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

The data described in Warnings and Precautions reflect exposure of 192 patients with BRAF V600 mutation-positive unresectable or metastatic melanoma to MEKTOVI (45 mg twice daily) in combination with encorafenib (450 mg once daily) in a randomized open-label, active-controlled trial (COLUMBUS) [*see Clinical Studies (14.1)*] or, for rare events, exposure of 690 patients with BRAF V600 mutation-positive melanoma to MEKTOVI (45 mg twice daily) in combination with encorafenib once daily across multiple clinical trials (NCT03915951, NCT01909453). The pooled safety population described in the WARNINGS AND PRECAUTIONS also reflect exposure of 98 patients with BRAF V600E mutation-positive metastatic non-small cell lung cancer to MEKTOVI 45 mg twice daily and encorafenib 450 mg once daily until disease progression or unacceptable toxicity in PHAROS [*see Clinical Studies (14.2)*].

### BRAF V600E or V600K Mutation-Positive Unresectable or Metastatic Melanoma

The data described below reflect exposure of 192 patients with BRAF V600 mutation-positive unresectable or metastatic melanoma to MEKTOVI (45 mg twice daily) in combination with encorafenib (450 mg once daily) in COLUMBUS.

The COLUMBUS trial [*see Clinical Studies (14)*] excluded patients with a history of Gilbert's syndrome, abnormal left ventricular ejection fraction, prolonged QTc (> 480 msec), uncontrolled hypertension, and

history or current evidence of retinal vein occlusion. The median duration of exposure was 11.8 months for patients treated with MEKTOVI in combination with encorafenib and 6.2 months for patients treated with vemurafenib.

The most common ( $\geq 25\%$ ) adverse reactions in patients receiving MEKTOVI in combination with encorafenib were fatigue, nausea, diarrhea, vomiting, and abdominal pain.

Adverse reactions leading to dose interruptions of MEKTOVI occurred in 33% of patients receiving MEKTOVI in combination with encorafenib; the most common were left ventricular dysfunction (6%) and serous retinopathy (5%). Adverse reactions leading to dose reductions of MEKTOVI occurred in 19% of patients receiving MEKTOVI in combination with encorafenib; the most common were left ventricular dysfunction (3%), serous retinopathy (3%), and colitis (2%). Five percent (5%) of patients receiving MEKTOVI in combination with encorafenib experienced an adverse reaction that resulted in permanent discontinuation of MEKTOVI. The most common adverse reactions resulting in permanent discontinuation of MEKTOVI were hemorrhage in 2% and headache in 1% of patients.

Table 3 and Table 4 present adverse drug reactions and laboratory abnormalities, respectively, identified in COLUMBUS. The COLUMBUS trial was not designed to demonstrate a statistically significant difference in adverse reaction rates for MEKTOVI in combination with encorafenib, as compared to vemurafenib, for any specific adverse reaction listed in Table 3.

**Table 3: Adverse Reactions Occurring in  $\geq 10\%$  of Patients Receiving MEKTOVI in Combination with Encorafenib in COLUMBUS<sup>a</sup>**

Adverse Reaction	MEKTOVI with encorafenib N=192		Vemurafenib N=186	
	All Grades (%)	Grades 3 and 4 <sup>b</sup> (%)	All Grades (%)	Grades 3 and 4 <sup>b</sup> (%)
<b>General Disorders and Administration Site Conditions</b>				
Fatigue <sup>c</sup>	43	3	46	6
Pyrexia <sup>c</sup>	18	4	30	0
Peripheral edema <sup>c</sup>	13	1	15	1
<b>Gastrointestinal Disorders</b>				
Nausea	41	2	34	2
Diarrhea	36	3	34	2
Vomiting <sup>c</sup>	30	2	16	1
Abdominal pain <sup>c</sup>	28	4	16	1
Constipation	22	0	6	1
<b>Skin and Subcutaneous Tissue Disorders</b>				
Rash <sup>c</sup>	22	1	53	13
<b>Nervous System Disorders</b>				
Dizziness <sup>c</sup>	15	3	4	0
<b>Visual Disorders</b>				
Visual impairment <sup>c</sup>	20	0	4	0
Serous retinopathy/RPED <sup>c</sup>	20	3	2	0
<b>Vascular Disorders</b>				
Hemorrhage <sup>c</sup>	19	3	9	2
Hypertension <sup>c</sup>	11	6	11	3

<sup>a</sup> Grades per National Cancer Institute CTCAE v4.03.

<sup>b</sup> Grade 4 adverse reactions limited to diarrhea (n=1) and hemorrhage (n=3) in the MEKTOVI with encorafenib arm and constipation (n=1) in the vemurafenib arm.

<sup>c</sup> Represents a composite of multiple, related preferred terms.

Other clinically important adverse reactions occurring in  $< 10\%$  of patients who received MEKTOVI in combination with encorafenib were:

Gastrointestinal disorders: *Colitis*

Skin and subcutaneous tissue disorders: *Panniculitis, Photosensitivity*

Immune system disorders: *Drug hypersensitivity*

**Table 4: Laboratory Abnormalities Occurring in  $\geq 10\%$  (All grades) of Patients Receiving MEKTOVI in Combination with Encorafenib in COLUMBUS<sup>a</sup>**

Laboratory Abnormality	MEKTOVI with encorafenib N=192		Vemurafenib N=186	
	All Grades (%)	Grades 3 and 4 (%)	All Grades (%)	Grades 3 and 4 (%)
<b>Hematology</b>				
Anemia	36	3.6	34	2.2
Leukopenia	13	0	10	0.5
Lymphopenia	13	2.1	30	7
Neutropenia	13	3.1	4.8	0.5
<b>Chemistry</b>				
Increased Creatinine	93	3.6	92	1.1
Increased Creatine Phosphokinase	58	5	3.8	0
Increased Gamma Glutamyl Transferase	45	11	34	4.8
Increased ALT	29	6	27	2.2
Increased AST	27	2.6	24	1.6
Increased Alkaline Phosphatase	21	0.5	35	2.2
Hyponatremia	18	3.6	15	0.5

<sup>a</sup> Grades per National Cancer Institute CTCAE v4.03.

#### **BRAF V600E Mutation-Positive Metastatic Non-Small Cell Lung Cancer (NSCLC)**

The safety of MEKTOVI in combination with encorafenib is described in 98 patients with BRAF V600E mutation-positive metastatic NSCLC who received MEKTOVI (45 mg twice daily) in combination with encorafenib (450 mg once daily) in an open-label, single-arm trial (PHAROS).

The PHAROS trial [see *Clinical Studies (14.2)*] excluded patients with abnormal LVEF, prolonged QTc ( $>480$  ms), uncontrolled hypertension, and history or current evidence of retinal vein occlusion. The median duration of treatment for MEKTOVI and encorafenib was 8.4 and 9.2 months respectively.

The most common ( $\geq 25\%$ ) adverse reactions in patients receiving MEKTOVI were fatigue, nausea, diarrhea, musculoskeletal pain, vomiting, abdominal pain, visual impairment, constipation, dyspnea, rash, and cough.

Adverse reactions leading to dose interruptions of MEKTOVI occurred in 62% of patients receiving MEKTOVI; the most common ( $\geq 5\%$ ) were diarrhea (17%); nausea (15%); fatigue (9%); AST increased (7%); ALT increased, anemia, musculoskeletal pain, vomiting (6% each); and acute kidney injury, hemorrhage, and LV dysfunction/cardiomyopathy (5% each). Adverse reactions leading to dose reductions of MEKTOVI occurred in 33% of patients receiving MEKTOVI; the most common ( $\geq 5\%$ ) were diarrhea (8%), nausea (6%), and AST increased (5%). A total of 17% of patients receiving MEKTOVI experienced an adverse reaction that resulted in permanent discontinuation of MEKTOVI; the most common ( $\geq 2\%$ ) were diarrhea (3.1%); musculoskeletal pain, LV dysfunction/cardiomyopathy, fatigue, nausea, rash, visual impairment, and vomiting (2% each). None of the other adverse reactions leading to permanent discontinuation of MEKTOVI occurred in more than 1 patient.

Serious adverse reactions occurred in 38% of patients who received MEKTOVI in combination with encorafenib. Serious adverse reactions in  $\geq 2\%$  of patients included hemorrhage (6%); diarrhea (4.1%); anemia, dyspnea, pneumonia (3.1% each); arrhythmia, device related infection, edema, myocardial infarction, and pleural effusion (2% each). Fatal adverse reactions occurred in 2% of patients who received MEKTOVI (45 mg twice-daily) in combination with encorafenib, including intracranial hemorrhage and myocardial infarction (1% each).

Table 5 and Table 6 present adverse drug reactions and laboratory abnormalities, respectively, identified in PHAROS.

**Table 5: Adverse Reactions Occurring in  $\geq 10\%$  of Patients Receiving MEKTOVI in Combination with Encorafenib in PHAROS<sup>a</sup>**

Adverse Reaction	MEKTOVI with encorafenib N=98	
	All Grades (%)	Grade 3 and 4 <sup>b</sup> (%)
<b>General Disorders and Administration Site Conditions</b>		
Fatigue <sup>c</sup>	61	8
Edema <sup>d</sup>	23	1
Pyrexia	22	0
<b>Gastrointestinal Disorders</b>		
Nausea	58	3.1
Diarrhea <sup>e</sup>	52	7
Vomiting	37	1
Abdominal pain <sup>f</sup>	32	1
Constipation	27	0
<b>Eye Disorders</b>		
Visual impairment <sup>g</sup>	29	2
<b>Musculoskeletal and Connective Tissue Disorders</b>		
Musculoskeletal pain <sup>h</sup>	48	4.1
<b>Skin and Subcutaneous Tissue Disorders</b>		
Rash <sup>i</sup>	27	3.1
Pruritis <sup>j</sup>	16	0
Dry skin	13	0
Alopecia	12	0
<b>Respiratory, Thoracic and Mediastinal Disorders</b>		
Dyspnea <sup>k</sup>	27	8
Cough <sup>l</sup>	26	0
<b>Nervous System Disorders</b>		
Dizziness <sup>m</sup>	17	1
Headache	11	0
<b>Metabolism and Nutrition Disorders</b>		
Decreased appetite	14	1
<b>Vascular Disorders</b>		
Hemorrhage <sup>b,n</sup>	12	4.1
Hypertension	10	5
<b>Cardiac Disorders</b>		
Left ventricular dysfunction/cardiomyopathy <sup>o</sup>	11	1
<b>Investigations</b>		
Weight increased	11	1
<b>Psychiatric Disorders</b>		
Insomnia	10	0

a. Grades per National Cancer Institute CTCAE v4.03.

b. One Grade 5 adverse reaction of hemorrhage occurred.

- c. Fatigue includes fatigue, asthenia.
- d. Edema includes edema peripheral, generalized edema, swelling, localized edema, face edema.
- e. Diarrhea includes diarrhea, colitis.
- f. Abdominal pain includes abdominal pain, abdominal pain upper, abdominal discomfort, epigastric discomfort.
- g. Visual impairment includes vision blurred, visual impairment, vitreous floaters, photophobia, visual acuity reduced, photopsia.
- h. Musculoskeletal pain includes back pain, arthralgia, pain in extremity, myalgia, musculoskeletal chest pain, non-cardiac chest pain, neck pain.
- i. Rash includes rash, rash macular, rash maculo-papular, rash papular, rash pustular, dermatitis acneiform, palmar-plantar erythrodysesthesia syndrome, eczema, skin exfoliation.
- j. Pruritis includes pruritus, pruritus genital.
- k. Dyspnea includes dyspnea, dyspnea exertional.
- l. Cough includes cough, productive cough.
- m. Dizziness includes dizziness, balance disorder.
- n. Hemorrhage includes anal hemorrhage, hemothorax, gastrointestinal hemorrhage, hematochezia, hematuria, hemoptysis, hemorrhage intracranial, hyphema, small intestinal hemorrhage, upper gastrointestinal hemorrhage, vaginal hemorrhage.
- o. Left ventricular dysfunction/cardiomyopathy includes ejection fraction decreased, cardiac failure, cardiac failure congestive.

Other clinically important adverse reactions occurring in <10% of patients who received MEKTOVI in combination with encorafenib were:

Nervous system disorders: *Peripheral neuropathy, Dysgeusia, Facial paresis*

Gastrointestinal disorders: *Pancreatitis*

Skin and subcutaneous tissue disorders: *Hyperkeratosis, Erythema, Photosensitivity*

Immune system disorders: *Drug hypersensitivity*

**Table 6: Laboratory Abnormalities Occurring in ≥10% (All Grades) of Patients Receiving MEKTOVI with Encorafenib in PHAROS<sup>a</sup>**

Laboratory Abnormality <sup>b</sup>	MEKTOVI with encorafenib	
	All Grades (%)	Grades 3 and 4 (%)
<b>Hematology</b>		
Anemia	47	11
Lymphopenia	24	6
Thrombocytopenia	20	1.1
Leukopenia	12	0
Neutropenia	12	1.1
<b>Chemistry</b>		
Increased creatinine	91	3.2
Hyperglycemia	48	6
Increased creatine kinase	41	3.3
Lipase increased	40	14
Increased ALT	34	9
Hypoalbuminemia	32	0
Increased AST	31	10
Increased alkaline phosphatase	31	3.2
Hyperkalemia	31	2.1
Hyponatremia	26	11
Serum amylase increased	22	1.1
Hypocalcemia	12	2.1

a. Grades per National Cancer Institute CTCAE v4.03.

b. Based on the number of patients with available baseline and at least one on-treatment laboratory test.

### Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorization of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product.

Any suspected adverse events should be reported to the Ministry of Health according to the National Regulation by using an online form <https://sideeffects.health.gov.il>

## 7 DRUG INTERACTIONS

No clinically important drug interactions have been observed with MEKTOVI.

## 8 USE IN SPECIFIC POPULATIONS

### 8.1 Pregnancy

#### Risk Summary

Based on findings from animal reproduction studies and its mechanism of action [*see Clinical Pharmacology (12.1)*], MEKTOVI can cause fetal harm when administered to a pregnant woman. There are no available clinical data on the use of MEKTOVI during pregnancy. In animal reproduction studies, oral administration of binimetinib during the period of organogenesis was embryotoxic and an abortifacient in rabbits at doses greater than or equal to those resulting in exposures approximately 5 times the human exposure at the clinical dose of 45 mg twice daily (*see Data*). Advise pregnant women and females of reproductive potential of the potential risk to a fetus.

#### Data

##### *Animal Data*

In reproductive toxicity studies, administration of binimetinib to rats during the period of organogenesis resulted in maternal toxicity, decreased fetal weights and increased variations in ossification at doses  $\geq 30$  mg/kg/day (approximately 37 times the human exposure based on AUC at the recommended clinical dose of 45 mg twice daily). In pregnant rabbits, administration of binimetinib during the period of organogenesis resulted in maternal toxicity, decreased fetal body weights, an increase in malformations, and increased post-implantation loss, including total loss of pregnancy at doses  $\geq 10$  mg/kg/day (approximately 5 times the human exposure based on AUC at the recommended clinical dose of 45 mg twice daily). There was a significant increase in fetal ventricular septal defects and pulmonary trunk alterations at 20 mg/kg/day of binimetinib (less than 8 times the human exposure at the recommended clinical dose of 45 mg twice daily).

### 8.2 Lactation

#### Risk Summary

There are no data on the presence of binimetinib or its active metabolite in human milk, or the effects of binimetinib on the breastfed child, or the effects on milk production. Because of the potential for serious adverse reactions in a breastfed child, advise women not to breastfeed during treatment with MEKTOVI and for 3 days after the last dose.

### 8.3 Females and Males of Reproductive Potential

Based on animal data, MEKTOVI can cause fetal harm when administered to a pregnant woman [*see Use in Specific Populations (8.1)*].

#### Pregnancy Testing

Verify the pregnancy status of females of reproductive potential prior to initiating MEKTOVI [*see Use in Specific Populations (8.1)*].

#### Contraception

##### *Females*

Advise females of reproductive potential to use effective contraception during treatment with MEKTOVI and for at least 30 days after the last dose.

### 8.4 Pediatric Use

The safety and effectiveness of MEKTOVI have not been established in pediatric patients.

## 8.5 Geriatric Use

Of the 690 patients with BRAF mutation-positive melanoma who received MEKTOVI in combination with encorafenib across multiple clinical trials, 20% were aged 65 to 74 years and 8% were aged 75 years and older. [see *Clinical Pharmacology (12.3)*].

Of the 98 patients with BRAF V600E mutation-positive metastatic NSCLC who received MEKTOVI in combination with encorafenib, 62 (63.2%) were 65 years of age and over and 20 (20.4%) were 75 years and over [see *Clinical Studies (14.2)*].

No overall differences in the safety or effectiveness of MEKTOVI plus encorafenib were observed in older patients as compared to younger patients.

## 8.6 Hepatic Impairment

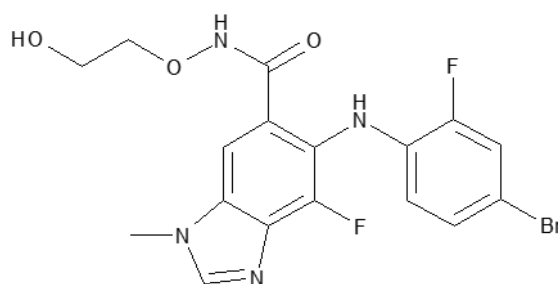
Binimetinib concentrations may increase in patients with moderate or severe hepatic impairment. Dose adjustment for MEKTOVI is not recommended in patients with mild hepatic impairment (total bilirubin  $> 1$  and  $\leq 1.5 \times$  ULN and any AST or total bilirubin  $\leq$  ULN and AST  $>$  ULN). Reduce the dose of MEKTOVI for patients with moderate (total bilirubin  $> 1.5$  and  $\leq 3 \times$  ULN and any AST) or severe (total bilirubin levels  $> 3 \times$  ULN and any AST) hepatic impairment [see *Dosage and Administration (2.4)*, *Clinical Pharmacology (12.3)*].

## 10 OVERDOSAGE

Since binimetinib is 97% bound to plasma proteins, hemodialysis is likely to be ineffective in the treatment of overdose with MEKTOVI.

## 11 DESCRIPTION

Binimetinib is a kinase inhibitor. The chemical name is 5-[(4-bromo-2-fluorophenyl)amino]-4-fluoro-N-(2-hydroxyethoxy)-1-methyl-1H-benzimidazole-6-carboxamide. The molecular formula is  $C_{17}H_{15}BrF_2N_4O_3$  and the molecular weight is 441.2 daltons. The chemical structure of binimetinib is shown below:



Binimetinib is a white to slightly yellow powder. In aqueous media, binimetinib is slightly soluble at pH 1, very slightly soluble at pH 2, and practically insoluble at pH 4.5 and higher.

MEKTOVI (binimetinib) tablets for oral use contain 15 mg of binimetinib with the following inactive ingredients: lactose monohydrate, microcrystalline cellulose, croscarmellose sodium, magnesium stearate (vegetable source), and colloidal silicon dioxide. The coating contains polyvinyl alcohol, polyethylene glycol, titanium dioxide, talc, ferric oxide yellow, and ferrousferic oxide.

## 12 CLINICAL PHARMACOLOGY

### 12.1 Mechanism of Action

Binimetinib is a reversible inhibitor of mitogen-activated extracellular signal regulated kinase 1 (MEK1) and MEK2 activity. MEK proteins are upstream regulators of the extracellular signal-related kinase (ERK)

pathway. In vitro, binimetinib inhibited extracellular signal-related kinase (ERK) phosphorylation in cell-free assays as well as viability and MEK-dependent phosphorylation of BRAF-mutant human melanoma cell lines. Binimetinib also inhibited in vivo ERK phosphorylation and tumor growth in BRAF-mutant murine xenograft models.

Binimetinib and encorafenib target two different kinases in the RAS/RAF/MEK/ERK pathway. Compared to either drug alone, coadministration of encorafenib and binimetinib resulted in greater anti-proliferative activity in vitro in BRAF mutation-positive cell lines and greater anti-tumor activity with respect to tumor growth inhibition in BRAF V600E mutant human melanoma xenograft studies in mice. Additionally, the combination of binimetinib and encorafenib delayed the emergence of resistance in BRAF V600E mutant human melanoma xenografts in mice compared to either drug alone. In a BRAF V600E mutant NSCLC patient-derived xenograft model in mice, coadministration of encorafenib and binimetinib resulted in greater anti-tumor activity compared to binimetinib alone, with respect to tumor growth inhibition. Increased tumor growth delay after dosing cessation was also observed with the coadministration compared to either drug alone.

## **12.2 Pharmacodynamics**

### Cardiac Electrophysiology

Following MEKTOVI 45 mg twice daily, no clinically meaningful QT prolongation was observed.

## **12.3 Pharmacokinetics**

The pharmacokinetics of binimetinib was studied in healthy subjects and patients with solid tumors. After twice-daily dosing, the accumulation is 1.5-fold and the coefficient of variation (CV%) of the area under the concentration-time curve (AUC) is < 40% at steady state. The systemic exposure of binimetinib is approximately dose proportional.

### Absorption

After oral administration, at least 50% of the binimetinib dose was absorbed with a median time to maximum concentration ( $T_{max}$ ) of 1.6 hours.

### *Effect of Food*

The administration of a single dose of MEKTOVI 45 mg with a high-fat, high-calorie meal (consisting of approximately 150 calories from protein, 350 calories from carbohydrate, and 500 calories from fat) in healthy subjects had no effect on binimetinib exposure.

### Distribution

Binimetinib is 97% bound to human plasma proteins and the blood-to-plasma ratio is 0.72. The geometric mean (CV%) of apparent volume of distribution of binimetinib is 92 L (45%).

### Elimination

The mean (CV%) terminal half-life ( $t_{1/2}$ ) of binimetinib is 3.5 hours (28.5%) and apparent clearance (CL/F) is 20.2 L/h (24%).

### *Metabolism*

The primary metabolic pathway is glucuronidation with UGT1A1 contributing up to 61% of the binimetinib metabolism. Other pathways of binimetinib metabolism include N-dealkylation, amide hydrolysis, and loss of ethane-diol from the side chain. The active metabolite M3 produced by CYP1A2 and CYP2C19 represents 8.6% of the binimetinib exposure. Following a single oral dose of 45 mg radiolabeled binimetinib, approximately 60% of the circulating radioactivity AUC in plasma was attributable to binimetinib.

### *Excretion*

Following a single oral dose of 45 mg radiolabeled binimetinib in healthy subjects, 62% (32% unchanged) of the administered dose was recovered in the feces while 31% (6.5% unchanged) was recovered in the urine.

### Specific Populations

Age (20 to 94 years), sex, or body weight do not have a clinically important effect on the systemic exposure of binimetinib. The effect of race or ethnicity on the pharmacokinetics of binimetinib is unknown.

*Hepatic Impairment:* No clinically meaningful changes in binimetinib exposure (AUC and  $C_{max}$ ) were observed in subjects with mild hepatic impairment (total bilirubin  $> 1$  and  $\leq 1.5 \times$  ULN and any AST or total bilirubin  $\leq$  ULN and AST  $>$  ULN) as compared to subjects with normal liver function (total bilirubin  $\leq$  ULN and AST  $\leq$  ULN). A 2-fold increase in AUC was observed in subjects with moderate (total bilirubin  $> 1.5$  and  $\leq 3 \times$  ULN and any AST) or severe (total bilirubin levels  $> 3 \times$  ULN and any AST) hepatic impairment [see *Dosage and Administration (2.4)*].

*Renal Impairment:* In subjects with severe renal impairment (eGFR  $\leq 29$  mL/min/1.73 m<sup>2</sup>), no clinically important changes in binimetinib exposure were observed as compared to subjects with normal renal function.

## Drug Interaction Studies

### *Clinical Studies*

*Effect of UGT1A1 Inducers or Inhibitors on Binimetinib:* UGT1A1 genotype and smoking (UGT1A1 inducer) do not have a clinically important effect on binimetinib exposure. Simulations predict similar  $C_{max}$  of binimetinib 45 mg in the presence or absence of atazanavir 400 mg (UGT1A1 inhibitor).

No differences in binimetinib exposure have been observed when MEKTOVI is coadministered with encorafenib.

*Effect of Binimetinib on CYP Substrates:* Binimetinib did not alter the exposure of a sensitive CYP3A4 substrate (midazolam).

*Effect of Acid Reducing Agents on Binimetinib:* The extent of binimetinib exposure (AUC) was not altered in the presence of a gastric acid reducing agent (rabeprazole).

### *In Vitro Studies*

*Effect of Binimetinib on CYP Substrates:* Binimetinib is not a time-dependent inhibitor of CYP1A2, CYP2C9, CYP2D6 or CYP3A.

*Effect of Transporters on Binimetinib:* Binimetinib is a substrate of P-glycoprotein (P-gp) and breast cancer resistance protein (BCRP). Binimetinib is not a substrate of organic anion transporting polypeptide (OATP1B1, OATP1B3, OATP2B1) or organic cation transporter 1 (OCT1).

## **13 NONCLINICAL TOXICOLOGY**

### **13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility**

Carcinogenicity studies with binimetinib have not been conducted. Binimetinib was not genotoxic in studies evaluating reverse mutations in bacteria, chromosomal aberrations in mammalian cells, or micronuclei in bone marrow of rats.

No dedicated fertility studies have been conducted with binimetinib in animals. In general toxicology studies in rats and monkeys, there were no remarkable findings in male or female reproductive organs.

## **14 CLINICAL STUDIES**

**14.1 BRAF V600E or V600K Mutation-Positive Unresectable or Metastatic Melanoma** MEKTOVI in combination with encorafenib was evaluated in a randomized, active-controlled, open-label, multicenter trial (COLUMBUS; NCT01909453). Eligible patients were required to have BRAF V600E or V600K mutation-positive unresectable or metastatic melanoma, as detected using the bioMerieux THxID™BRAF assay. Patients were permitted to have received immunotherapy in the adjuvant setting and one prior line of immunotherapy for unresectable locally advanced or metastatic disease. Prior use of BRAF inhibitors or MEK inhibitors was prohibited. Randomization was stratified by American Joint Committee on Cancer (AJCC) Stage (IIIB, IIIC, IVM1a or IVM1b, versus IVM1c), Eastern Cooperative Oncology Group (ECOG) performance status (0 versus 1), and prior immunotherapy for unresectable or metastatic disease (yes versus no).

Patients were randomized (1:1:1) to receive MEKTOVI 45 mg twice daily in combination with encorafenib 450 mg once daily (MEKTOVI in combination with encorafenib), encorafenib 300 mg once daily, or vemurafenib 960 mg twice daily. Treatment continued until disease progression or unacceptable toxicity. Only the results of the approved dosing (MEKTOVI 45 mg in combination with encorafenib 450 mg) are described below.

The major efficacy outcome measure was progression-free survival (PFS), as assessed by a blinded independent central review, to compare MEKTOVI in combination with encorafenib with vemurafenib. Additional efficacy measures included overall survival (OS), as well as objective response rate (ORR) and duration of response (DoR) which were assessed by central review.

A total of 577 patients were randomized, 192 to the MEKTOVI in combination with encorafenib arm, 194 to the encorafenib arm, and 191 to the vemurafenib arm. Of the 383 patients randomized to either the MEKTOVI in combination with encorafenib or the vemurafenib arms, the median age was 56 years (20 to 89 years), 59% were male, 91% were White, and 72% had baseline ECOG performance status of 0. Ninety-five percent (95%) had metastatic disease, 65% were Stage IVM1c, and 4% received prior CTLA-4, PD-1, or PD-L1 directed antibodies. Twenty-eight percent (28%) had elevated baseline serum lactate dehydrogenase (LDH), 45% had  $\geq 3$  organs with tumor involvement at baseline, and 3% had brain metastases. Based on centralized testing, 100% of patients' tumors tested positive for BRAF mutations; BRAF V600E (88%), BRAF V600K (11%), or both (< 1%).

MEKTOVI in combination with encorafenib demonstrated a statistically significant improvement in PFS compared to vemurafenib. Efficacy results are summarized in Table 7 and Figure 1.

**Table 7: Efficacy Results for COLUMBUS**

	<b>MEKTOVI with encorafenib N=192</b>	<b>Vemurafenib N=191</b>
<b>Progression-Free Survival</b>		
Number of events (%)	98 (51)	106 (55)
Progressive disease	88 (46)	104 (54)
Death	10 (5)	2 (1)
Median PFS, months (95% CI)	14.9 (11.0, 18.5)	7.3 (5.6, 8.2)
HR (95% CI) <sup>a</sup>	0.54 (0.41, 0.71)	
<i>P</i> value <sup>b</sup>	< 0.0001	
<b>Overall Survival<sup>c</sup></b>		
Number of events (%)	139 (72)	147 (77)
Median OS, months (95% CI)	33.6 (24.4, 39.2)	16.9 (14.0, 24.5)
HR (95% CI) <sup>a</sup>	0.67 (0.53, 0.84)	

Overall Response Rate		
ORR (95% CI)	63% (56%, 70%)	40% (33%, 48%)
CR	8%	6%
PR	55%	35%
Duration of Response		
Median DoR, months (95% CI)	16.6 (12.2, 20.4)	12.3 (6.9, 16.9)

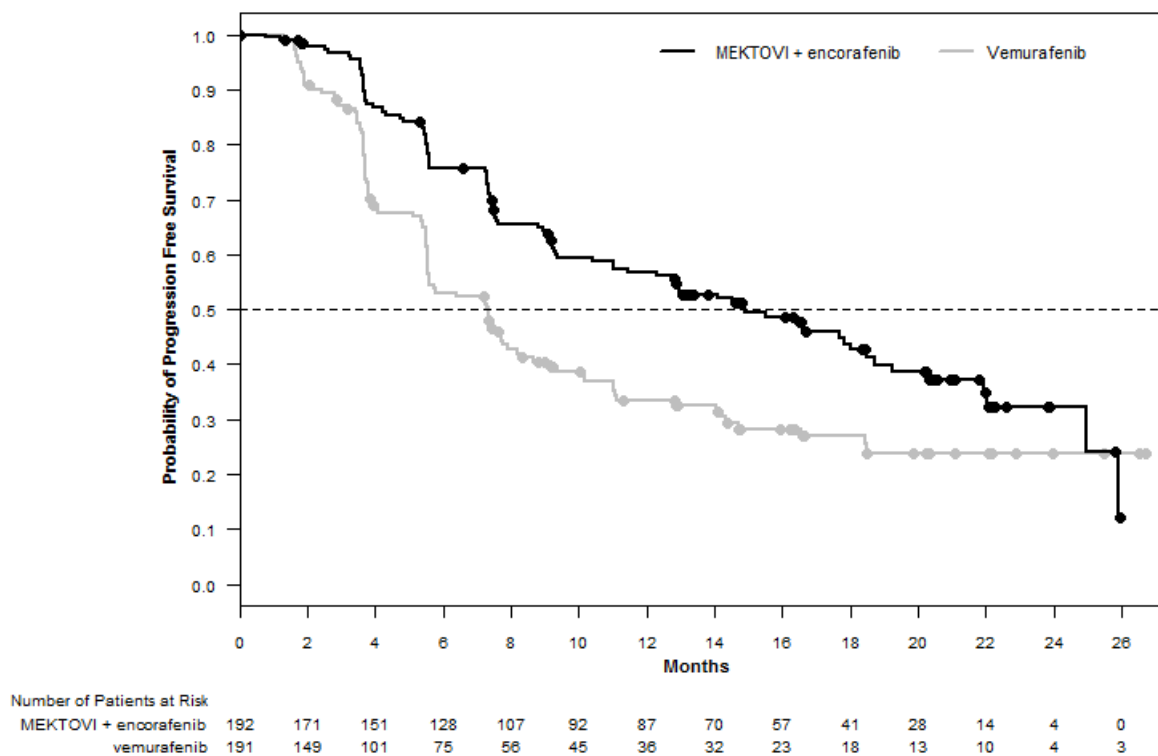
CI = Confidence interval; CR = Complete response; DoR = Duration of response; HR = Hazard ratio; NE = Not estimable; ORR = Overall response rate; OS = Overall survival; PFS = Progression-free survival; PR = Partial response.

<sup>a</sup> Estimated with Cox proportional hazard model adjusted by the following stratification factors: American Joint Committee on Cancer (AJCC) Stage (IIIB, IIIC, IVM1a or IVM1b, versus IVM1c) and Eastern Cooperative Oncology Group (ECOG) performance status (0 versus 1).

<sup>b</sup> Log-rank test adjusted by the same stratification factors.

<sup>c</sup> Based on a cutoff date 82.4 months after the date of PFS analysis.

**Figure 1: Kaplan-Meier Curves for Progression-Free Survival in COLUMBUS**



## 14.2 BRAF V600E Mutation-Positive Metastatic Non-Small Cell Lung Cancer

MEKTOVI in combination with encorafenib was evaluated in an open-label, multicenter, single-arm study in patients with BRAF V600E mutation-positive metastatic non-small cell lung cancer (NSCLC) (PHAROS; NCT03915951). Eligible patients had a diagnosis of histologically-confirmed metastatic NSCLC with BRAF V600E mutation that was treatment-naïve or had been previously treated with 1 prior line of systemic therapy in the metastatic setting (platinum-based chemotherapy and/or anti-PD-1/PD-L1 therapies), age 18 years or older, Eastern Cooperative Oncology Group (ECOG) performance status (PS) of 0 or 1, and measurable disease as defined by Response Evaluation Criteria in Solid Tumors (RECIST) v1.1. Prior use of BRAF inhibitors or MEK inhibitors was not allowed.

Patients received MEKTOVI 45 mg orally twice daily and encorafenib 450 mg once daily until disease progression or unacceptable toxicity. The major efficacy outcome measures were objective response rate (ORR) per RECIST v1.1 and duration of response (DoR) as assessed by independent review committee (IRC).

In the efficacy population, BRAF V600E mutation status was determined by prospective local testing using tumor tissue (78%) or blood (22%) specimens. Of the 98 patients with BRAF V600E mutation, 6 patients were enrolled into the trial based on testing of their tumor tissue specimens with the FoundationOne CDx tissue test. Of the remaining 92 patients enrolled based on local testing, 68 patients had their tumor tissue

specimens retrospectively confirmed as having BRAF V600E positive status by the FoundationOne CDx tissue test. The remaining patients had either BRAF V600E negative status (n=5) or had unevaluable results (n=19) by the FoundationOne CDx tissue test. In addition, plasma samples from 81 out of 98 patients were retrospectively tested using the FoundationOne Liquid CDx assay. Of the 81 patients, 48 were confirmed positive for BRAF V600E, while 33 patients were BRAF V600E mutation negative by FoundationOne Liquid CDx assay. The remaining 17 samples had unevaluable results with FoundationOne Liquid CDx assay.

The efficacy population included 59 treatment-naïve patients and 39 previously-treated patients. Among these 98 patients, the median age was 70 years (range: 47 to 86); 53% female; 88% White, 7% Asian, 3% Black or African American, and 1% American Indian or Alaska Native; 99% were not Hispanic or Latino; 13% were current smokers and 57% were former smokers; 73% had ECOG PS of 1; and 97% had adenocarcinoma. All patients had metastatic disease and 8% had brain metastases at baseline.

Efficacy results for patients with BRAF V600E mutation-positive metastatic NSCLC are summarized in Table 8.

**Table 8: Efficacy Results for PHAROS**

Efficacy Parameter	MEKTOVI with encorafenib	
	Treatment naïve (N=59)	Previously treated (N=39)
<b>Objective Response Rate<sup>a</sup></b>		
ORR (95% CI)	75% (62, 85)	46% (30, 63)
CR	15%	10%
PR	59%	36%
<b>Duration of Response<sup>a</sup></b>	N=44	N=18
Median DoR, months (95% CI)	NE (23.1, NE)	16.7 (7.4, NE)
% with DoR ≥6 months	75%	67%
% with DoR ≥12 months	59%	33%

CI = Confidence interval; CR = Complete response; DoR = Duration of response; N = Number of patients; NE = Not estimable; ORR = Objective response rate; PR = Partial response.

a. Assessed by Independent Central Review (ICR).

## 16 HOW SUPPLIED/STORAGE AND HANDLING

MEKTOVI (binimetinib) is supplied as 15 mg, ovaloid biconvex (capsule shaped), yellow to dark yellow in color, film-coated tablets and debossed with a stylized “A” on one side and “15” on the other side, available in bottles of 180 tablets.

Store below 25°C.

The expiry date of the product is indicated on the packaging materials.

## 17 MANUFACTURER:

Array BioPharma Inc.,  
3200 Walnut street, Boulder, Colorado 80301 USA

## 18 LICENSE HOLDER:

Medison Pharma Ltd.  
10 Hashiloah St., Petah Tikva. POB 7090, Israel

## 19 REGISTRATION NUMBER:

167-73-35723-00

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