



**Femara®  
(letrozole tablets)**

**T2000-xx  
XXXXXXXX**

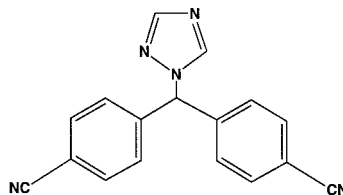
**2.5 mg Tablets**

Rx only

**Prescribing Information**

## DESCRIPTION

Femara (letrozole tablets) for oral administration contains 2.5 mg of letrozole, a nonsteroidal aromatase inhibitor (inhibitor of estrogen synthesis). It is chemically described as 4,4'-(1H-1,2,4-Triazol-1-ylmethylene)dibenzonitrile, and its structural formula is



Letrozole is a white to yellowish crystalline powder, practically odorless, freely soluble in dichloromethane, slightly soluble in ethanol, and practically insoluble in water. It has a molecular weight of 285.31, empirical formula  $C_{17}H_{11}N_5$ , and a melting range of 184°C-185°C.

Femara (letrozole tablets) is available as 2.5 mg tablets for oral administration.

*Inactive Ingredients.* Colloidal silicon dioxide, ferric oxide, hydroxypropyl methylcellulose, lactose monohydrate, magnesium stearate, maize starch, microcrystalline cellulose, polyethylene glycol, sodium starch glycolate, talc, and titanium dioxide.

## CLINICAL PHARMACOLOGY

### Mechanism of Action

The growth of some cancers of the breast is stimulated or maintained by estrogens. Treatment of breast cancer thought to be hormonally responsive (i.e., estrogen and/or progesterone receptor positive or receptor unknown) has included a variety of efforts to decrease estrogen levels (ovariectomy, adrenalectomy, hypophysectomy) or inhibit estrogen effects (antiestrogens and progestational agents). These interventions lead to decreased tumor mass or delayed progression of tumor growth in some women.

28 In postmenopausal women, estrogens are mainly derived from the action of the aromatase  
29 enzyme, which converts adrenal androgens (primarily androstenedione and testosterone) to  
30 estrone and estradiol. The suppression of estrogen biosynthesis in peripheral tissues and in  
31 the cancer tissue itself can therefore be achieved by specifically inhibiting the aromatase  
32 enzyme.

33 Letrozole is a nonsteroidal competitive inhibitor of the aromatase enzyme system; it inhibits  
34 the conversion of androgens to estrogens. In adult nontumor- and tumor-bearing female  
35 animals, letrozole is as effective as ovariectomy in reducing uterine weight, elevating serum  
36 LH, and causing the regression of estrogen-dependent tumors. In contrast to ovariectomy,  
37 treatment with letrozole does not lead to an increase in serum FSH. Letrozole selectively  
38 inhibits gonadal steroidogenesis but has no significant effect on adrenal mineralocorticoid or  
39 glucocorticoid synthesis.

40 Letrozole inhibits the aromatase enzyme by competitively binding to the heme of the  
41 cytochrome P450 subunit of the enzyme, resulting in a reduction of estrogen biosynthesis in  
42 all tissues. Treatment of women with letrozole significantly lowers serum estrone, estradiol  
43 and estrone sulfate and has not been shown to significantly affect adrenal corticosteroid  
44 synthesis, aldosterone synthesis, or synthesis of thyroid hormones.

#### 45 **Pharmacokinetics**

46 Letrozole is rapidly and completely absorbed from the gastrointestinal tract and absorption is  
47 not affected by food. It is metabolized slowly to an inactive metabolite whose glucuronide  
48 conjugate is excreted renally, representing the major clearance pathway. About 90% of  
49 radiolabeled letrozole is recovered in urine. Letrozole's terminal elimination half-life is about  
50 2 days and steady-state plasma concentration after daily 2.5 mg dosing is reached in 2-  
51 6 weeks. Plasma concentrations at steady-state are 1.5 to 2 times higher than predicted from  
52 the concentrations measured after a single dose, indicating a slight non-linearity in the  
53 pharmacokinetics of letrozole upon daily administration of 2.5 mg. These steady-state levels  
54 are maintained over extended periods, however, and continuous accumulation of letrozole  
55 does not occur. Letrozole is weakly protein bound and has a large volume of distribution  
56 (approximately 1.9 L/kg).

#### 57 **Metabolism and Excretion**

58 Metabolism to a pharmacologically-inactive carbinol metabolite (4,4'-methanol-  
59 bisbenzotrile) and renal excretion of the glucuronide conjugate of this metabolite is the  
60 major pathway of letrozole clearance. Of the radiolabel recovered in urine, at least 75% was  
61 the glucuronide of the carbinol metabolite, about 9% was two unidentified metabolites, and  
62 6% was unchanged letrozole.

63 In human microsomes with specific CYP isozyme activity, CYP 3A4 metabolized letrozole to  
64 the carbinol metabolite while CYP 2A6 formed both this metabolite and its ketone analog. In  
65 human liver microsomes, letrozole strongly inhibited CYP 2A6 and moderately inhibited  
66 CYP 2C19.

67 **Special Populations**

68 ***Pediatric, Geriatric and Race:***

69 In the study populations (adults ranging in age from 35 to >80 years), no change in  
70 pharmacokinetic parameters was observed with increasing age. Differences in letrozole  
71 pharmacokinetics between adult and pediatric populations have not been studied. Differences  
72 in letrozole pharmacokinetics due to race have not been studied.

73 ***Renal Insufficiency:***

74 In a study of volunteers with varying renal function (24-hour creatinine clearance:  
75 9-116 mL/min), no effect of renal function on the pharmacokinetics of single doses of 2.5 mg  
76 of Femara (letrozole tablets) was found. In addition, in a study of 347 patients with advanced  
77 breast cancer, about half of whom received 2.5 mg Femara and half 0.5 mg Femara, renal  
78 impairment (calculated creatinine clearance: 20-50 mL/min) did not affect steady-state plasma  
79 letrozole concentration.

80 ***Hepatic Insufficiency:***

81 In a study of subjects with varying degrees of non-metastatic hepatic dysfunction (e.g.,  
82 cirrhosis, Child-Pugh classification A and B), the mean AUC values of the volunteers with  
83 moderate hepatic impairment were 37% higher than in normal subjects, but still within the  
84 range seen in subjects without impaired function. Patients with severe hepatic impairment  
85 (Child-Pugh classification C) have not been studied (see DOSAGE & ADMINISTRATION  
86 Hepatic Impairment).

87 ***Drug/Drug Interactions:***

88 A pharmacokinetic interaction study with cimetidine showed no clinically significant effect  
89 on letrozole pharmacokinetics. An interaction study with warfarin showed no clinically  
90 significant effect of letrozole on warfarin pharmacokinetics.

91 There is no clinical experience to date on the use of Femara in combination with other anti-  
92 cancer agents.

93 **Pharmacodynamics**

94 In postmenopausal patients with advanced breast cancer, daily doses of 0.1 mg to 5 mg  
95 Femara suppress plasma concentrations of estradiol, estrone, and estrone sulfate by 75%-95%  
96 from baseline with maximal suppression achieved within two-three days. Suppression is  
97 dose-related, with doses of 0.5 mg and higher giving many values of estrone and estrone  
98 sulfate that were below the limit of detection in the assays. Estrogen suppression was  
99 maintained throughout treatment in all patients treated at 0.5 mg or higher.

100 Letrozole is highly specific in inhibiting aromatase activity. There is no impairment of  
101 adrenal steroidogenesis. No clinically-relevant changes were found in the plasma  
102 concentrations of cortisol, aldosterone, 11-deoxycortisol, 17-hydroxy-progesterone, ACTH or  
103 in plasma renin activity among postmenopausal patients treated with a daily dose of Femara  
104 0.1 mg to 5 mg. The ACTH stimulation test performed after 6 and 12 weeks of treatment with

105 daily doses of 0.1, 0.25, 0.5, 1, 2.5, and 5 mg did not indicate any attenuation of aldosterone  
106 or cortisol production. Glucocorticoid or mineralocorticoid supplementation is, therefore, not  
107 necessary.

108 No changes were noted in plasma concentrations of androgens (androstenedione and  
109 testosterone) among healthy postmenopausal women after 0.1, 0.5, and 2.5 mg single doses of  
110 Femara or in plasma concentrations of androstenedione among postmenopausal patients  
111 treated with daily doses of 0.1 mg to 5 mg. This indicates that the blockade of estrogen  
112 biosynthesis does not lead to accumulation of androgenic precursors. Plasma levels of LH  
113 and FSH were not affected by letrozole in patients, nor was thyroid function as evaluated by  
114 TSH levels, T3 uptake, and T4 levels.

## 115 **Clinical Studies**

### 116 **First-Line Breast Cancer:**

117 A randomized, double-blinded, multinational trial compared Femara 2.5 mg with tamoxifen  
118 20 mg in 907 postmenopausal patients with locally advanced (Stage IIIB or locoregional  
119 recurrence not amenable to treatment with surgery or radiation) or metastatic breast cancer.  
120 Time to progression (TTP) was the primary endpoint of the trial. Selected baseline  
121 characteristics for this study are shown in the following table:

**Table 1: Selected Study Population Demographics**

123 <b>Baseline Status</b>	124 <b>Femara</b>	125 <b>tamoxifen</b>
	N=453	N=454
126 <b>Stage of disease</b>		
127 <b>IIIB</b>	6%	7%
128 <b>IV</b>	93%	92%
129 <b>Receptor Status</b>		
130 <b>ER &amp; PR Positive</b>	38%	41%
131 <b>ER or PR Positive</b>	26%	26%
132 <b>Both unknown</b>	34%	33%
133 <b>ER<sup>-</sup> or PR<sup>-</sup> /other unknown</b>	<1%	0
134 <b>Previous Antiestrogen Therapy</b>		
135 <b>Adjuvant</b>	19%	18%
136 <b>None</b>	81%	82%
137 <b>Dominant Site of Disease</b>		
138 <b>Soft Tissue</b>	25%	25%
139 <b>Bone</b>	32%	29%
140 <b>Visceral</b>	43%	46%

143 Femara was superior to tamoxifen in TTP and rate of objective tumor response (see Table 2).  
144 No differences were seen in duration of tumor response. Results from the prospectively

145 defined secondary endpoint of time to treatment failure and clinical benefit were supportive of  
146 the results of the primary efficacy endpoint.

147 Table 2 summarizes the results of the trial, with a total median follow-up of approximately  
148 18 months. (All analyses are unadjusted and use 2-sided p-values.)

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

Table 2: Results			
	Femara 2.5 mg N = 453	tamoxifen 20 mg N = 454	ratio (95% CI) p-value (2-sided)
Median Time to progression	9.4 months	6.0 months	0.70 (0.60, 0.82) <sup>1</sup> p= 0.0001
Objective Response Rate(CR+PR)	137 (30%)	92 (20%)	1.71 (1.26, 2.32) <sup>2</sup> p=0.0006
CR	34 (8%)	13 (3%)	2.75 (1.43, 5.29) <sup>2</sup> p= 0.002

<sup>1</sup>Hazard ratio

<sup>2</sup>odds ratio

164 Figure 1 shows the Kaplan-Meier curves for TTP.

165

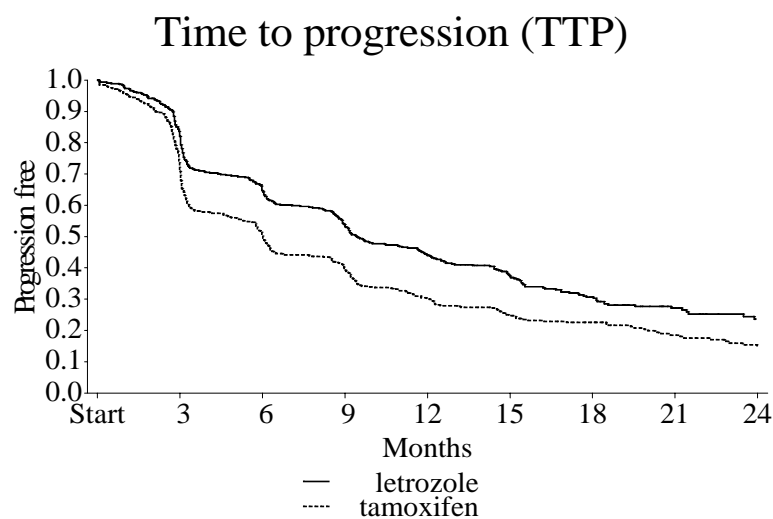
166 Table 3 shows results in the subgroup and women who had received prior antiestrogen  
167 adjuvant therapy and Table 4 shows results by disease site.

168 (Note to Novartis: label this figure similarly to the figure following Table 6)

169

170

Figure 1



171

172

173

174

175

176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192

**Table 3:**  
**Efficacy in patients who received prior antiestrogen adjuvant therapy**

	<b>Femara 2.5 mg</b>	<b>tamoxifen 20 mg</b>	<b>p-value (2-sided)</b>
	<b>N = 84</b>	<b>N = 83</b>	
<b>Median Time To Progression</b>	8.8 months	5.9 months	0.04 <sup>1</sup>
<b>Objective Response Rate (CR + PR)</b>	29%	8%	0.002 <sup>2</sup>

<sup>1</sup>Hazard ratio

<sup>2</sup>odds ratio

193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216

**Table 4:**  
**Efficacy by Disease Site**

	Femara 2.5 mg N = 453	tamoxifen 20 mg N = 454	p-value (2-sided)
<b>Dominant Disease Site</b>			
<b>Soft Tissue:</b>	N = 113	N = 116	
<b>Median TTP</b>	12.9 months	6.4 months	0.05 <sup>1</sup>
<b>Objective Response Rate</b>	<b>48%</b>	<b>35%</b>	<b>0.04<sup>2</sup></b>
<b>Bone:</b>	N = 146	N = 130	
<b>Median TTP</b>	9.7 months	6.2 months	0.01 <sup>1</sup>
<b>Objective Response Rate</b>	22%	14%	0.08 <sup>2</sup>
<b>Visceral:</b>	N = 194	N = 208	
<b>Median TTP</b>	8.2 months	4.7 months	0.001 <sup>1</sup>
<b>Objective Response Rate</b>	26%	16%	0.02 <sup>2</sup>

<sup>1</sup>Hazard ratio

<sup>2</sup>odds ratio

217  
218

**Second-Line Breast Cancer:**

219 Femara was initially studied at doses of 0.1 mg to 5.0 mg daily in six non-comparative  
220 phase I/II trials in 181 postmenopausal estrogen/progesterone receptor positive or unknown  
221 advanced breast cancer patients previously treated with at least antiestrogen therapy. Patients  
222 had received other hormonal therapies and also may have received cytotoxic therapy. Eight  
223 (20%) of forty patients treated with Femara 2.5 mg daily in phase I/II trials achieved an  
224 objective tumor response (complete or partial response).

225 Two large randomized controlled multinational (predominantly European) trials were  
226 conducted in patients with advanced breast cancer who had progressed despite antiestrogen  
227 therapy. Patients were randomized to Femara 0.5 mg daily, Femara 2.5 mg daily, or a  
228 comparator (megestrol acetate 160 mg daily in one study; and aminoglutethimide 250 mg bid  
229 with corticosteroid supplementation in the other study). In each study over 60% of the  
230 patients had received therapeutic antiestrogens, and about one-fifth of these patients had had  
231 an objective response. The megestrol acetate controlled study was double-blind; the other  
232 study was open label. Selected baseline characteristics for each study are shown in the  
233 following table:

234  
235  
236  
237

**Table 5: Selected Study Population Demographics**

<b>Parameter</b>	<b>megestrol acetate study</b>	<b>aminoglutethimide study</b>
<b>No. of Participants</b>	552	557

238	<b>Receptor Status</b>		
239	<b>ER/PR Positive</b>	57%	56%
240	<b>ER/PR Unknown</b>	43%	44%
241			
242	<b>Previous Therapy</b>		
243	<b>Adjuvant Only</b>	33%	38%
244	<b>Therapeutic +/- Adj.</b>	66%	62%
245			
246	<b>Sites of Disease</b>		
247	<b>Soft Tissue</b>	56%	50%
248	<b>Bone</b>	50%	55%
249	<b>Visceral</b>	40%	44%
250			

251 Confirmed objective tumor response (complete response plus partial response) was the  
252 primary endpoint of the trials. Responses were measured according to the Union  
253 Internationale Contre le Cancer (UICC) criteria and verified by independent, blinded review.  
254 All responses were confirmed by a second evaluation 4-12 weeks after the documentation of  
255 the initial response.

256 The following table shows the results for the first trial, with a minimum follow-up of  
257 15 months, that compared Femara 0.5 mg, Femara 2.5 mg, and megestrol acetate 160 mg  
258 daily. (All analyses are unadjusted.)

**Table 6: Megestrol Acetate Study Results**

	<b>Femara 0.5 mg</b>	<b>Femara 2.5 mg</b>	<b>Megestrol Acetate</b>
	N = 188	N = 174	N = 190
263	<b>Objective Response (CR + PR)</b>	22 (11.7%)	41 (23.6%)
264			31 (16.3%)
265	<b>Median Duration of Response</b>	552 days	(Not reached)
266			561 days
267	<b>Median Time to Progression</b>	154 days	170 days
268			168 days
269	<b>Median Survival</b>	633 days	730 days
270			659 days
271	<b>Odds Ratio for Response</b>	Femara 2.5 : Femara 0.5 = 2.33	
272		(95% CI: 1.32, 4.17); p=0.004*	
273		Femara 2.5: Megestrol = 1.58	
274		(95% CI: 0.94, 2.66); p = 0.08*	
275	<b>Relative Risk of Progression</b>	Femara 2.5: Femara 0.5 = 0.81	
276		(95% CI: 0.63, 1.03); p = 0.09*	
277		Femara 2.5: Megestrol = 0.77	
278		(95% CI: 0.60, 0.98), p = 0.03*	

---

\*two-sided p-value

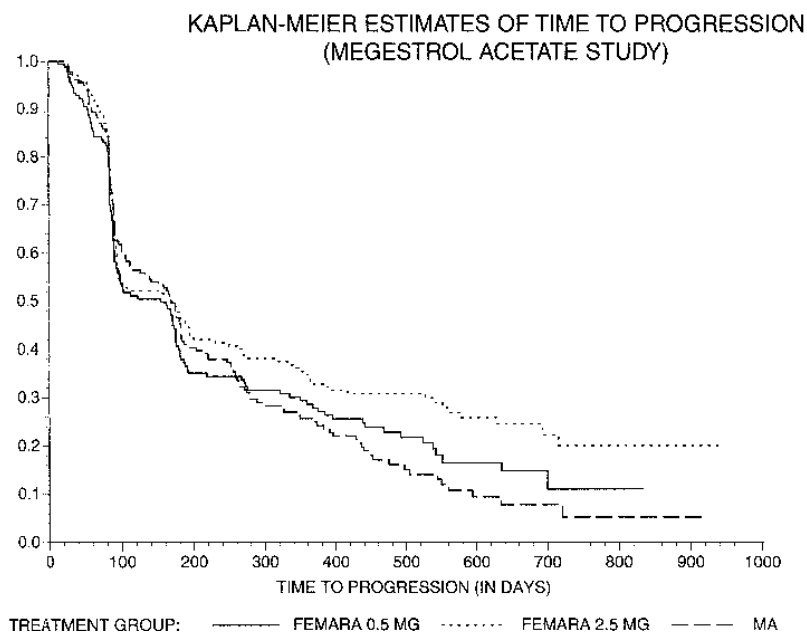


279 The Kaplan-Meier Curve for progression for the megestrol acetate study is shown below in  
280 figure 2.

281

282

Figure 2



283

284 The results for the study comparing Femara to aminoglutethimide, with a minimum follow-up  
285 of nine months, are shown in the following table. (Unadjusted analyses are used).

286

**Table 7: Aminoglutethimide Study Results**

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

	<b>Femara 0.5</b> N = 193	<b>Femara 2.5</b> N = 185	<b>Aminoglutethimide</b> N = 179
<b>Objective Response (CR + PR)</b>	34 (17.6%)	34 (18.4%)	22 (12.3%)
<b>Median Duration of Response</b>	619 days	706 days	450 days
<b>Median Time to Progression</b>	103 days	123 days	112 days
<b>Median Survival</b>	636 days	792 days	592 days
<b>Odds Ratio for Response</b>	Femara 2.5 : Femara 0.5 =1.05 (95% CI: 0.62, 1.79); p=0.85*		Femara 2.5: Aminoglutethimide =1.61 (95% CI: 0.90, 2.87); p = 0.11*
<b>Relative Risk of Progression</b>	Femara 2.5: Femara 0.5 =0.86 (95% CI: 0.68, 1.11); p = 0.25*		Femara 2.5: Aminoglutethimide =0.74 (95% CI: 0.57, 0.94), p = 0.02*

305

306 \*two-sided p-value

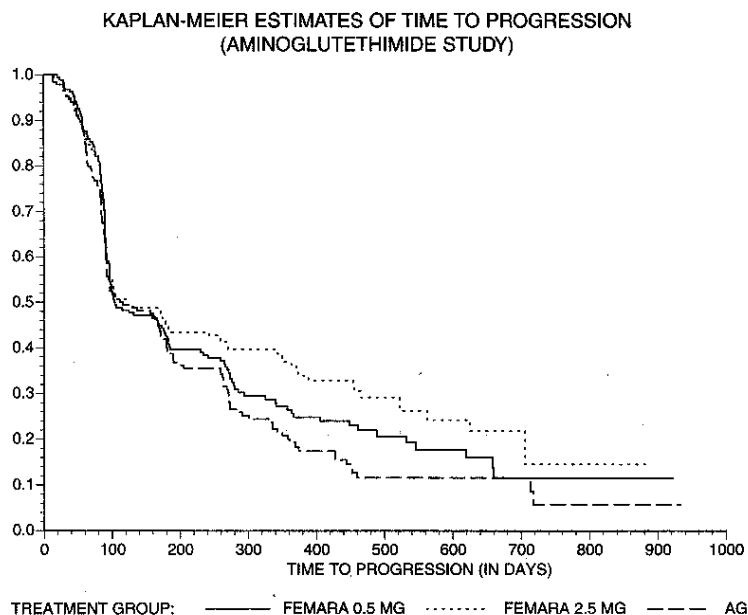
307

308 The Kaplan-Meier Curve for progression for the aminoglutethimide study is shown below in  
309 figure 3.

310

311

Figure 3



312

313

### 314 INDICATIONS AND USAGE

315 Femara (letrozole tablets) is indicated for first-line treatment of postmenopausal women with  
316 hormone receptor positive or hormone receptor unknown locally advanced or metastatic  
317 breast cancer. Femara is also indicated for the treatment of advanced breast cancer in  
318 postmenopausal women with disease progression following antiestrogen therapy.

### 319 CONTRAINDICATIONS

320 Femara is contraindicated in patients with known hypersensitivity to Femara or any of its  
321 excipients.

## 322 **WARNINGS**

### 323 **Pregnancy**

324 Letrozole may cause fetal harm when administered to pregnant women. Studies in rats at  
325 doses equal to or greater than 0.003 mg/kg (about 1/100 the daily maximum recommended  
326 human dose on a mg/m<sup>2</sup> basis) administered during the period of organogenesis, have shown  
327 that letrozole is embryotoxic and fetotoxic, as indicated by intrauterine mortality, increased  
328 resorption, increased postimplantation loss, decreased numbers of live fetuses and fetal  
329 anomalies including absence and shortening of renal papilla, dilation of ureter, edema and  
330 incomplete ossification of frontal skull and metatarsals. Letrozole was teratogenic in rats. A  
331 0.03 mg/kg dose (about 1/10 the daily maximum recommended human dose on a mg/m<sup>2</sup>  
332 basis) caused fetal domed head and cervical/centrum vertebral fusion.

333 Letrozole is embryotoxic at doses equal to or greater than 0.002 mg/kg and fetotoxic when  
334 administered to rabbits at 0.02 mg/kg (about 1/100,000 and 1/10,000 the daily maximum  
335 recommended human dose on a mg/m<sup>2</sup> basis, respectively). Fetal anomalies included  
336 incomplete ossification of the skull, sternebrae, and fore- and hindlegs.

337 There are no studies in pregnant women. Femara is indicated for post-menopausal women. If  
338 there is exposure to letrozole during pregnancy, the patient should be apprised of the potential  
339 hazard to the fetus and potential risk for loss of the pregnancy.

## 340 **PRECAUTIONS**

### 341 **Laboratory Tests**

342 No dose-related effect of Femara on any hematologic or clinical chemistry parameter was  
343 evident. Moderate decreases in lymphocyte counts, of uncertain clinical significance, were  
344 observed in some patients receiving Femara (letrozole tablets) 2.5 mg. This depression was  
345 transient in about half of those affected. Two patients on Femara developed  
346 thrombocytopenia; relationship to the study drug was unclear. Patient withdrawal due to  
347 laboratory abnormalities, whether related to study treatment or not, was infrequent.

348 Increases in SGOT, SGPT, and gamma GT  $\geq$ 5 times the upper limit of normal (ULN) and of  
349 bilirubin  $\geq$ 1.5 times the ULN were most often associated with metastatic disease in the liver.  
350 About 3% of study participants receiving Femara had abnormalities in liver chemistries not  
351 associated with documented metastases; these abnormalities may have been related to study  
352 drug therapy. In the megestrol acetate comparative study about 8% of patients treated with  
353 megestrol acetate had abnormalities in liver chemistries that were not associated with  
354 documented liver metastases; in the aminoglutethimide study about 10% of  
355 aminoglutethimide-treated patients had abnormalities in liver chemistries not associated with  
356 hepatic metastases.

357 **Drug Interactions**

358 Clinical interaction studies with cimetidine and warfarin indicated that the coadministration of  
359 Femara with these drugs does not result in clinically-significant drug interactions. (See  
360 CLINICAL PHARMACOLOGY)

361 There is no clinical experience to date on the use of Femara in combination with other anti-  
362 cancer agents.

363 **Drug/Laboratory Test-Interactions**

364 None observed.

365 **Carcinogenesis, Mutagenesis, Impairment of Fertility**

366 A conventional carcinogenesis study in mice at doses of 0.6 to 60 mg/kg/day (about one to  
367 100 times the daily maximum recommended human dose on a mg/m<sup>2</sup> basis) administered by  
368 oral gavage for up to 2 years revealed a dose-related increase in the incidence of benign  
369 ovarian stromal tumors. The incidence of combined hepatocellular adenoma and carcinoma  
370 showed a significant trend in females when the high dose group was excluded due to low  
371 survival. In a separate study, plasma AUC<sub>0-12hr</sub> levels in mice at 60 mg/kg/day were 55 times  
372 higher than the AUC<sub>0-24hr</sub> level in breast cancer patients at the recommended dose. The  
373 carcinogenicity study in rats at oral doses of 0.1 to 10 mg/kg/day (about 0.4 to 40 times the  
374 daily maximum recommended human dose on a mg/m<sup>2</sup> basis) for up to 2 years also produced  
375 an increase in the incidence of benign ovarian stromal tumors at 10 mg/kg/day. Ovarian  
376 hyperplasia was observed in females at doses equal to or greater than 0.1 mg/kg/day. At  
377 10 mg/kg/day, plasma AUC<sub>0-24hr</sub> levels in rats were 80 times higher than the level in breast  
378 cancer patients at the recommended dose.

379 Letrozole was not mutagenic in *in vitro* tests (Ames and E.coli bacterial tests) but was  
380 observed to be a potential clastogen in *in vitro* assays (CHO K1 and CCL 61 Chinese hamster  
381 ovary cells). Letrozole was not clastogenic *in vivo* (micronucleus test in rats).

382 Studies to investigate the effect of letrozole on fertility have not been conducted; however,  
383 repeated dosing caused sexual inactivity in females and atrophy of the reproductive tract in  
384 males and females at doses of 0.6, 0.1 and 0.03 mg/kg in mice, rats and dogs, respectively  
385 (about one, 0.4 and 0.4 the daily maximum recommended human dose on a mg/m<sup>2</sup> basis,  
386 respectively).

387 **Pregnancy:** Pregnancy Category D (See WARNINGS).

388 **Nursing Mothers**

389 It is not known if letrozole is excreted in human milk. Because many drugs are excreted in  
390 human milk, caution should be exercised when letrozole is administered to a nursing woman  
391 (See WARNINGS AND PRECAUTIONS).

392 **Pediatric Use**

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

394 **Geriatric Use**

395 The median age of patients in the trial that compared Femara 2.5 mg daily to tamoxifen 20 mg  
396 daily as first-line therapy was 65 years. About 1/3 of the patients were  $\geq 70$  years old. Femara  
397 time to tumor progression and tumor response rate were better in patients  $\geq 70$  than in patients  
398  $< 70$  years of age.

399 The mean age of patients in the two second-line randomized trials, that compared Femara (0.5  
400 mg and 2.5 mg) to megestrol acetate and to aminoglutethimide, was 64 years. Thirty percent  
401 of patients were  $\geq 70$  years old. The proportion of patients responding to each dose of Femara  
402 was similar for women  $\geq 70$  years old and  $< 70$  years old.

403 **ADVERSE REACTIONS**

404 Femara was generally well tolerated across all studies as first-line and second-line treatment  
405 for breast cancer and adverse reaction rates were similar in both settings.

406 **First-line breast cancer:**

407 A total of 455 patients was treated for a median time of exposure of 11 months. The incidence  
408 of adverse experiences was similar for Femara and tamoxifen. The most frequently reported  
409 adverse experiences were bone pain, hot flushes, back pain, nausea, arthralgia and dyspnea.  
410 Discontinuations for adverse experiences other than progression of tumor occurred in 10/455  
411 (2%) of patients on Femara and in 15/455 (3%) of patients on tamoxifen.

412

413 Adverse events, regardless of relationship to study drug, that were reported in at least 5% of  
414 the patients treated with Femara 2.5 mg or tamoxifen 20 mg in the first-line treatment study  
415 are shown in the following table 8:

416 **Table 8: Percentage (%) of Patients with Adverse Events**

417 <b>Adverse</b>		
418 <b>Experience</b>	419 <b>Femara</b>	420 <b>tamoxifen</b>
	421 <b>2.5 mg</b>	<b>20 mg</b>
	<b>(n=455)</b>	<b>(n=455)</b>
	%	%
<hr/>		
422 <u>Body as a Whole</u>		
423 Fatigue	11	11
424 Chest pain	8	8
425 <u>Weight decreased</u>	6	4
426 Pain-not otherwise specified	5	6
427 Weakness	5	3
<hr/>		
428		
429 <u>Cardiovascular</u>		
430 Hot flushes	18	15
431 Edema-lower limb	5	5
432 Hypertension	5	4
433 <u>Digestive System</u>		
434 Nausea	15	16
435 Constipation	9	9
436 Diarrhea	7	4
437 Vomiting	7	7
438 Appetite decreased	4	6
439 Pain-abdominal	4	5
440 <u>Infections/Infestations</u>		
441 Influenza	5	4
442 <u>Musculoskeletal System</u>		
443 Pain-bone	20	18
444 Pain-back	17	17
445 Arthralgia	14	13
446 Pain-limb	8	7
447 <u>Nervous System</u>		
448 Headache	8	7
449 Insomnia	6	4
450 <u>Reproductive</u>		
451 Breast Pain	5	6
452 <u>Respiratory System</u>		
453 Dyspnea	14	15
454 Coughing	11	10
455 <u>Skin and Appendages</u>		
456 Alopecia/hair thinning	5	4
457 <u>Surgical/Medical Procedures</u>		
458 Post-mastectomy lymphoedema	7	6

459 Other less frequent ( $\leq 2\%$ ) adverse experiences considered consequential for both treatment  
460 groups , included peripheral thromboembolic events, cardiovascular events, and  
461 cerebrovascular events. Peripheral thromboembolic events included venous thrombosis,  
462 thrombophlebitis, portal vein thrombosis and pulmonary embolism. Cardiovascular events  
463 included angina, myocardial infarction, myocardial ischemia, and coronary heart disease.  
464 Cerebrovascular events included transient ischemic attacks, thrombotic or hemorrhagic  
465 strokes and development of hemiparesis.

466

467

468 **Second-line breast cancer:**

469 Femara (letrozole tablets) was generally well tolerated in two controlled clinical trials.

470 Study discontinuations in the megestrol acetate comparison study for adverse events other  
471 than progression of tumor occurred in 5/188 (2.7%) of patients on Femara 0.5 mg, in 4/174  
472 (2.3%) of the patients on Femara 2.5 mg, and in 15/190 (7.9%) of patients on megestrol  
473 acetate. There were fewer thromboembolic events at both Femara doses than on the  
474 megestrol acetate arm (2 of 362 patients or 0.6% vs. 9 of 190 patients or 4.7%). There was  
475 also less vaginal bleeding (1 of 362 patients or 0.3% vs. 6 of 190 patients or 3.2%) on  
476 letrozole than on megestrol acetate. In the aminoglutethimide comparison study,  
477 discontinuations for reasons other than progression occurred in 6/193 (3.1%) of patients on  
478 0.5 mg Femara, 7/185 (3.8%) of patients on 2.5 mg Femara, and 7/178 (3.9%) of patients on  
479 aminoglutethimide.

480 Comparisons of the incidence of adverse events revealed no significant differences between  
481 the high and low dose Femara groups in either study. Most of the adverse events observed in  
482 all treatment groups were mild to moderate in severity and it was generally not possible to  
483 distinguish adverse reactions due to treatment from the consequences of the patient's  
484 metastatic breast cancer, the effects of estrogen deprivation, or intercurrent illness.

485 Adverse events, regardless of relationship to study drug, that were reported in at least 5% of  
486 the patients treated with Femara 0.5 mg, Femara 2.5 mg, megestrol acetate, or  
487 aminoglutethimide in the two controlled trials are shown in the following table 9:

488

Adverse Experience	Pooled Femara 2.5 mg (n=359) %	Pooled Femara 0.5 mg (n=380) %	Megestrol Acetate 160 mg (n=189) %	Aminoglutethimide 500 mg (n=178) %
<b>Table 9: Percentage (%) of Patients with Adverse Events</b>				
<u>Body as a Whole</u>				
Fatigue	8	6	11	3
Chest pain	6	3	7	3
Peripheral edema <sup>1</sup>	5	5	8	3
Asthenia	4	5	4	5
Weight increase	2	2	9	3
<u>Cardiovascular</u>				
Hypertension	5	7	5	6
<u>Digestive System</u>				
Nausea	13	15	9	14
Vomiting	7	7	5	9
Constipation	6	7	9	7
Diarrhea	6	5	3	4
Pain-abdominal	6	5	9	8
Anorexia	5	3	5	5
Dyspepsia	3	4	6	5
<u>Infections/Infestations</u>				
Viral infection	6	5	6	3
<u>Lab Abnormality</u>				
Hypercholesterolemia	3	3	0	6
<u>Musculoskeletal System</u>				
Musculoskeletal <sup>2</sup>	21	22	30	14
Arthralgia	8	8	8	3
<u>Nervous System</u>				
Headache	9	12	9	7
Somnolence	3	2	2	9
Dizziness	3	5	7	3
<u>Respiratory System</u>				
Dyspnea	7	9	16	5
Coughing	6	5	7	5
<u>Skin and Appendages</u>				
Hot flushes	6	5	4	3
Rash <sup>3</sup>	5	4	3	12
Pruritus	1	2	5	3

<sup>1</sup> Includes peripheral edema, leg edema, dependent edema, edema

<sup>2</sup> Includes musculoskeletal pain, skeletal pain, back pain, arm pain, leg pain

<sup>3</sup> Includes rash, erythematous rash, maculopapular rash, psoriaform rash, vesicular rash



534 Other less frequent (<5%) adverse experiences considered consequential and reported in at  
535 least 3 patients treated with Femara, included hypercalcemia, fracture, depression, anxiety,  
536 pleural effusion, alopecia, increased sweating and vertigo.

## 537 **OVERDOSAGE**

538 Isolated cases of Femara (letrozole tablets) overdose have been reported. In these instances,  
539 the highest single dose ingested was 62.5 mg or 25 tablets. While no serious adverse events  
540 were reported in these cases, because of the limited data available, no firm recommendations  
541 for treatment can be made. However, emesis could be induced if the patient is alert. In  
542 general, supportive care and frequent monitoring of vital signs are also appropriate. In single  
543 dose studies the highest dose used was 30 mg, which was well tolerated; in multiple dose  
544 trials, the largest dose of 10 mg was well tolerated.

545 Lethality was observed in mice and rats following single oral doses that were equal to or  
546 greater than 2000 mg/kg (about 4000 to 8000 times the daily maximum recommended human  
547 dose on a mg/m<sup>2</sup> basis); death was associated with reduced motor activity, ataxia and dyspnea.  
548 Lethality was observed in cats following single IV doses that were equal to or greater than  
549 10 mg/kg (about 50 times the daily maximum recommended human dose on a mg/m<sup>2</sup> basis);  
550 death was preceded by depressed blood pressure and arrhythmias.

## 551 **DOSAGE & ADMINISTRATION**

### 552 **Adult and Elderly Patients**

553 The recommended dose of Femara (letrozole tablets) is one 2.5 mg tablet administered once a  
554 day, without regard to meals. Treatment with Femara should continue until tumor progression  
555 is evident. No dose adjustment is required for elderly patients. Patients treated with Femara  
556 do not require glucocorticoid or mineralocorticoid replacement therapy.

### 557 **Renal Impairment**

558 (See CLINICAL PHARMACOLOGY.) No dosage adjustment is required for patients with  
559 renal impairment if creatinine clearance is  $\geq 10$  mL/min.

### 560 **Hepatic Impairment**

561 (See CLINICAL PHARMACOLOGY.) Although letrozole blood concentrations were  
562 modestly increased in subjects with moderate hepatic impairment due to cirrhosis, no dosage  
563 adjustment is recommended for patients with mild-to-moderate hepatic impairment. Patients  
564 with severe impairment of liver function have not been studied. Because letrozole is  
565 eliminated almost exclusively by hepatic metabolism, patients with severe impairment of liver  
566 function should be dosed with caution.

567 **HOW SUPPLIED**

568 2.5 mg tablets - dark yellow, film-coated, round, slightly biconvex, with beveled edges  
569 (imprinted with the letters FV on one side and CG on the other side).

570 Packaged in HDPE bottles with a safety screw cap.


571 Bottles of 30 tablets. . . . .NDC 0078-0249-15

572 Store at 25°C (77°F); excursions permitted to 15°C-30°C(59°F-86°F) [see USP Controlled  
573 Room Temperature].

574 REV: xxxx 2000 Printed in U.S.A. T2000-xx

575

576

577  **NOVARTIS**  
578 Novartis Pharmaceuticals Corporation  
579 East Hanover, New Jersey 07936

