#### PACKAGE INSERT

- 2 TARCEVA<sup>TM</sup>
- 3 (erlotinib)

4 Tablets

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RX Only

### 5 **DESCRIPTION**

- 6 TARCEVA (erlotinib) is a Human Epidermal Growth Factor Receptor Type
- 7 1/Epidermal Growth Factor Receptor (HER1/EGFR) tyrosine kinase inhibitor.
- 8 Erlotinib is a quinazolinamine with the chemical name N-(3-ethynylphenyl)-6,7-
- 9 bis(2-methoxyethoxy)-4-quinazolinamine. TARCEVA contains erlotinib as the
- 10 hydrochloride salt which has the following structural formula:

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- 12 Erlotinib hydrochloride has the molecular formula C<sub>22</sub>H<sub>23</sub>N<sub>3</sub>O<sub>4</sub>.HCl and a molecular
- weight of 429.90. The molecule has a pK<sub>a</sub> of 5.42 at 25°C. Erlotinib hydrochloride is
- very slightly soluble in water, slightly soluble in methanol and practically insoluble
- in acetonitrile, acetone, ethyl acetate and hexane.
- Aqueous solubility of erlotinib hydrochloride is dependent on pH with increased
- solubility at a pH of less than 5 due to protonation of the secondary amine. Over the
- pH range of 1.4 to 9.6, maximal solubility of approximately 0.4 mg/mL occurs at a
- pH of approximately 2.
- 20 TARCEVA tablets are available in three dosage strengths containing erlotinib
- 21 hydrochloride (27.3 mg, 109.3 mg and 163.9 mg) equivalent to 25 mg, 100 mg and
- 22 150 mg erlotinib and the following inactive ingredients: lactose monohydrate,
- 23 hypromellose, hydroxypropyl cellulose, magnesium stearate, microcrystalline
- 24 cellulose, sodium starch glycolate, sodium lauryl sulfate and titanium dioxide. The
- 25 tablets also contain trace amounts of color additives, including FD&C Yellow #6 (25)
- 26 mg only) for product identification.

# CLINICAL PHARMACOLOGY

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higher rate of erlotinib clearance.

21	CLINICAL PHARMACOLOGY
28	Mechanism of Action and Pharmacodynamics
29	The mechanism of clinical antitumor action of erlotinib is not fully characterized.
30	Erlotinib inhibits the intracellular phosphorylation of tyrosine kinase associated with
31	the epidermal growth factor receptor (EGFR). Specificity of inhibition with regard to
32	other tyrosine kinase receptors has not been fully characterized. EGFR is expressed
33	on the cell surface of normal cells and cancer cells.
34	Pharmacokinetics
35	Erlotinib is about 60% absorbed after oral administration and its bioavailability is
36	substantially increased by food to almost 100%. Its half-life is about 36 hours and it
37	is cleared predominantly by CYP3A4 metabolism.
38	Absorption and Distribution
39	Bioavailability of erlotinib following a 150 mg oral dose of TARCEVA is about 60%
40	and peak plasma levels occur 4 hrs after dosing. Food increases bioavailability
41	substantially, to almost 100%.
42	Following absorption, erlotinib is approximately 93% protein bound to albumin and
43	alpha-1 acid glycoprotein (AAG). Erlotinib has an apparent volume of distribution of
44	232 liters.
45	Metabolism and Elimination
46	In vitro assays of cytochrome P450 metabolism showed that erlotinib is metabolized
47	primarily by CYP3A4 and to a lesser extent by CYP1A2, and the extrahepatic
48	isoform CYP1A1. Following a 100 mg oral dose, 91% of the dose was recovered:
49	83% in feces (1% of the dose as intact parent) and $8%$ in urine (0.3% of the dose as
50	intact parent).
51	A population pharmacokinetic analysis in 591 patients receiving single-agent
52	TARCEVA showed a median half-life of 36.2 hours. Time to reach steady state
53	plasma concentration would therefore be 7 - 8 days. No significant relationships of

clearance to patient age, body weight or gender were observed. Smokers had a 24%

#### 57 Patients with Hepatic Impairment 58 Erlotinib is cleared predominantly by the liver. No data are currently available 59 regarding the influence of hepatic dysfunction and/or hepatic metastases on the 60 pharmacokinetics of erlotinib (see PRECAUTIONS - Patients with Hepatic 61 Impairment, ADVERSE REACTIONS and DOSAGE AND 62 **ADMINISTRATION - Dose Modifications** sections). 63 Patients with Renal Impairment 64 Less than 9% of a single dose is excreted in the urine. No clinical studies have been 65 conducted in patients with compromised renal function. 66 Interactions 67 Erlotinib is metabolized predominantly by CYP3A4, and inhibitors of CYP3A4 68 would be expected to increase exposure. Co-treatment with the potent CYP3A4 69 inhibitor ketoconazole increased erlotinib AUC by 2/3 (see PRECAUTIONS -70 **Drug Interactions and DOSAGE AND ADMINISTRATION - Dose** 71 Modifications sections). 72 Pre- or co-treatment with the CYP3A4 inducer rifampicin increased erlotinib 73 clearance by 3-fold and reduced AUC by 2/3 (see PRECAUTIONS - Drug 74 **Interactions and DOSAGE AND ADMINISTRATION - Dose Modifications** 75 sections). 76 **CLINICAL STUDIES** 77 TARCEVA as Monotherapy in Non-Small Cell Lung Cancer 78 (NSCLC) 79 The efficacy and safety of TARCEVA was assessed in a randomized, double blind, 80 placebo-controlled trial in 731 patients with locally advanced or metastatic NSCLC 81 after failure of at least one chemotherapy regimen. Patients were randomized 2:1 to 82 receive TARCEVA 150 mg or placebo (488 Tarceva, 243 placebo) orally once daily 83 until disease progression or unacceptable toxicity. Study end points included overall 84 survival, response rate, and progression-free survival (PFS). Duration of response 85 was also examined. The primary endpoint was survival. The study was conducted in

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**Special Populations** 

17 countries. About 1/3 of the patients (238) had EGFR expression statuscharacterized.

Table 1 summarizes the demographic and disease characteristics of the study population. Demographic characteristics were well balanced between the two treatment groups. About two-thirds of the patients were male. Approximately one-fourth had a baseline ECOG performance status (PS) of 2, and 9% had a baseline ECOG PS of 3. Fifty percent of the patients had received only one prior regimen of chemotherapy. About three quarters of these patients were known to have smoked at some time.

**Table 1: Demographic and Disease Characteristics** 

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**TARCEVA** Placebo (N = 488)(N = 243)Characteristics N (%) N (%) Gender Female 173 (35)83 (34)Male 315 (65)160 (66)Age (Years) <65 299 (61) 153 (63)90 189 (39)(37)≥65 Race Caucasian 379 (78)188 (77)Black 18 (4) 12 (5) Asian 63 (13)28 (12)Other 28 (6) 15 (6) ECOG Performance Status at Baseline\* 0 64 (13)34 (14)1 256 (52)132 (54)2 126 (26)56 (23)3 42 (9) 21 (9) Weight Loss in Previous 6 Months < 5% 320 166 (66)(68)5 - 10%96 (20)36 (15)

		CEVA = 488)		cebo = 243)
Characteristics	N	(%)	N	(%)
> 10%	52	(11)	29	(12)
Unknown	20	(4)	12	(5)
Smoking History				
Never Smoked	104	(21)	42	(17)
Current or Ex-smoker	358	(73)	187	(77)
Unknown	26	(5)	14	(6)
Histological Classification				
Adenocarcinoma	246	(50)	119	(49)
Squamous	144	(30)	78	(32)
Undifferentiated Large Cell	41	(8)	23	(9)
Mixed Non-Small Cell	11	(2)	2	(<1)
Other	46	(9)	21	(9)
Time from Initial Diagnosis to Randomization (Months)				
<6	63	(13)	34	(14)
6 – 12	157	(32)	85	(35)
>12	268	(55)	124	(51)
Best Response to Prior Therapy at Baseline*				
CR/PR	196	(40)	96	(40)
PD	101	(21)	51	(21)
SD	191	(39)	96	(40)
Number of Prior Regimens at Baseline*				
1	243	(50)	121	(50)
2	238	(49)	119	(49)
3	7	(1)	3	(1)
Exposure to Prior Platinum at Baseline*				
Yes	454	(93)	224	(92)
No	34	(7)	19	(8)

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The results of the study are shown in Table 2.

<sup>\*</sup> Stratification factor as documented at baseline; distribution differs slightly from values reported at time of randomization.

#### 102 **Table 2: Efficacy Results**

chemotherapy.

(3) Two-sided Fisher's exact test

	Tarceva	Placebo	Hazard Ratio (1)	95% CI	p-value
	Median	Median			
Survival	6.7 mo	4.7 mo	0.73	0.61 - 0.86	< 0.001 (2)
1-year Survival	31.2%	21.5%			
Progression-	Median	Median			
Free Survival	9.9 wk	7.9 wk	0.59	0.50 - 0.70	< 0.001 (2)
Tumor					
Response					
(CR+PR)	8.9%	0.9%			< 0.001 (3)
Response	Median	Median			
Duration	34.3 wk	15.9 wk			

(1) Cox regression model with the following covariates: ECOG performance

status, number of prior regimens, prior platinum, best response to prior

(2) Two-sided Log-Rank test stratified by ECOG performance status, number

of prior regimens, prior platinum, best response to prior chemotherapy.

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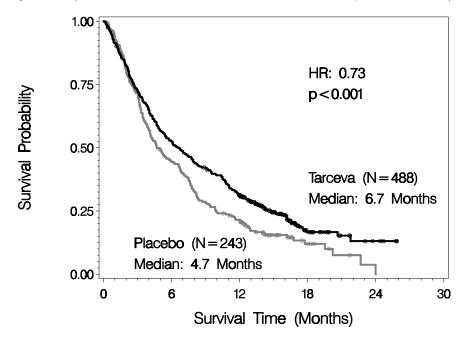
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Survival was evaluated in the intent-to-treat population. Figure 1 depicts the Kaplan-Meier curves for overall survival. The primary survival and PFS analyses were twosided Log-Rank tests stratified by ECOG performance status, number of prior regimens, prior platinum, best response to prior chemotherapy.

Figure 1: Kaplan-Meier Curve for Overall Survival of Patients by Treatment Group



**Note:** HR is from Cox regression model with the following covariates: ECOG performance status, number of prior regimens, prior platinum, best response to prior chemotherapy. P-value is from two-sided Log-Rank test stratified by ECOG performance status, number of prior regimens, prior platinum, best response to prior chemotherapy.

A series of subsets of patients were examined in exploratory univariate analyses. The results of these analyses are shown in Figure 2. The effect of TARCEVA on survival was similar across most subsets. An apparently larger effect, however, was observed in two subsets: patients with EGFR positive tumors (HR = 0.65) and patients who never smoked (HR = 0.42). These subsets are considered further below.

## Figure 2: Survival Hazard Ratio (HR) (Tarceva: Placebo) in Subgroups

# **According to Pretreatment Characteristics**

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Factors	N	HR	95% CI	
Tarceva : Placebo	731	0.76	0.6-0.9	+
Performance Status 0–1 Performance Status 2–3	486 245	0.73 0.77	0.6 - 0.9 0.6 - 1.0	+
Male	475	0.76	0.6 – 0.9	+
Female	256	0.80	0.6 – 1.1	
Age <65	452	0.75	0.6 – 0.9	+
Age ≥65	279	0.79	0.6 – 1.0	
Adeno Ca	365	0.71	0.6 - 0.9	+
Squamous Cell Ca	222	0.67	0.5 - 0.9	
Other Histology	144	1.04	0.7 - 1.5	
Prior Weight Loss <5%	486	0.77	0.6 – 0.9	+
Prior Weight Loss 5–10%	132	0.63	0.4 – 1.0	
Prior Weight Loss >10%	81	0.70	0.4 – 1.1	
Never Smoked	146	0.42	0.3 – 0.6	+ +
Current/Ex-Smoker	545	0.87	0.7 – 1.1	
One Prior Regimen Two+ Prior Regimens	364 367	0.76 0.75	0.6 – 1.0 0.6 – 1.0	+
Prior Platinum No Prior Platinum	678 53	0.72 1.41	0.6 - 0.9 $0.7 - 2.7$	+
Prior Taxane	267	0.74	0.6 – 1.0	+
No Prior Taxane	464	0.78	0.6 – 1.0	
Best Prior Response: CR/PR	292	0.67	0.5 – 0.9	+-
Best Prior Response: SD	287	0.83	0.6 – 1.1	-+-
Best Prior Response: PD	152	0.85	0.6 – 1.2	-+-
<6 mos Since Diagnosis	97	0.68	0.4 - 1.1	- <del>  -  -</del>
6–12 mos Since Diagnosis	242	0.87	0.7 - 1.2	- <del>  -  -</del>
>12 mos Since Diagnosis	392	0.75	0.6 - 0.9	- <del>  -  -  -  -  -  -  -  -  -  -  -  -  - </del>
EGFR Positive	127	0.65	0.4 - 1.0	+
EGFR Negative	111	1.01	0.7 - 1.6	
EGFR Unmeasured	493	0.76	0.6 - 0.9	
Caucasian	567	0.79	0.6 – 1.0	+
Asian	91	0.61	0.4 – 1.0	
Stage IV at Diagnosis	329	0.92	0.7-1.2	+
Stage < IV at Diagnosis	402	0.65	0.5-0.8	
			0.	00 0.50 1.00 1.50 2.00 2.50 HR Scale

**Note:** Depicted are the univariate hazard ratio (HR) for death in the TARCEVA patients relative to the placebo patients, the 95% confidence interval (CI) for the

131	HR, and the sample size (N) in each subgroup. The hash mark on the horizontal bar
132	represents the HR, and the length of the horizontal bar represents the 95%
133	confidence interval. A hash mark to the left of the vertical line corresponds to a HR
134	that is less than 1.00, which indicates that survival is better in the TARCEVA arm
135	compared with the placebo arm in that subgroup.
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137	Relation of Results to EGFR Protein Expression Status (as
138	Determined by Immunohistochemistry)
139	Analysis of the impact of EGFR expression status on the treatment effect on clinical
140	outcome is limited because EGFR status is known for only 238 study patients (33%).
141	EGFR status was ascertained for patients who already had tissue samples prior to
142	study enrollment. However, the survival in the EGFR tested population, and the
143	effect of TARCEVA were almost identical to that in the entire study population,
144	suggesting that the tested population was a representative sample. A positive EGFR
145	expression status was defined as having at least 10% of cells staining for EGFR in
146	contrast to the 1% cut-off specified in the DAKO EGFR pharmD $\mathbf{x}^{\text{TM}}$ kit instructions.
147	The use of the pharmDx kit has not been validated for use in non-small cell lung
148	cancer.
149	TARCEVA prolonged survival in the EGFR positive subgroup (N = 127; HR = 0.65;
150	95% CI = $0.43 - 0.97$ )(Figure 3) and the subgroup whose EGFR status was
151	unmeasured (N = 493; HR = $0.76$ ; 95% CI = $0.61 - 0.93$ )(Figure 5), but did not
152	appear to have an effect on survival in the EGFR negative subgroup (N = 111; HR =
153	1.01; 95% CI = $0.65 - 1.57$ )(Figure 4). However, the confidence intervals for the
154	EGFR positive, negative and unmeasured subgroups are wide and overlap, so that a
155	survival benefit due to TARCEVA in the EGFR negative subgroup cannot be
156	excluded.
157	For the subgroup of patients who never smoked, EGFR status also appeared to be
158	predictive of TARCEVA survival benefit. Patients who never smoked and were
159	EGFR positive had a large TARCEVA survival benefit (N = 30; HR = 0.27; 95% CI
160	= $0.11 - 0.67$ ). There were too few EGFR negative patients who never smoked to
161	reach a conclusion.
162	Tumor responses were observed in all EGFR subgroups: 11.6% in the EGFR positive
163	subgroup, 9.5% in the EGFR unmeasured subgroup and 3.2% in the EGFR negative

subgroup. An improvement in progression free survival was demonstrated in the EGFR positive subgroup (HR = 0.49; 95% CI = 0.33 - 0.72), the EGFR unmeasured subgroup (HR = 0.56; 95% CI = 0.46 - 0.70), and less certain in the EGFR negative subgroup (HR = 0.91; 95% CI = 0.59 - 1.39).

Figure 3: Survival in EGFR Positive Patients

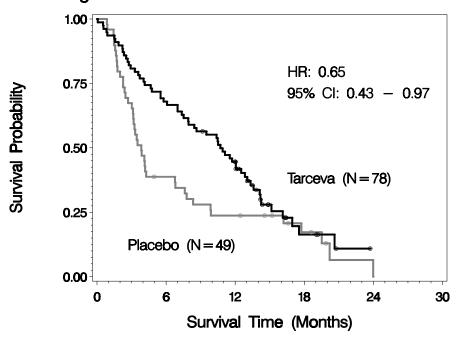
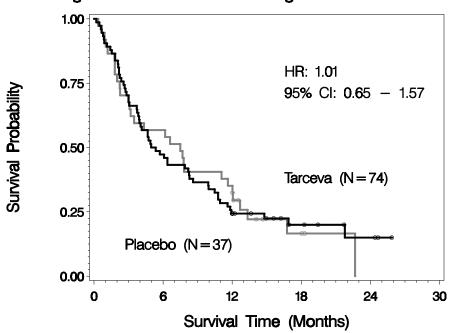


Figure 4: Survival in EGFR Negative Patients



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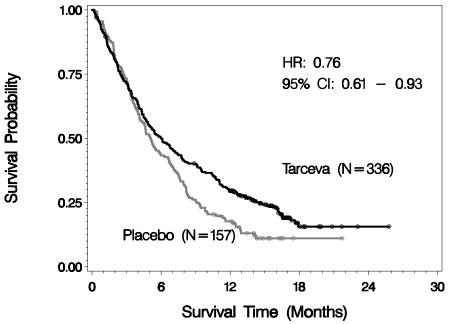
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Figure 5: Survival in EGFR Unmeasured Patients



TARCEVA Administered Concurrently with Chemotherapy in NSCLC

Results from two, multicenter, placebo-controlled, randomized, trials in over 1000 patients conducted in first-line patients with locally advanced or metastatic NSCLC showed no clinical benefit with the concurrent administration of TARCEVA with platinum-based chemotherapy [carboplatin and paclitaxel (TARCEVA, N = 526) or gemcitabine and cisplatin (TARCEVA, N = 580)].

# INDICATIONS AND USAGE

TARCEVA is indicated for the treatment of patients with locally advanced or metastatic non-small cell lung cancer after failure of at least one prior chemotherapy regimen.

Results from two, multicenter, placebo-controlled, randomized, Phase 3 trials conducted in first-line patients with locally advanced or metastatic NSCLC showed no clinical benefit with the concurrent administration of TARCEVA with platinum-based chemotherapy [carboplatin and paclitaxel or gemcitabine and cisplatin] and its use is not recommended in that setting.

#### 187 CONTRAINDICATIONS 188 None. 189 WARNINGS 190 **Pulmonary Toxicity** 191 There have been infrequent reports of serious Interstitial Lung Disease (ILD), 192 including fatalities, in patients receiving TARCEVA for treatment of NSCLC or 193 other advanced solid tumors. In the randomized single-agent study (see CLINICAL 194 **STUDIES** section), the incidence of ILD (0.8%) was the same in both the placebo 195 and TARCEVA groups. The overall incidence in TARCEVA-treated patients from 196 all studies (including uncontrolled studies and studies with concurrent 197 chemotherapy) was approximately 0.6%. Reported diagnoses in patients suspected of 198 having ILD included pneumonitis, interstitial pneumonia, interstitial lung disease, 199 obliterative bronchiolitis, pulmonary fibrosis, Acute Respiratory Distress Syndrome 200 and lung infiltration. Symptoms started from 5 days to more than 9 months (median 201 47 days) after initiating TARCEVA therapy. Most of the cases were associated with 202 confounding or contributing factors such as concomitant/prior chemotherapy, prior 203 radiotherapy, pre-existing parenchymal lung disease, metastatic lung disease, or 204 pulmonary infections. 205 In the event of acute onset of new or progressive, unexplained pulmonary symptoms 206 such as dyspnea, cough, and fever, TARCEVA therapy should be interrupted 207 pending diagnostic evaluation. If ILD is diagnosed, TARCEVA should be 208 discontinued and appropriate treatment instituted as necessary (see ADVERSE 209 **REACTIONS and DOSAGE AND ADMINISTRATION - Dose Modifications** 210 sections). 211 **Pregnancy Category D** 212 Erlotinib has been shown to cause maternal toxicity with associated embryo/fetal 213 lethality and abortion in rabbits when given at doses that result in plasma drug 214 concentrations of approximately 3 times those in humans (AUCs at 150 mg daily 215 dose). When given during the period of organogenesis to achieve plasma drug 216 concentrations approximately equal to those in humans, based on AUC, there was no 217 increased incidence of embryo/fetal lethality or abortion in rabbits or rats. However, 218 female rats treated with 30 mg/m<sup>2</sup>/day or 60 mg/m<sup>2</sup>/day (0.3 or 0.7 times the clinical

219	dose, on a mg/m <sup>2</sup> basis) of erlotinib prior to mating through the first week of
220	pregnancy had an increase in early resorptions which resulted in a decrease in the
221	number of live fetuses.
222	No teratogenic effects were observed in rabbits or rats.
223	There are no adequate and well-controlled studies in pregnant women using
224	TARCEVA. Women of childbearing potential should be advised to avoid pregnancy
225	while on TARCEVA. Adequate contraceptive methods should be used during
226	therapy, and for at least 2 weeks after completing therapy. Treatment should only be
227	continued in pregnant women if the potential benefit to the mother outweighs the risk
228	to the fetus. If TARCEVA is used during pregnancy, the patient should be apprised
229	of the potential hazard to the fetus or potential risk for loss of the pregnancy.
230	PRECAUTIONS
231	Drug Interactions
232	Co-treatment with the potent CYP3A4 inhibitor ketoconazole increases erlotinib
233	AUC by 2/3. Caution should be used when administering or taking TARCEVA with
234	ketoconazole and other strong CYP3A4 inhibitors such as atanazavir,
235	clarithromycin, indinavir, itraconazole, nefazodone, nelfinavir, ritonavir,
236	saquinavir, telithromycin, troleandomycin (TAO), and voriconazole (see DOSAGE
237	AND ADMINISTRATION - Dose Modifications section).
238	Pre-treatment with the CYP3A4 inducer rifampicin decreased erlotinib AUC by
239	about 2/3. Alternate treatments lacking CYP3A4 inducing activity should be
240	considered. If an alternative treatment is unavailable, a TARCEVA dose greater than
241	150 mg should be considered. If the TARCEVA dose is adjusted upward, the dose
242	will need to be reduced upon discontinuation of rifampicin or other inducers. Other
243	CYP3A4 inducers include rifabutin, rifapentin, phenytoin, carbamazepine,
244	phenobarbital and St. John's Wort (see DOSAGE AND ADMINISTRATION -
245	Dose Modifications section).
246	Hepatotoxicity
247	Asymptomatic increases in liver transaminases have been observed in TARCEVA
248	treated patients; therefore, periodic liver function testing (transaminases, bilirubin,
249	and alkaline phosphatase) should be considered. Dose reduction or interruption of

250	TARCEVA should be considered if changes in liver function are severe (see
251	ADVERSE REACTIONS section).
252	Patients with Hepatic Impairment
253	In vitro and in vivo evidence suggest that erlotinib is cleared primarily by the liver.
254	Therefore, erlotinib exposure may be increased in patients with hepatic dysfunction
255	(see CLINICAL PHARMACOLOGY - Special Populations - Patients with
256	Hepatic Impairment and DOSAGE AND ADMINISTRATION - Dose
257	Modification sections).
258	Elevated International Normalized Ratio and Potential Bleeding
259	International Normalized Ratio (INR) elevations, and infrequent reports of bleeding
260	events including gastrointestinal bleeding have been reported in clinical studies,
261	some associated with concomitant warfarin administration. Patients taking warfarin
262	or other coumarin-derivative anticoagulants should be monitored regularly for
263	changes in prothrombin time or INR (see ADVERSE REACTIONS section).
264	Carcinogenesis, Mutagenesis, Impairment of Fertility
265	Erlotinib has not been tested for carcinogenicity.
266	Erlotinib has been tested for genotoxicity in a series of in vitro assays (bacterial
267	mutation, human lymphocyte chromosome aberration, and mammalian cell
268	mutation) and an in vivo mouse bone marrow micronucleus test and did not cause
269	genetic damage. Erlotinib did not impair fertility in either male or female rats.
270	Pregnancy
271	Pregnancy Category D (see WARNINGS and PRECAUTIONS - Information
272	for Patients sections).
273	Nursing Mothers
274	It is not known whether erlotinib is excreted in human milk. Because many drugs are
275	excreted in human milk and because the effects of TARCEVA on infants have not
276	been studied, women should be advised against breast-feeding while receiving
277	TARCEVA therapy.

278	Pediatric Use
279	The safety and effectiveness of TARCEVA in pediatric patients have not been
280	studied.
281	Geriatric Use
282	Of the total number of patients participating in the randomized trial, 62% were less
283	than 65 years of age, and 38% of patients were aged 65 years or older. The survival
284	benefit was maintained across both age groups (see CLINICAL STUDIES section).
285	No meaningful differences in safety or pharmacokinetics were observed between
286	younger and older patients. Therefore, no dosage adjustments are recommended in
287	elderly patients.
288	Information for Patients
289	If the following signs or symptoms occur, patients should seek medical advice
290	promptly (see WARNINGS, ADVERSE REACTIONS and DOSAGE AND
291	ADMINISTRATION - Dose Modification sections).
292	Severe or persistent diarrhea, nausea, anorexia, or vomiting
293	Onset or worsening of unexplained shortness of breath or cough
294	• Eye irritation
295	Women of childbearing potential should be advised to avoid becoming pregnant
296	while taking TARCEVA (see WARNINGS - Pregnancy Category D section).
297	ADVERSE REACTIONS
298	Safety evaluation of TARCEVA is based on 856 cancer patients who received
299	TARCEVA as monotherapy and 1228 patients who received TARCEVA
300	concurrently with chemotherapy. Adverse events, regardless of causality, that
301	occurred in at least 10% of patients treated with TARCEVA and at least 3% more
302	often than in the placebo group in the randomized trial are summarized by NCI-CTC
303	(version 2.0) Grade in Table 3.
304	There have been reports of serious ILD, including fatalities, in patients receiving
305	TARCEVA for treatment of NSCLC or other advanced solid tumors (see
306	WARNINGS - Pulmonary Toxicity, and DOSAGE AND ADMINISTRATION -
307	Dose Modifications sections).

The most common adverse reactions in patients receiving TARCEVA were rash and diarrhea. Grade 3/4 rash and diarrhea occurred in 9% and 6%, respectively, in TARCEVA-treated patients. Rash and diarrhea each resulted in study discontinuation in 1% of TARCEVA-treated patients. Six percent and 1% of patients needed dose reduction for rash and diarrhea, respectively. The median time to onset of rash was 8 days, and the median time to onset of diarrhea was 12 days.

Table 3: Adverse Events Occurring in ≥10% of TARCEVA-treated Patients (2:1 Randomization of TARCEVA to Placebo)

	,	TARCEVA N = 485	1		Placebo N = 242	
NCI CTC Grade	Any Grade	Grade 3	Grade 4	Any Grade	Grade 3	Grade 4
MedDRA Preferred Term	%	%	%	%	%	%
Rash	75	8	<1	17	0	0
Diarrhea	54	6	<1	18	<1	0
Anorexia	52	8	1	38	5	<1
Fatigue	52	14	4	45	16	4
Dyspnea	41	17	11	35	15	11
Cough	33	4	0	29	2	0
Nausea	33	3	0	24	2	0
Infection	24	4	0	15	2	0
Vomiting	23	2	<1	19	2	0
Stomatitis	17	<1	0	3	0	0
Pruritus	13	<1	0	5	0	0
Dry skin	12	0	0	4	0	0
Conjunctivitis	12	<1	0	2	<1	0
Keratoconjunctivitis sicca	12	0	0	3	0	0
Abdominal pain	11	2	<1	7	1	<1

Liver function test abnormalities (including elevated alanine aminotransferase (ALT), aspartate aminotransferase (AST) and bilirubin) have been observed. These elevations were mainly transient or associated with liver metastases. Grade 2 (>2.5 –  $5.0 \times \text{ULN}$ ) ALT elevations occurred in 4% and <1% of TARCEVA and placebo treated patients, respectively. Grade 3 (>  $5.0 - 20.0 \times \text{ULN}$ ) elevations were not observed in TARCEVA-treated patients. Dose reduction or interruption of

322	TARCEVA should be considered if changes in liver function are severe (see
323	DOSAGE AND ADMINISTRATION - Dose Modification section).
324	Infrequent cases of gastrointestinal bleeding have been reported in clinical studies,
325	some associated with concomitant warfarin administration (see PRECAUTIONS -
326	Elevated International Normalized Ratio and Potential Bleeding section) and
327	some with concomitant NSAID administration.
328	NCI CTC grade 3 conjunctivitis and keratitis have been reported infrequently in
329	patients receiving TARCEVA therapy. Corneal ulcerations may also occur (see
330	PRECAUTIONS - Information for Patients section).
331	In general, no notable differences in the safety of TARCEVA could be discerned
332	between females or males and between patients younger or older than the age of 65
333	years. The safety of TARCEVA appears similar in Caucasian and Asian patients (see
334	PRECAUTIONS - Geriatric Use section).
335	OVERDOSAGE
336	Single oral doses of TARCEVA up to 1,000 mg in healthy subjects, and up to 1,600
337	mg in cancer patients have been tolerated. Repeated twice-daily doses of 200 mg in
338	healthy subjects were poorly tolerated after only a few days of dosing. Based on the
339	data from these studies, an unacceptable incidence of severe adverse events, such as
340	diarrhea, rash, and liver transaminase elevation, may occur above the recommended
341	dose of 150 mg daily. In case of suspected overdose, TARCEVA should be withheld
342	and symptomatic treatment instituted.
343	DOSAGE AND ADMINISTRATION
344	The recommended daily dose of TARCEVA is 150 mg taken at least one hour before
345	or two hours after the ingestion of food. Treatment should continue until disease
346	progression or unacceptable toxicity occurs. There is no evidence that treatment
347	beyond progression is beneficial.
348	Dose Modifications
349	In patients who develop an acute onset of new or progressive pulmonary symptoms,
350	such as dyspnea, cough or fever, treatment with TARCEVA should be interrupted
351	pending diagnostic evaluation. If ILD is diagnosed, TARCEVA should be

352	discontinued and appropriate treatment instituted as necessary (see WARNINGS -
353	Pulmonary Toxicity section).
354	Diarrhea can usually be managed with loperamide. Patients with severe diarrhea who
355	are unresponsive to loperamide or who become dehydrated may require dose
356	reduction or temporary interruption of therapy. Patients with severe skin reactions
357	may also require dose reduction or temporary interruption of therapy.
358	When dose reduction is necessary, the TARCEVA dose should be reduced in 50 mg
359	decrements.
360	In patients who are being concomitantly treated with a strong CYP3A4 inhibitor
361	such as atanazavir, clarithromycin, indinavir, itraconazole, ketoconazole,
362	nefazodone, nelfinavir, ritonavir, saquinavir, telithromycin, troleandomycin (TAO),
363	or voriconazole, a dose reduction should be considered should severe adverse
364	reactions occur.
365	Pre-treatment with the CYP3A4 inducer rifampicin decreased erlotinib AUC by
366	about 2/3. Alternate treatments lacking CYP3A4 inducing activity should be
367	considered. If an alternative treatment is unavailable, a TARCEVA dose greater than
368	150 mg should be considered. If the TARCEVA dose is adjusted upward, the dose
369	will need to be reduced upon discontinuation of rifampicin or other inducers. Other
370	CYP3A4 inducers include rifabutin, rifapentin, phenytoin, carbamazepine,
371	phenobarbital and St. John's Wort. These too should be avoided if possible (see
372	PRECAUTIONS - Drug Interactions section).
373	Erlotinib is eliminated by hepatic metabolism and biliary excretion. Therefore,
374	caution should be used when administering TARCEVA to patients with hepatic
375	impairment. Dose reduction or interruption of TARCEVA should be considered
376	should severe adverse reactions occur (see CLINICAL PHARMACOLOGY -
377	Special Populations – Patients With Hepatic Impairment, PRECAUTIONS -
378	Patients With Hepatic Impairment, and ADVERSE REACTIONS sections).
379	HOW SUPPLIED
380	The 25 mg, 100 mg and 150 mg strengths are supplied as white film-coated tablets
381	for daily oral administration.

382	TARCEVA <sup>TM</sup> (erlotinib) Tablets, 25 mg: Round, biconvex face and straight sides,
383	white film-coated, printed in orange with a "T" and "25" on one side and plain on the
384	other side. Supplied in bottles of 30 tablets (NDC 50242-062-01).
385	TARCEVA <sup>TM</sup> (erlotinib) Tablets, 100 mg: Round, biconvex face and straight sides,
386	white film-coated, printed in gray with "T" and "100" on one side and plain on the
387	other side. Supplied in bottles of 30 tablets (NDC 50242-063-01).
388	TARCEVA <sup>TM</sup> (erlotinib) Tablets, 150 mg: Round, biconvex face and straight sides,
389	white film-coated, printed in maroon with "T" and "150" on one side and plain on
390	the other side. Supplied in bottles of 30 tablets (NDC 50242-064-01).
391	STORAGE
392	Store at 25°C (77°F); excursions permitted to 15° – 30°C (59° – 86°F). See USP
393	Controlled Room Temperature.

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Manufactured by:

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Distributed by:

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For further information please call 1-877-TARCEVA (1-877-827-2382).

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