



KYTRIL®

(granisetron hydrochloride)

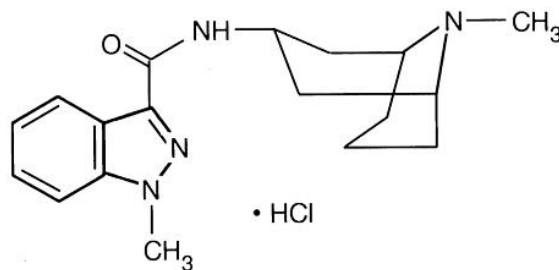
TABLETS

ORAL SOLUTION

R_x only

DESCRIPTION

KYTRIL Tablets and KYTRIL Oral Solution contain granisetron hydrochloride, an antiemetic and anti-nauseant agent. Chemically it is *endo*-N-(9-methyl-9-azabicyclo [3.3.1] non-3-yl)-1-methyl-1H-indazole-3-carboxamide hydrochloride with a molecular weight of 348.9 (312.4 free base). Its empirical formula is C₁₈H₂₄N₄O•HCl, while its chemical structure is:



granisetron hydrochloride

Granisetron hydrochloride is a white to off-white solid that is readily soluble in water and normal saline at 20°C.

Tablets for Oral Administration

Each white, triangular, biconvex, film-coated KYTRIL Tablet contains 1.12 mg granisetron hydrochloride equivalent to granisetron, 1 mg. Inactive ingredients are: hydroxypropyl methylcellulose, lactose, magnesium stearate, microcrystalline cellulose, polyethylene glycol, polysorbate 80, sodium starch glycolate, and titanium dioxide.

Oral Solution

Each 10 mL of clear, orange-colored, orange-flavored KYTRIL Oral Solution contains 2.24 mg of granisetron hydrochloride equivalent to 2 mg granisetron. Inactive ingredients: citric acid anhydrous, FD&C Yellow No. 6, orange flavor, purified water, sodium benzoate, and sorbitol.

27 **CLINICAL PHARMACOLOGY**

28 Granisetron is a selective 5-hydroxytryptamine₃ (5-HT₃) receptor antagonist with little or
29 no affinity for other serotonin receptors, including 5-HT₁; 5-HT_{1A}; 5-HT_{1B/C}; 5-HT₂; for
30 alpha₁-, alpha₂-, or beta-adrenoreceptors; for dopamine-D₂; or for histamine-H₁;
31 benzodiazepine; picrotoxin or opioid receptors.

32 Serotonin receptors of the 5-HT₃ type are located peripherally on vagal nerve terminals
33 and centrally in the chemoreceptor trigger zone of the area postrema. During
34 chemotherapy that induces vomiting, mucosal enterochromaffin cells release serotonin,
35 which stimulates 5-HT₃ receptors. This evokes vagal afferent discharge, inducing
36 vomiting. Animal studies demonstrate that, in binding to 5-HT₃ receptors, granisetron
37 blocks serotonin stimulation and subsequent vomiting after emetogenic stimuli such as
38 cisplatin. In the ferret animal model, a single granisetron injection prevented vomiting
39 due to high-dose cisplatin or arrested vomiting within 5 to 30 seconds.

40 In most human studies, granisetron has had little effect on blood pressure, heart rate or
41 ECG. No evidence of an effect on plasma prolactin or aldosterone concentrations has
42 been found in other studies.

43 Following single and multiple oral doses, KYTRIL Tablets slowed colonic transit in
44 normal volunteers. However, KYTRIL had no effect on oro-cecal transit time in normal
45 volunteers when given as a single intravenous (IV) infusion of 50 mcg/kg or 200 mcg/kg.

46 **Pharmacokinetics**

47 In healthy volunteers and adult cancer patients undergoing chemotherapy, administration
48 of KYTRIL Tablets produced mean pharmacokinetic data shown in **Table 1**.

49 **Table 1** **Pharmacokinetic Parameters (Median [range]) Following**
50 **KYTRIL Tablets (granisetron hydrochloride)**

	Peak Plasma Concentration (ng/mL)	Terminal Phase Plasma Half-Life (h)	Volume of Distribution (L/kg)	Total Clearance (L/h/kg)
Cancer Patients 1 mg bid, 7 days (n=27)	5.99 [0.63 to 30.9]	N.D. ¹	N.D.	0.52 [0.09 to 7.37]
Volunteers single 1 mg dose (n=39)	3.63 [0.27 to 9.14]	6.23 [0.96 to 19.9]	3.94 [1.89 to 39.4]	0.41 [0.11 to 24.6]

¹ Not determined after oral administration; following a single intravenous dose of 40 mcg/kg, terminal phase half-life was determined to be 8.95 hours.
N.D. Not determined.

52 A 2 mg dose of KYTRIL Oral Solution is bioequivalent to the corresponding dose of
53 KYTRIL Tablets (1 mg x 2) and may be used interchangeably.

54 Absorption

55 When KYTRIL Tablets were administered with food, AUC was decreased by 5% and
56 C_{max} increased by 30% in non-fasted healthy volunteers who received a single dose of 10
57 mg.

58 Distribution

59 Plasma protein binding is approximately 65% and granisetron distributes freely between
60 plasma and red blood cells.

61 Metabolism

62 Granisetron metabolism involves N-demethylation and aromatic ring oxidation followed
63 by conjugation. In vitro liver microsomal studies show that granisetron's major route of
64 metabolism is inhibited by ketoconazole, suggestive of metabolism mediated by the
65 cytochrome P-450 3A subfamily. Animal studies suggest that some of the metabolites
66 may also have 5-HT₃ receptor antagonist activity.

67 Elimination

68 Clearance is predominantly by hepatic metabolism. In normal volunteers, approximately
69 11% of the orally administered dose is eliminated unchanged in the urine in 48 hours.
70 The remainder of the dose is excreted as metabolites, 48% in the urine and 38% in the
71 feces.

72 Subpopulations

73 *Gender*

74 The effects of gender on the pharmacokinetics of KYTRIL Tablets have not been studied.
75 However, after intravenous infusion of KYTRIL, no difference in mean AUC was found
76 between males and females, although males had a higher C_{max} generally.

77 In elderly and pediatric patients and in patients with renal failure or hepatic impairment,
78 the pharmacokinetics of granisetron was determined following administration of
79 intravenous KYTRIL:

80 *Elderly*

81 The ranges of the pharmacokinetic parameters in elderly volunteers (mean age 71 years),
82 given a single 40 mcg/kg intravenous dose of KYTRIL Injection, were generally similar
83 to those in younger healthy volunteers; mean values were lower for clearance and longer
84 for half-life in the elderly.

85 *Renal Failure Patients*

86 Total clearance of granisetron was not affected in patients with severe renal failure who
87 received a single 40 mcg/kg intravenous dose of KYTRIL Injection.

88 *Hepatically Impaired Patients*

89 A pharmacokinetic study with intravenous KYTRIL in patients with hepatic impairment
90 due to neoplastic liver involvement showed that total clearance was approximately halved
91 compared to patients without hepatic impairment. Given the wide variability in
92 pharmacokinetic parameters noted in patients and the good tolerance of doses well above
93 the recommended dose, dosage adjustment in patients with possible hepatic functional
94 impairment is not necessary.

95 *Pediatric Patients*

96 A pharmacokinetic study in pediatric cancer patients (2 to 16 years of age), given a single
97 40 mcg/kg intravenous dose of KYTRIL Injection, showed that volume of distribution
98 and total clearance increased with age. No relationship with age was observed for peak
99 plasma concentration or terminal phase plasma half-life. When volume of distribution
100 and total clearance are adjusted for body weight, the pharmacokinetics of granisetron are
101 similar in pediatric and adult cancer patients.

102 **CLINICAL TRIALS**

103 **Chemotherapy-Induced Nausea and Vomiting**

104 KYTRIL Tablets prevent nausea and vomiting associated with initial and repeat courses
105 of emetogenic cancer therapy, as shown by 24-hour efficacy data from studies using both
106 moderately- and highly-emetogenic chemotherapy.

107 **Moderately Emetogenic Chemotherapy**

108 The first trial compared KYTRIL Tablets doses of 0.25 mg to 2 mg bid, in 930 cancer
109 patients receiving, principally, cyclophosphamide, carboplatin, and cisplatin (20 mg/m²
110 to 50 mg/m²). Efficacy was based on complete response (ie, no vomiting, no moderate or
111 severe nausea, no rescue medication), no vomiting, and no nausea. **Table 2** summarizes
112 the results of this study.

113
114

Table 2 Prevention of Nausea and Vomiting 24 Hours Post-Chemotherapy¹

Efficacy Measures	Percentages of Patients			
	KYTRIL Tablet Dose			
	0.25 mg bid (n=229) %	0.5 mg bid (n=235) %	1 mg bid (n=233) %	2 mg bid (n=233) %
Complete Response ²	61	70*	81*†	72*
No Vomiting	66	77*	88*	79*
No Nausea	48	57	63*	54

¹ Chemotherapy included oral and injectable cyclophosphamide, carboplatin, cisplatin (20 mg/m² to 50 mg/m²), dacarbazine, doxorubicin, epirubicin.

² No vomiting, no moderate or severe nausea, no rescue medication.

*Statistically significant (P<0.01) vs. 0.25 mg bid.

†Statistically significant (P<0.01) vs. 0.5 mg bid.

115

116 Results from a second double-blind, randomized trial evaluating KYTRIL Tablets 2 mg
117 qd and KYTRIL Tablets 1 mg bid were compared to prochlorperazine 10 mg bid derived
118 from a historical control. At 24 hours, there was no statistically significant difference in
119 efficacy between the two KYTRIL Tablet regimens. Both regimens were statistically
120 superior to the prochlorperazine control regimen (see Table 3).

121 **Table 3 Prevention of Nausea and Vomiting 24 Hours Post-Chemotherapy¹**
122

Efficacy Measures	Percentages of Patients		
	KYTRIL Tablets 1 mg bid (n = 354) %	KYTRIL Tablets 2 mg qd (n = 343) %	Prochlorperazine ² 10 mg bid (n=111) %
Complete Response ³	69*	64*	41
No Vomiting	82*	77*	48
No Nausea	51*	53*	35
Total Control ⁴	51*	50*	33

¹ Moderately emetogenic chemotherapeutic agents included cisplatin (20 mg/m² to 50 mg/m²), oral and intravenous cyclophosphamide, carboplatin, dacarbazine, doxorubicin.

² Historical control from a previous double-blind KYTRIL trial.

³ No vomiting, no moderate or severe nausea, no rescue medication.

⁴ No vomiting, no nausea, no rescue medication.

*Statistically significant (P<0.05) vs. prochlorperazine historical control.

123

124 Results from a KYTRIL Tablets 2 mg qd alone treatment arm in a third double-blind,
125 randomized trial, were compared to prochlorperazine (PCPZ), 10 mg bid, derived from a
126 historical control. The 24-hour results for KYTRIL Tablets 2 mg qd were statistically
127 superior to PCPZ for all efficacy parameters: complete response (58%), no vomiting
128 (79%), no nausea (51%), total control (49%). The PCPZ rates are shown in **Table 3**.

129 Cisplatin-Based Chemotherapy

130 The first double-blind trial compared KYTRIL Tablets 1 mg bid, relative to placebo
131 (historical control), in 119 cancer patients receiving high-dose cisplatin (mean dose 80
132 mg/m²). At 24 hours, KYTRIL Tablets 1 mg bid was significantly (P<0.001) superior to
133 placebo (historical control) in all efficacy parameters: complete response (52%), no
134 vomiting (56%) and no nausea (45%). The placebo rates were 7%, 14%, and 7%,
135 respectively, for the three efficacy parameters.

136 Results from a KYTRIL Tablets 2 mg qd alone treatment arm in a second double-blind,
137 randomized trial, were compared to both KYTRIL Tablets 1 mg bid and placebo
138 historical controls. The 24-hour results for KYTRIL Tablets 2 mg qd were: complete
139 response (44%), no vomiting (58%), no nausea (46%), total control (40%). The efficacy
140 of KYTRIL Tablets 2 mg qd was comparable to KYTRIL Tablets 1 mg bid and
141 statistically superior to placebo. The placebo rates were 7%, 14%, 7%, and 7%,
142 respectively, for the four parameters.

143 No controlled study comparing granisetron injection with the oral formulation to prevent
144 chemotherapy-induced nausea and vomiting has been performed.

145 Radiation-Induced Nausea and Vomiting

146 Total Body Irradiation

147 In a double-blind randomized study, 18 patients receiving KYTRIL Tablets, 2 mg daily,
148 experienced significantly greater antiemetic protection compared to patients in a
149 historical negative control group who received conventional (non-5-HT₃ antagonist)
150 antiemetics. Total body irradiation consisted of 11 fractions of 120 cGy administered
151 over 4 days, with three fractions on each of the first 3 days, and two fractions on the
152 fourth day. KYTRIL Tablets were given one hour before the first radiation fraction of
153 each day.

154 Twenty-two percent (22%) of patients treated with KYTRIL Tablets did not experience
155 vomiting or receive rescue antiemetics over the entire 4-day dosing period, compared to
156 0% of patients in the historical negative control group (P<0.01).

157 In addition, patients who received KYTRIL Tablets also experienced significantly fewer
158 emetic episodes during the first day of radiation and over the 4-day treatment period,
159 compared to patients in the historical negative control group. The median time to the first
160 emetic episode was 36 hours for patients who received KYTRIL Tablets.

161 Fractionated Abdominal Radiation

162 The efficacy of KYTRIL Tablets, 2 mg daily, was evaluated in a double-blind, placebo-
163 controlled randomized trial of 260 patients. KYTRIL Tablets were given 1 hour before
164 radiation, composed of up to 20 daily fractions of 180 to 300 cGy each. The exceptions
165 were patients with seminoma or those receiving whole abdomen irradiation who initially
166 received 150 cGy per fraction. Radiation was administered to the upper abdomen with a
167 field size of at least 100 cm².

168 The proportion of patients without emesis and those without nausea for KYTRIL Tablets,
169 compared to placebo, was statistically significant (P<0.0001) at 24 hours after radiation,
170 irrespective of the radiation dose. KYTRIL was superior to placebo in patients receiving
171 up to 10 daily fractions of radiation, but was not superior to placebo in patients receiving
172 20 fractions.

173 Patients treated with KYTRIL Tablets (n=134) had a significantly longer time to the first
174 episode of vomiting (35 days vs. 9 days, P<0.001) relative to those patients who received
175 placebo (n=126), and a significantly longer time to the first episode of nausea (11 days
176 vs. 1 day, P<0.001). KYTRIL provided significantly greater protection from nausea and
177 vomiting than placebo.

178 INDICATIONS AND USAGE

179 KYTRIL (granisetron hydrochloride) is indicated for the prevention of:

- 180 • Nausea and vomiting associated with initial and repeat courses of emetogenic cancer
181 therapy, including high-dose cisplatin.
- 182 • Nausea and vomiting associated with radiation, including total body irradiation and
183 fractionated abdominal radiation.

184 CONTRAINDICATIONS

185 KYTRIL is contraindicated in patients with known hypersensitivity to the drug or any of
186 its components.

187 PRECAUTIONS

188 KYTRIL is not a drug that stimulates gastric or intestinal peristalsis. It should not be used
189 instead of nasogastric suction. The use of KYTRIL in patients following abdominal
190 surgery or in patients with chemotherapy-induced nausea and vomiting may mask a
191 progressive ileus and/or gastric distention.

192 Drug Interactions

193 Granisetron does not induce or inhibit the cytochrome P-450 drug-metabolizing enzyme
194 system in vitro. There have been no definitive drug-drug interaction studies to examine
195 pharmacokinetic or pharmacodynamic interaction with other drugs; however, in humans,

196 KYTRIL Injection has been safely administered with drugs representing
197 benzodiazepines, neuroleptics, and anti-ulcer medications commonly prescribed with
198 antiemetic treatments. KYTRIL Injection also does not appear to interact with
199 emetogenic cancer chemotherapies. Because granisetron is metabolized by hepatic
200 cytochrome P-450 drug-metabolizing enzymes, inducers or inhibitors of these enzymes
201 may change the clearance and, hence, the half-life of granisetron. No specific interaction
202 studies have been conducted in anesthetized patients. In addition, the activity of the
203 cytochrome P-450 subfamily 3A4 (involved in the metabolism of some of the main
204 narcotic analgesic agents) is not modified by KYTRIL in vitro.

205 In in vitro human microsomal studies, ketoconazole inhibited ring oxidation of KYTRIL.
206 However, the clinical significance of in vivo pharmacokinetic interactions with
207 ketoconazole is not known. In a human pharmacokinetic study, hepatic enzyme induction
208 with phenobarbital resulted in a 25% increase in total plasma clearance of intravenous
209 KYTRIL. The clinical significance of this change is not known.

210 **Carcinogenesis, Mutagenesis, Impairment of Fertility**

211 In a 24-month carcinogenicity study, rats were treated orally with granisetron 1, 5 or 50
212 mg/kg/day (6, 30 or 300 mg/m²/day). The 50 mg/kg/day dose was reduced to 25
213 mg/kg/day (150 mg/m²/day) during week 59 due to toxicity. For a 50 kg person of
214 average height (1.46 m² body surface area), these doses represent 4, 20, and 101 times the
215 recommended clinical dose (1.48 mg/m², oral) on a body surface area basis. There was a
216 statistically significant increase in the incidence of hepatocellular carcinomas and
217 adenomas in males treated with 5 mg/kg/day (30 mg/m²/day, 20 times the recommended
218 human dose based on body surface area) and above, and in females treated with 25
219 mg/kg/day (150 mg/m²/day, 101 times the recommended human dose based on body
220 surface area). No increase in liver tumors was observed at a dose of 1 mg/kg/day (6
221 mg/m²/day, 4 times the recommended human dose based on body surface area) in males
222 and 5 mg/kg/day (30 mg/m²/day, 20 times the recommended human dose based on body
223 surface area) in females. In a 12-month oral toxicity study, treatment with granisetron
224 100 mg/kg/day (600 mg/m²/day, 405 times the recommended human dose based on body
225 surface area) produced hepatocellular adenomas in male and female rats while no such
226 tumors were found in the control rats. A 24-month mouse carcinogenicity study of
227 granisetron did not show a statistically significant increase in tumor incidence, but the
228 study was not conclusive.

229 Because of the tumor findings in rat studies, KYTRIL (granisetron hydrochloride) should
230 be prescribed only at the dose and for the indication recommended (see **INDICATIONS**
231 **AND USAGE**, and **DOSAGE AND ADMINISTRATION**).

232 Granisetron was not mutagenic in in vitro Ames test and mouse lymphoma cell forward
233 mutation assay, and in vivo mouse micronucleus test and in vitro and ex vivo rat
234 hepatocyte UDS assays. It, however, produced a significant increase in UDS in HeLa
235 cells in vitro and a significant increased incidence of cells with polyploidy in an in vitro
236 human lymphocyte chromosomal aberration test.

237 Granisetron at oral doses up to 100 mg/kg/day (600 mg/m²/day, 405 times the
238 recommended human dose based on body surface area) was found to have no effect on
239 fertility and reproductive performance of male and female rats.

240 **Pregnancy**

241 **Teratogenic Effects**

242 *Pregnancy Category B.*

243 Reproduction studies have been performed in pregnant rats at oral doses up to 125
244 mg/kg/day (750 mg/m²/day, 507 times the recommended human dose based on body
245 surface area) and pregnant rabbits at oral doses up to 32 mg/kg/day (378 mg/m²/day, 255
246 times the recommended human dose based on body surface area) and have revealed no
247 evidence of impaired fertility or harm to the fetus due to granisetron. There are, however,
248 no adequate and well-controlled studies in pregnant women. Because animal
249 reproduction studies are not always predictive of human response, this drug should be
250 used during pregnancy only if clearly needed.

251 **Nursing Mothers**

252 It is not known whether granisetron is excreted in human milk. Because many drugs are
253 excreted in human milk, caution should be exercised when KYTRIL is administered to a
254 nursing woman.

255 **Pediatric Use**

256 Safety and effectiveness in pediatric patients have not been established.

257 **Geriatric Use**

258 During clinical trials, 325 patients 65 years of age or older received KYTRIL Tablets;
259 298 were 65 to 74 years of age, and 27 were 75 years of age or older. Efficacy and safety
260 were maintained with increasing age.

261 **ADVERSE REACTIONS**

262 **Chemotherapy-Induced Nausea and Vomiting**

263 Over 3700 patients have received KYTRIL Tablets in clinical trials with emetogenic
264 cancer therapies consisting primarily of cyclophosphamide or cisplatin regimens.

265 In patients receiving KYTRIL Tablets 1 mg bid for 1, 7 or 14 days, or 2 mg qd for 1 day,
266 adverse experiences reported in more than 5% of the patients with comparator and
267 placebo incidences are listed in **Table 4**.

Table 4 Principal Adverse Events in Clinical Trials

	Percent of Patients With Event			
	KYTRIL¹ Tablets 1 mg bid (n=978)	KYTRIL¹ Tablets 2 mg qd (n=1450)	Comparator² (n=599)	Placebo (n=185)
Headache ³	21%	20%	13%	12%
Constipation	18%	14%	16%	8%
Asthenia	14%	18%	10%	4%
Diarrhea	8%	9%	10%	4%
Abdominal pain	6%	4%	6%	3%
Dyspepsia	4%	6%	5%	4%

¹ Adverse events were recorded for 7 days when KYTRIL Tablets were given on a single day and for up to 28 days when KYTRIL Tablets were administered for 7 or 14 days.

² Metoclopramide/dexamethasone; phenothiazines/dexamethasone; dexamethasone alone; prochlorperazine.

³ Usually mild to moderate in severity.

269

270 Other adverse events reported in clinical trials were:

271 *Gastrointestinal:* In single-day dosing studies in which adverse events were collected for
272 7 days, nausea (20%) and vomiting (12%) were recorded as adverse events after the 24-
273 hour efficacy assessment period.

274 *Hepatic:* In comparative trials, elevation of AST and ALT (>2 times the upper limit of
275 normal) following the administration of KYTRIL Tablets occurred in 5% and 6% of
276 patients, respectively. These frequencies were not significantly different from those seen
277 with comparators (AST: 2%; ALT: 9%).

278 *Cardiovascular:* Hypertension (1%); hypotension, angina pectoris, atrial fibrillation, and
279 syncope have been observed rarely.

280 *Central Nervous System:* Dizziness (5%), insomnia (5%), anxiety (2%), somnolence
281 (1%). One case compatible with, but not diagnostic of, extrapyramidal symptoms has
282 been reported in a patient treated with KYTRIL Tablets.

283 *Hypersensitivity:* Rare cases of hypersensitivity reactions, sometimes severe (eg,
284 anaphylaxis, shortness of breath, hypotension, urticaria) have been reported.

285 *Other:* Fever (5%). Events often associated with chemotherapy also have been reported:
286 leukopenia (9%), decreased appetite (6%), anemia (4%), alopecia (3%),
287 thrombocytopenia (2%).

288 Over 5000 patients have received injectable KYTRIL in clinical trials.

289 **Table 5** gives the comparative frequencies of the five commonly reported adverse events
290 ($\geq 3\%$) in patients receiving KYTRIL Injection, 40 mcg/kg, in single-day chemotherapy
291 trials. These patients received chemotherapy, primarily cisplatin, and intravenous fluids
292 during the 24-hour period following KYTRIL Injection administration.

293 **Table 5 Principal Adverse Events in Clinical Trials — Single-Day**
294 **Chemotherapy**

	Percent of Patients with Event	
	KYTRIL Injection ¹ 40 mcg/kg (n=1268)	Comparator ² (n=422)
Headache	14%	6%
Asthenia	5%	6%
Somnolence	4%	15%
Diarrhea	4%	6%
Constipation	3%	3%

¹ Adverse events were generally recorded over 7 days post-KYTRIL Injection administration.

² Metoclopramide/dexamethasone and phenothiazines/dexamethasone.

295

296 In the absence of a placebo group, there is uncertainty as to how many of these events
297 should be attributed to KYTRIL, except for headache, which was clearly more frequent
298 than in comparison groups.

299 **Radiation-Induced Nausea and Vomiting**

300 In controlled clinical trials, the adverse events reported by patients receiving KYTRIL
301 Tablets and concurrent radiation were similar to those reported by patients receiving
302 KYTRIL Tablets prior to chemotherapy. The most frequently reported adverse events
303 were diarrhea, asthenia, and constipation. Headache, however, was less prevalent in this
304 patient population.

305 **OVERDOSAGE**

306 There is no specific treatment for granisetron hydrochloride overdose. In case of
307 overdose, symptomatic treatment should be given. Overdosage of up to 38.5 mg of

308 granisetron hydrochloride injection has been reported without symptoms or only the
309 occurrence of a slight headache.

310 **DOSAGE AND ADMINISTRATION**

311 **Emetogenic Chemotherapy**

312 The recommended adult dosage of oral KYTRIL (granisetron hydrochloride) is 2 mg
313 once daily or 1 mg twice daily. In the 2 mg once-daily regimen, two 1 mg tablets or 10
314 mL of KYTRIL Oral Solution (2 teaspoonfuls, equivalent to 2 mg of granisetron) are
315 given up to 1 hour before chemotherapy. In the 1 mg twice-daily regimen, the first 1 mg
316 tablet or one teaspoonful (5 mL) of KYTRIL Oral Solution is given up to 1 hour before
317 chemotherapy, and the second tablet or second teaspoonful (5 mL) of KYTRIL Oral
318 Solution, 12 hours after the first. Either regimen is administered only on the day(s)
319 chemotherapy is given. Continued treatment, while not on chemotherapy, has not been
320 found to be useful.

321 **Use in the Elderly, Pediatric Patients, Renal Failure Patients or Hepatically**
322 **Impaired Patients**

323 No dosage adjustment is recommended (see **CLINICAL PHARMACOLOGY:**
324 **Pharmacokinetics**).

325 **Radiation (Either Total Body Irradiation or Fractionated Abdominal** 326 **Radiation)**

327 The recommended adult dosage of oral KYTRIL is 2 mg once daily. Two 1 mg tablets or
328 10 mL of KYTRIL Oral Solution (2 teaspoonfuls, equivalent to 2 mg of granisetron) are
329 taken within 1 hour of radiation.

330 **Pediatric Use**

331 There is no experience with oral KYTRIL in the prevention of radiation-induced nausea
332 and vomiting in pediatric patients.

333 **Use in the Elderly**

334 No dosage adjustment is recommended.

335 **HOW SUPPLIED**

336 **Tablets**

337 White, triangular, biconvex, film-coated tablets; tablets are debossed K1 on one face.

338 1 mg Unit of Use 2's: NDC 0004-0241-33

339 1 mg Single Unit Package 20's: NDC 0004-0241-26 (intended for institutional use only)

340 **Storage**

341 Store between 15° and 30°C (59° and 86°F). Keep container closed tightly. Protect from
342 light.

343 **Oral Solution**

344 Clear, orange-colored, orange-flavored, 2 mg/10 mL, in 30 mL amber glass bottles with
345 child-resistant closures: NDC 0004-0237-09

346 **Storage**

347 Store at 25°C (77°F); excursions permitted to 15° to 30°C (59° to 86°F) [see USP
348 Controlled Room Temperature]. Keep bottle closed tightly and stored in an upright
349 position. Protect from light.

350

351 Distributed by:



Pharmaceuticals

Roche Laboratories Inc.
340 Kingsland Street
Nutley, New Jersey 07110-1199

352

353

354 **XXXXXXXXXX**

355 Revised: Month Year

356

357 Copyright © 1999-XXXX by Roche Laboratories Inc. All rights reserved.

358