

PRODUCT NAME	: Escitalopram Tablets, USP	COUNTRY	: US, Quallent	LOCATION	: Dahej	Supersedes AW No.:	
ITEM / PACK	: Outsert	NO. OF COLORS:	1	REMARK		V. No. :	01
DESIGN STYLE	: Front Side	PANTONE SHADE NOS.:		SUBSTRATE	: 28 g/m <sup>2</sup> Bible Paper		
CODE	: 8097508		Black	Activities	Department	Name	Signature
DIMENSIONS (MM)	: 640 x 510			Reviewed By	Pkg. Dev.		
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**Note: Pharma code/ Bar code and adjacent text must be visible on folded leaflet. These details can be moved by printed to arrange pharma code/ Bar code and adjacent text visible on folded leaflet.**



**HIGHLIGHTS OF PRESCRIBING INFORMATION**  
These highlights do not include all the information needed to use ESCITALOPRAM TABLETS safely and effectively. See full prescribing information for ESCITALOPRAM TABLETS.

**ESCITALOPRAM Tablets, for oral use**  
Initial U.S. Approval: 2002

**WARNING: SUICIDAL THOUGHTS AND BEHAVIORS**  
See full prescribing information for complete boxed warning.

**Increased risk of suicidal thoughts and behavior in pediatric and young adult patients taking antidepressants. Closely monitor all antidepressant-treated patients for clinical worsening and emergence of suicidal thoughts and behaviors (5.1). Escitalopram tablets are not approved for use in pediatric patients less than 7 years of age (8.4).**

**RECENT MAJOR CHANGES**

Indications (1) 5/2023  
Dosage and Administration (2, 2.2, 2.3, 2.5) 5/2023  
Dosage and Administration. Use of Escitalopram with Other MAOIs such as Linezolid or Methylene Blue (2.7) - Removed 5/2023  
Warnings and Precautions (5.2, 5.7) 8/2023

**INDICATIONS AND USAGE**

Escitalopram is a selective serotonin reuptake inhibitor (SSRI) indicated for the:

- treatment of major depressive disorder (MDD) in adults and pediatric patients 12 years of age and older (1)
- treatment of generalized anxiety disorder (GAD) in adults (2)

**DOSAGE AND ADMINISTRATION**

Indication and Population Recommended Dosage

MDD in Adults (2.1) Initial: 10 mg once daily  
Recommended: 10 mg once daily  
Maximum: 20 mg once daily

MDD in Pediatric Patients 12 and older (2.1) Initial: 10 mg once daily  
Recommended: 10 mg once daily  
Maximum: 20 mg once daily

GAD in Adults (2.2) Initial: 10 mg once daily  
Recommended: 10 mg once daily  
Maximum: 20 mg once daily

No additional benefits were seen at 20 mg once daily (2.1)

Administer once daily, morning or evening, with or without food (2.3)

Elderly patients: recommended dosage is 10 mg once daily (2.4)

Hepatic impairment: recommended dosage is 10 mg once daily (2.4, 8.6)

When discontinuing Escitalopram tablets, reduce dose gradually whenever possible (2.5)

**DOSAGE FORMS AND STRENGTHS**

Tablets: 5 mg, 10 mg (scored)

**CONTRAINDICATIONS**

Do not use MAOIs intended to treat psychiatric disorders with escitalopram or within 14 days of stopping treatment with escitalopram. Do not use escitalopram within 14 days of stopping an MAOI intended to treat psychiatric disorders. In addition, do not start escitalopram in a patient who is being treated with or has recently received intravenous methylene blue (4)

Concomitant use of pimozide (4)

Known hypersensitivity to escitalopram or citalopram or any of the inactive ingredients (4)

**FULL PRESCRIBING INFORMATION, CONTENTS & WARNINGS: SUICIDAL THOUGHTS AND BEHAVIORS**

**INDICATIONS AND USAGE**

**2. DOSAGE AND ADMINISTRATION**

1. Major Depressive Disorder

2. Generalized Anxiety Disorder

3. Administration Information

4. Screen for Bipolar Disorder Prior to Starting Escitalopram Tablets

5. Recommended Dosage for Specific Populations

6. Discontinuation of Treatment with Escitalopram

7. Switching Patients to or from a Monoamine Oxidase Inhibitor (MAOI) Antidepressant

8. Angle Closure Glaucoma

9. Concomitant Use with Pimozide

10. Known Hypersensitivity to Escitalopram or Citalopram or any of the inactive ingredients (4)

11. Pregnancy, Risk in Pregnancy, and Lactation

12. Pediatric Patients

13. Geriatric Patients

14. Concomitant Use with MAOIs

15. Concomitant Use with Methylene Blue

16. Concomitant Use with Pimozide

17. Concomitant Use with Other MAOIs

18. Concomitant Use with Linezolid

19. Concomitant Use with Methylene Blue

20. Concomitant Use with Methylene Blue

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46. Concomitant Use with Methylene Blue

**WARNINGS AND PRECAUTIONS**

1. Serotonin Syndrome: Increased risk when co-administered with other serotonergic agents but also when taken alone. If it occurs, discontinue Escitalopram and serotonergic agents and initiate supportive treatment (4, 5.2)

2. Discontinuation syndrome: When discontinuing Escitalopram, reduce dosage gradually whenever possible, and monitor for discontinuation symptoms (5.3)

3. Seizures: Use with caution in patients with a history of seizure (5.4)

4. Activation of Mania/Hypomania: Screen patients for bipolar disorder (5.5)

5. Hypertension: Can occur in association with syndrome of inappropriate antidiuretic hormone secretion (5.6)

6. Increased Risk of Bleeding: Concomitant use of nonsteroidal anti-inflammatory drugs, aspirin, other antiplatelet drugs, warfarin and other drugs that affect coagulation may increase risk (5.7)

7. Interference with Cognitive and Motor Performance: Use caution when operating machinery (5.8)

8. Angle Closure Glaucoma: Angle closure glaucoma has occurred in patients with untreated anatomically narrow angles treated with antidepressants (5.9)

9. Use in Patients with Concomitant Illness: Use caution in patients with diseases or conditions that produce altered metabolism or hemodynamic responses (5.10)

10. Sexual Dysfunction: Escitalopram may cause symptoms of sexual dysfunction (5.11)

11. **ADVERSE REACTIONS**

Most commonly observed adverse reactions (incidence ≥ 5% and at least twice the incidence of placebo patients) in major depressive disorder (primarily escitalopram delayed-release), nausea, increased fatigue and somnolence, decreased libido, and anorgasmia (6.1)

12. **DRUG INTERACTIONS**

Concomitant use with SSRIs, SNRIs or Tryptophan is not recommended (5.1)

13. **USE IN SPECIFIC POPULATIONS**

Pregnancy, Risk in Pregnancy, and Lactation

Pregnancy: SSRI use, particularly late in pregnancy, may increase the risk for persistent pulmonary hypertension and symptoms of poor adaptation (respiratory distress, temperature instability, feeding difficulties, hypoxemia, tremor, irritability) in the neonates (8.1)

See full for PATIENT COUNSELING INFORMATION and Medication Guide

Additional pediatric use information is approved for Abvie Inc.'s LEXAPRO® (escitalopram) tablets. However, due to Abvie Inc.'s marketing exclusivity rights, this drug product is not labeled with that information.

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**Table 1: Risk Differences of the Number of Patients with Suicidal Thoughts and Behaviors in the Pooled Placebo-Controlled Trials of Antidepressants in Pediatric and Adult Patients**

Age Range	Drug-Placebo Difference in Number of Patients of Suicidal Thoughts and Behaviors per 1,000 Patients Treated
18 years old	14 additional patients
<18 to 24 years old	5 additional patients
25 to 64 years old	1 fewer patient
>64 years old	6 fewer patients

It is unknown whether the risk of suicidal thoughts and behaviors in children, adolescents, and young adults extends to longer-term use, i.e., beyond four months. However, there is substantial evidence from placebo-controlled maintenance trials in adults with MDD that antidepressant drug use reduces the recurrence of depression and that depression itself is a risk factor for suicidal thoughts and behaviors.

Monitor all antidepressant-treated patients for any indication for clinical worsening and emergence of suicidal thoughts and behaviors, especially during the initial few months of drug therapy, and at times of dosage changes. Counsel family members or caregivers of patients to monitor for changes in behavior and to alert the healthcare provider. Consider changing the therapeutic regimen, including possibly discontinuing escitalopram, in patients whose depression is persistently worse, or who are experiencing emergent suicidal thoughts or behaviors.

**5.2 Serotonin Syndrome**

Concomitant use of escitalopram tablets, can precipitate serotonin syndrome, a potentially life-threatening condition. The risk is increased with concomitant use of other serotonergic drugs (including triptans, tryptics antidepressants, fenflurine, meprobamate, lithium, tramadol, typhloxylin, buspirone, amphetamines, and St. John's Wort) and with drugs that impair metabolism of serotonin, i.e., MAOIs (see Warnings and Precautions (4) and Drug Interactions (7)).

Serotonin syndrome symptoms may include mental status changes (e.g., agitation, hallucinations, delirium, and coma), autonomic instability (e.g., tachycardia, labile blood pressure, dizziness, diaphoresis, flushing, hyperthermia), neuromuscular symptoms (e.g., tremor, rigidity, myoclonus, hyperreflexia, incoordination) seizures, and/or gastrointestinal symptoms (e.g., nausea, vomiting, diarrhea).

The concomitant use of escitalopram with MAOIs is contraindicated. In addition, do not initiate Escitalopram in a patient who is being treated with MAOIs such as linezolid or intravenous methylene blue. No reports involving the administration of methylene blue by other routes (such as oral tablets or local tissue injection). If it is necessary to initiate treatment with an MAOI such as linezolid or intravenous methylene blue in a patient taking escitalopram, discontinue Escitalopram before initiating treatment with the MAOI (see Contraindications (4) and Dosage and Administration (2.7)).

Monitor all patients taking escitalopram tablets for the emergence of serotonin syndrome. Discontinue treatment with escitalopram tablets and concomitant serotonergic agents immediately if the above symptoms occur, and initiate supportive symptomatic treatment. If concomitant use of escitalopram with other serotonergic drugs is clinically warranted, inform patients of the increased risk for serotonin syndrome and monitor for symptoms.

**5.3 Discontinuation Syndrome**

Discontinuation of escitalopram and other SSRIs, there have been spontaneous reports of adverse reactions occurring upon discontinuation of these drugs, particularly when abrupt, including the following: dysphoric mood, irritability, agitation, dizziness, sensory disturbances (e.g., paraesthesia such as electric shock sensations), anxiety, confusion, headache, lethargy, emotional lability, insomnia, and hypomania. While these events are generally self-limiting, there have been reports of serious discontinuation symptoms.

Monitor for these symptoms when discontinuing treatment with escitalopram. A gradual reduction in the dose rather than abrupt cessation is recommended whenever possible. If intolerable symptoms occur following a decrease in the dose or upon discontinuation of treatment, then reducing the previously prescribed dose may be considered. Subsequently, the physician may continue decreasing the dose but at a more gradual rate (see Dosage and Administration (2.6)).

**5.4 Seizures**

Although anticonvulsant effects of racemic citalopram have been observed in animal studies, escitalopram has not been systematically evaluated in patients with a seizure disorder. These patients were excluded from clinical studies during the product's premarketing testing. In clinical trials of escitalopram, cases of convulsion have been reported in association with escitalopram treatment. Use the drug with caution in patients with a history of seizure disorder. Escitalopram tablets should be introduced with care in patients with a history of seizure disorder.

**5.5 Activation of Mania or Hypomania**

Patients with bipolar disorder, treating a depressive episode with escitalopram or another antidepressant may precipitate a manic/manic episode. In placebo-controlled trials of escitalopram in major depressive disorder, activation of mania/hypomania was reported in one (0.1%) of 715 patients treated with escitalopram and in none of the 592 patients treated with placebo. One additional case of hypomania has been reported in association with escitalopram treatment. Activation of mania/hypomania has also been reported in a small proportion of patients with major affective disorders treated with racemic citalopram and other marketed drugs effective in the treatment of major depressive disorder. Prior to initiating treatment with escitalopram, screen patients for any personal or family history of bipolar disorder, mania, or hypomania (see Dosage and Administration (2.4)).

**5.6 Hypomania**

Hypomania may occur as a result of treatment with SSRIs, including escitalopram. In many cases, this hypomania appears to be the result of the syndrome of inappropriate antidiuretic hormone secretion (SIADH), and was reversible when escitalopram was discontinued. Cases with serum sodium lower than 110 mEq/L have been reported. Elderly patients may be at greater risk for developing hypomania with SSRIs and SNRIs. Also, patients taking diuretics or who are otherwise volume depleted may be at greater risk (see Use in Specific Populations (8.3)). Consider discontinuation of escitalopram in patients with symptomatic hypomania and appropriate medical intervention should be instituted.

Signs and symptoms of hypomania include decreased energy, concentration, memory impairment, confusion, weakness, fatigue, decreased libido, and anorgasmia.

Discontinue escitalopram if signs and symptoms associated with severe mania and/or acute cases have included hallucination, seizure, suicide, coma, respiratory arrest, and death.

**5.7 Increased Risk of Bleeding**

Escitalopram is a selective serotonin inhibitor, including escitalopram, increase the risk of bleeding events. Concomitant use of aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), other antiplatelet drugs, warfarin, and other anticoagulants may add to the risk. Case reports and epidemiological studies (case-control and cohort design) have demonstrated an association between use of drugs that inhibit platelet function and the occurrence of gastrointestinal bleeding. In addition, patients taking aspirin and other antiplatelet drugs may be at greater risk (see Use in Specific Populations (8.3)). Consider discontinuation of escitalopram in patients with symptomatic hypomania and appropriate medical intervention should be instituted.

Signs and symptoms of hypomania include decreased energy, concentration, memory impairment, confusion, weakness, fatigue, decreased libido, and anorgasmia.

Discontinue escitalopram if signs and symptoms associated with severe mania and/or acute cases have included hallucination, seizure, suicide, coma, respiratory arrest, and death.

**5.8 Interference with Cognitive and Motor Performance**

In a study in young volunteers, escitalopram 10 mg daily did not produce impairment of intellectual function or psychomotor performance. Because any psychoactive drug may impair judgment, thinking, or motor skills, however, patients should be cautioned about operating hazardous machinery, including automobiles, until they are reasonably certain that escitalopram tablets therapy does not affect their ability to engage in such activities.

**5.9 Angle Closure Glaucoma**

The pupillary dilation that occurs following use of many antidepressant drugs, including escitalopram may trigger an angle closure attack in a patient with pupillary block in one or both eyes who does not have a patent iridotomy.

**5.10 Use in Patients with Concomitant Illness**

Clinical experience with escitalopram in patients that contain concomitant systemic illnesses is limited. Caution is advisable in using escitalopram tablets in patients with diseases or conditions that produce altered metabolism or hemodynamic responses. Escitalopram has not been systematically evaluated in patients with a recent history of myocardial infarction or unstable heart disease. Patients with these diagnoses were generally excluded from clinical studies during the product's premarketing testing.

In subjects with hepatic impairment, clearance of racemic citalopram was decreased and plasma concentrations were increased. The recommended dose of escitalopram tablets in hepatically impaired patients is 10 mg daily (see Dosage and Administration (2.4) and Use in Specific Populations (8.6)).

Because escitalopram is extensively metabolized, excretion of unchanged drug in urine is a minor route of elimination. Until adequate numbers of patients with severe renal impairment have been evaluated during chronic treatment with escitalopram tablets, however, it should be used with caution in such patients (see Dosage and Administration (2.5) and Use in Specific Populations (8.7)).

**5.11 Sexual Dysfunction**

Use of SSRIs, including escitalopram, may cause symptoms of sexual dysfunction (see Adverse Reactions (6.1)). In male patients, SSRI use may result in ejaculatory delay or failure, decreased libido, and erectile dysfunction. In female patients, SSRI use may result in decreased libido and anorgasmia.

It is important for prescribers to inquire about sexual function prior to initiation of escitalopram and to inquire specifically about changes in sexual function during treatment, because sexual function may not be spontaneously reported. When evaluating changes in sexual function, obtaining a detailed history (including timing of symptom onset) is important because sexual symptoms may have other causes, including the underlying psychiatric disorder. Discuss potential management strategies to support patients in making informed decisions about treatment.

**6 ADVERSE REACTIONS**

The following adverse reactions are discussed in greater detail in other sections of the labeling:

Suicidal thoughts and behaviors in adolescents and young adults (see Warnings and Precautions (5.1))

Serotonin syndrome (see Warnings and Precautions (5.2))

Discontinuation syndrome (see Warnings and Precautions (5.3))



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mg escitalopram oxalate in strengths equivalent to 5 mg, 10 mg, and 20 mg, respectively, of escitalopram base. The 10 and 20 mg tablets are scored. The tablets also contain the following inactive ingredients: cellulose microcrystalline, colloidal silicon dioxide, croscarmellose sodium, magnesium stearate, povidone and talc. The film coating contains hypromellose, polyethylene glycol 400 and titanium dioxide.

Meets USP Dissolution Test 2.

## 12 CLINICAL PHARMACOLOGY

**12.1 Mechanism of Action**  
The mechanism of antidepressant action of escitalopram, the S-enantiomer of racemic citalopram, is presumed to be linked to potentiation of serotonergic activity in the central nervous system (CNS) resulting from its inhibition of CNS neuronal reuptake of serotonin (5-HT).

**12.2 Pharmacodynamics**  
*In vivo* and *in vitro* studies in animals suggest that escitalopram is a highly selective serotonin reuptake inhibitor (SSRI) with minimal effects on norepinephrine and dopamine neuronal reuptake. Escitalopram is at least 100-fold more potent than the R-enantiomer with respect to inhibition of 5-HT reuptake and inhibition of 5-HT neuronal firing rate. Tolerance to a model of antidepressant effect *in rats* was not induced by long-term (up to 5 weeks) treatment with escitalopram. Escitalopram has no or very low affinity for serotonergic (5-HT<sub>1A</sub>) or 5-HT<sub>2</sub> receptors including alpha- and beta-adrenergic, dopamine (D<sub>1-3</sub>), histamine (H<sub>1-3</sub>), muscarinic (M<sub>1-3</sub>), and benzodiazepine receptors. Escitalopram also does not bind to, or has low affinity for, various ion channels including Na<sup>+</sup>, K<sup>+</sup>, Cl<sup>-</sup>, and Ca<sup>2+</sup> channels. Antagonism of muscarinic, histaminic, and adrenergic receptors has been hypothesized to be associated with various anticholinergic, sedative, and cardiovascular side effects of other psychotropic drugs.

## 12.3 Pharmacokinetics

The single- and multiple-dose pharmacokinetics of escitalopram are linear and dose-proportional to a dose range of 10 to 30 mg/day.

With once-daily dosing, steady state plasma concentrations are achieved within approximately one week. At steady state, the extent of accumulation of escitalopram in plasma in young healthy subjects was 2.2 to 2.5 times the plasma concentrations observed after a single dose.

## Absorption

The absolute bioavailability of escitalopram is about 80% relative to an intravenous dose. The tablet and the oral solution dosage forms of escitalopram oxalate are bioequivalent.

Following a single oral dose (20 mg tablet or solution) of escitalopram, peak blood levels occur at about 5 hours. Absorption of escitalopram is not affected by food.

## Distribution

The binding of escitalopram to human plasma proteins is approximately 56%. The volume of distribution of citalopram is about 12 L/kg. Data specific for escitalopram are unavailable.

## Elimination

Biotransformation of escitalopram is mainly hepatic, with a mean terminal half-life of about 27 to 32 hours. The oral clearance of escitalopram is 600 mL/min, with approximately 7% of that due to renal clearance.

## Metabolism

Escitalopram is metabolized to S-D-CT and S-didemethylcitalopram (S-D-CTD). In humans, unchanged escitalopram is the predominant compound in plasma. At steady state, the concentration of the escitalopram metabolite S-D-CT in plasma is approximately one-third that of escitalopram. The level of S-D-CT was not detectable in most subjects. *In vitro* studies show that escitalopram is at least 27 times more potent than S-D-CT and S-D-CTD, respectively, in the inhibition of serotonin reuptake, suggesting that the metabolites of escitalopram do not contribute significantly to the antidepressant actions of escitalopram. S-D-CT and S-D-CTD also have no or very low affinity for serotonergic (5-HT<sub>1A</sub>) or other receptors including alpha- and beta-adrenergic, dopamine (D<sub>1-3</sub>), histamine (H<sub>1-3</sub>), muscarinic (M<sub>1-3</sub>), and benzodiazepine receptors. S-D-CT and S-D-CTD also do not bind to various ion channels including Na<sup>+</sup>, K<sup>+</sup>, Cl<sup>-</sup>, and Ca<sup>2+</sup> channels. *In vitro* studies using human liver microsomes indicated that CYP3A4 and CYP2C19 are the primary isozymes involved in the biotransformation of escitalopram.

**Excretion**  
Following oral administrations of escitalopram, the fraction of drug recovered in the urine as escitalopram and S-demethylcitalopram (S-D-CT) is about 8% and 10%, respectively.

## Specific Populations

## Pediatric Patients

Pediatric patients 12 to 17 years of age: In a single dose study of 10 mg escitalopram, AUC of escitalopram decreased by 19%, and C<sub>max</sub> increased by 26% in healthy pediatric subjects 12 to 17 years of age compared to adults. Following multiple dosing of 40 mg/day citalopram, escitalopram elimination half-life, steady-state C<sub>max</sub> and AUC were similar in pediatric patients 12 to 17 years of age with MDD compared to adults [see *Use in Specific Populations (8.4)*].

## Geriatric Patients

Escitalopram pharmacokinetics in subjects > 65 years of age were compared to adults in a single-dose and a multiple-dose study. Escitalopram AUC and half-life were increased by approximately 50% in elderly subjects, and C<sub>max</sub> was unchanged [see *Dosage and Administration (2.5)*, *Use in Specific Populations (8.5)*].

## Male and Female Patients

Based on data from single- and multiple-dose studies measuring escitalopram in elderly, young adults, and adolescents, no dosage adjustment on the basis of gender is needed.

## Patients with Hepatic Impairment

Citalopram oral clearance was reduced by 37% and half-life was doubled in patients with reduced hepatic function compared to normal subjects [see *Dosage and Administration (2.5)*, *Use in Specific Populations (8.6)*].

## Patients with Renal Impairment

In patients with mild to moderate renal function impairment, oral clearance of citalopram was reduced by 17% compared to normal subjects. No information is available about the pharmacokinetics of escitalopram in patients with severely reduced renal function (creatinine clearance < 20 mL/min) [see *Use in Specific Populations (8.7)*].

## Drug Interaction Studies

*In vitro* enzyme inhibition data did not reveal an inhibitory effect of escitalopram on CYP3A4, -1A2, -1A2, -2C8, -2C19, and -2E1. Based on *in vitro* data, escitalopram would be expected to have little inhibitory effect on *in vivo* metabolism mediated by these cytochromes. While *in vivo* data to address this question are limited, results from drug interaction studies suggest that escitalopram, at a dose of 20 mg, has no 3A4 inhibitory effect and a modest 2D6 inhibitory effect [see *Drug Interactions (7)*].

## CYP3A4 and CYP2C19 Inhibitors

*In vitro* studies indicated that CYP3A4 and -2C19 are the primary enzymes involved in the metabolism of escitalopram. However, coadministration of escitalopram (20 mg) and ritonavir (600 mg), a potent inhibitor of CYP3A4, did not significantly affect the pharmacokinetics of escitalopram. Because escitalopram is metabolized by multiple enzyme systems, inhibition of a single enzyme may not appreciably decrease escitalopram clearance.

## Cimetidine

In subjects who had received 21 days of 40 mg/day racemic citalopram, combined administration of 400 mg twice a day cimetidine for 8 days resulted in an increase in citalopram AUC and C<sub>max</sub> of 43% and 30%, respectively. The clinical significance of these findings is unknown.

## Digoxin

In subjects who had received 21 days of 40 mg/day racemic citalopram, combined administration of citalopram and digoxin (single dose of 1 mg) did not significantly affect the pharmacokinetics of either citalopram or digoxin.

## Lithium

Coadministration of racemic citalopram (40 mg/day for 10 days) and lithium (30 mmol/day for 5 days) had no significant effect on the pharmacokinetics of citalopram or lithium. Plasma lithium levels should be monitored with appropriate adjustment to the lithium dose in accordance with standard clinical practice. Because lithium may enhance the serotonergic effects of escitalopram, caution should be exercised when escitalopram tablets and lithium are coadministered.

## Theophylline

Combined administration of racemic citalopram (40 mg/day for 21 days) and the CYP1A2 substrate theophylline (single dose of 300 mg) did not affect the pharmacokinetics of theophylline. The effect of theophylline on the pharmacokinetics of citalopram was not evaluated.

## Ketocoazole

Combined administration of racemic citalopram (40 mg) and ketocoazole (200 mg), a potent CYP3A4 inhibitor, decreased the C<sub>max</sub> and AUC of ketocoazole by 21% and 10%, respectively, and did not significantly affect the pharmacokinetics of citalopram.

## Ritonavir

Combined administration of a single dose of ritonavir (600 mg), both a CYP3A4 substrate and a potent inhibitor of CYP3A4, and escitalopram (20 mg) did not affect the pharmacokinetics of either ritonavir or escitalopram.

## Triazolam

Combined administration of racemic citalopram (titrated to 40 mg/day for 28 days) and the CYP3A4 substrate triazolam (single dose of 0.25 mg) did not significantly affect the pharmacokinetics of either citalopram or triazolam.

## Mefenoprol

Administration of 20 mg/day escitalopram tablets for 21 days in healthy volunteers resulted in a 50% increase in C<sub>max</sub> and 82% increase in AUC of the beta-adrenergic blocker metoprolol (given in a single dose of 100 mg). Increased metoprolol plasma levels have been associated with decreased cardioselectivity. Coadministration of escitalopram tablets and metoprolol had no clinically significant effects on blood pressure or heart rate.

## Alcohol

Escitalopram did not potentiate the cognitive and motor effects of alcohol in a clinical trial. As with other psychotropic medications, the use of alcohol by patients taking escitalopram tablets are not recommended.

## Warfarin

Administration of 40 mg/day racemic citalopram for 21 days did not affect the pharmacokinetics of warfarin, a CYP3A4 substrate. Prothrombin time was increased by 5%. The clinical significance of these findings is unknown.

*Additional pediatric use information is approved for AbbVie Inc.'s LEXAPRO® (escitalopram) tablets. However, due to AbbVie Inc.'s marketing exclusivity rights, this drug product is not labeled with that information.*

## 13 NONCLINICAL TOXICOLOGY

### 13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

Racemic citalopram was administered in the diet to NMH1B0M strain mice and CDBS W1 strain rats for 18 and 24 months, respectively. There was no evidence for carcinogenicity of racemic citalopram in mice receiving up to 240 mg/kg/day. There was an increased incidence of small intestine carcinoma in rats receiving 8 or 24 mg/kg/day racemic citalopram. A no-effect dose for this finding was not established. The relevance of these findings to humans is unknown.

### Mutagenesis

Racemic citalopram was mutagenic in the *in vitro* bacterial reverse mutation assay (Ames test) in 2 of 5 bacterial strains (Salmonella TA98 and TA1537) in the absence of metabolic activation. It was clastogenic in the *in vitro* Chinese hamster lung cell assay for chromosomal aberrations in the presence and absence of metabolic activation. Racemic citalopram was not mutagenic in the *in vitro* mammalian forward gene mutation assay (HPRT) in mouse lymphoma cells or in a coupled *in vitro* *in vivo* unscheduled DNA synthesis (UDS) assay in rat liver. It was not clastogenic in the *in vitro* chromosomal aberration assay in human lymphocytes or in two *in vivo* mouse micronucleus assays.

### Impairment of Fertility

When racemic citalopram was administered orally to 16 male and 24 female rats prior to and throughout mating and gestation at doses of 32, 48, and 72 mg/kg/day, mating was decreased at all doses, and fertility was decreased at doses > 32 mg/kg/day. Gestation duration was increased at 48 mg/kg/day.

### 13.2 Animal Toxicology and/or Pharmacology

#### Retinal Changes in Rats

Pathologic changes (degeneration/atrophy) were observed in the retinas of albino rats in the 2-year carcinogenicity study with racemic citalopram. There was an increase in both incidence and severity of retinal pathology in both male and female rats receiving 80 mg/kg/day. Similar findings were not present in rats receiving 24 mg/kg/day of racemic citalopram for two years, in mice receiving up to 240 mg/kg/day of racemic citalopram for 18 months, or in dogs receiving up to 20 mg/kg/day of racemic citalopram for one year.

Additional studies to investigate the mechanism for this pathology have not been performed, and the potential significance of this effect in humans has not been established.

#### Cardiovascular Changes in Dogs

In a one-year toxicology study, 5 of 10 beagle dogs receiving oral racemic citalopram doses of 8 mg/kg/day died suddenly between weeks 17 and 31 following initiation of treatment. Sudden deaths were not observed in rats at doses of racemic citalopram up to 120 mg/kg/day, which produced plasma levels of citalopram and its metabolites demethylcitalopram and didemethylcitalopram (DDCT) similar to those observed in dogs at 8 mg/

kg/day. A subsequent intravenous dosing study demonstrated that in beagle dogs, racemic DDCT caused QT prolongation, a known risk factor for the observed outcome in dogs.

## 14 CLINICAL STUDIES

### 14.1 Major Depressive Disorder

The efficacy of escitalopram as a treatment for major depressive disorder was established in three, 8-week, placebo-controlled studies conducted in outpatients between 18 and 65 years of age who met DSM-IV criteria for major depressive disorder. The primary outcome in all three studies was change from baseline to endpoint in the Montgomery Asberg Depression Rating Scale (MADRS).

A fixed-dose study compared 10 mg daily escitalopram and 20 mg daily escitalopram to placebo and 40 mg daily escitalopram. The 10 mg daily and 20 mg daily escitalopram treatment groups showed statistically significant greater mean improvement compared to placebo on the MADRS. The 10 mg and 20 mg escitalopram groups were similar on this outcome measure.

In a second fixed-dose study of 10 mg daily escitalopram and placebo, the 10 mg daily escitalopram treatment group showed statistically significant greater mean improvement compared to placebo on the MADRS.

In a flexible-dose study, comparing escitalopram, titrated between 10 mg and 20 mg daily, to placebo and escitalopram, titrated between 20 mg and 40 mg daily, the escitalopram treatment group showed statistically significant greater mean improvement compared to placebo on the MADRS.

Analyses of the relationship between treatment outcome and age, gender, and race did not suggest any differential responsiveness on the basis of these patient characteristics. In a longer-term trial, 274 patients meeting (DSM-IV) criteria for major depressive disorder, who had responded during an initial 8-week, open-label treatment phase with escitalopram 10 mg or 20 mg daily, were randomized to continuation of escitalopram at their same dose, or to placebo, for up to 36 weeks of observation for relapse. Response during the open-label phase was defined by having a decrease of the MADRS total score to < 12. Relapse during the double-blind phase was defined as an increase of the MADRS total score to ≥ 22, or discontinuation due to insufficient clinical response. Patients receiving continued escitalopram experienced a statistically significant longer time to relapse compared to those receiving placebo.

**Pediatric Patients 12 years of age and older**  
The efficacy of escitalopram as a treatment for major depressive disorder in pediatric patients 12 to 17 years was established in an 8-week, flexible-dose, placebo-controlled study that compared escitalopram tablets (10 mg to 20 mg daily) to placebo in outpatients 12 to 17 years of age inclusive who met DSM-IV criteria for major depressive disorder. The primary outcome was change from baseline to endpoint in the Children's Depression Rating Scale - Revised (CDRS-R). In this study, escitalopram showed statistically significant greater mean improvement compared to placebo on the CDRS-R.

The efficacy of escitalopram in the treatment of major depressive disorder in pediatric patients 12 to 17 years was established, in part, on the basis of extrapolation from the 8-week, flexible-dose, placebo-controlled study with racemic citalopram 20 mg to 40 mg daily. In this outpatient study in pediatric patients 12 to 17 years of age who met DSM-IV criteria for major depressive disorder, citalopram treatment showed statistically significant greater mean improvement from baseline, compared to placebo, on the CDRS-R; the positive results for this trial largely came from the 12 to 17 year subgroup.

Two additional flexible-dose, placebo-controlled MDD studies (one escitalopram study in patients ages 7 to 17 years and one citalopram study) patients 13 to 18 years) did not demonstrate efficacy. The safety and effectiveness of escitalopram have not been established in pediatric patients less than 12 years of age with MDD.

### 14.2 Generalized Anxiety Disorder

The efficacy of escitalopram in the treatment of generalized anxiety disorder (GAD) in adults was demonstrated in three, 8-week, multicenter, flexible-dose, placebo-controlled studies that compared escitalopram tablets (10 mg to 20 mg daily) to placebo in outpatients between 18 and 80 years of age who met DSM-IV criteria for GAD. In all three studies, escitalopram showed statistically significant greater mean improvement compared to placebo on the Hamilton Anxiety Scale (HAM-A).

There were too few patients in differing ethnic and age groups to adequately assess whether or not escitalopram has differential effects in these groups. There was no difference in response to escitalopram between men and women. *Additional pediatric use information is approved for AbbVie Inc.'s LEXAPRO® (escitalopram) tablets. However, due to AbbVie Inc.'s marketing exclusivity rights, this drug product is not labeled with that information.*

### 16 HOW SUPPLIED/STORAGE AND HANDLING

#### How Supplied

Escitalopram tablets, USP 5 mg are white to off-white, round, biconvex, film coated tablets debossed with "135" on one side and "5" on other side.

Bottles of 1000

NDC 82009-035-10

Escitalopram tablets, USP 10 mg are white to off-white, round, biconvex, film coated tablets debossed with break line on one side, separating "11" and "36" on one side, and "10" on other side.

Bottles of 1000

NDC 82009-036-10

Escitalopram tablets, USP 20 mg are white to off-white, round, biconvex, film coated tablets debossed with break line on one side, separating "11" and "37" on one side, and "20" on other side.

Bottles of 1000

NDC 82009-037-10

#### Storage and Handling

Store at 20° to 25° C (68° to 77°F); excursions permitted to 15° to 30°C (59° to 86°F) [see USP Controlled Room Temperature].

### 17 PATIENT COUNSELING INFORMATION

Advise the patient to read the FDA-approved patient labeling (Medication Guide).

#### Suicidal Thoughts and Behaviors

Advise patients, their families and caregivers to look for the emergence of suicidal ideation and behavior, especially during treatment and when the dose is adjusted up or down, and instruct them to report such symptoms to their healthcare provider [see *Boned Warning and Warnings and Precautions (5.1)*].

#### Serotonin Syndrome

Caution patients about the risk of serotonin syndrome, particularly with the concomitant use of escitalopram with other serotonergic drugs including triptans, tricyclic antidepressants, opioids, lithium, tryptophan, buspirone, amphetamines, and St. John's Wort, and with drugs that impair metabolism of serotonin (in particular, MAOIs, both those intended to treat psychiatric disorders and also others, such as linezolid). Instruct patients to contact their health care provider or report to the emergency room if they experience signs or symptoms of serotonin syndrome [see *Warnings and Precautions (5.2)*, *Drug Interactions (7)*].

#### Discontinuation Syndrome

Advise patients not to abruptly discontinue escitalopram tablets and to discuss any tapering regimen with their healthcare provider. Inform patients that adverse reactions can occur when escitalopram tablets are discontinued [see *Warnings and Precautions (5.3)*].

#### Activation of Mania or Hypomania

Advise patients and their caregivers to observe for signs of activation of mania/hypomania and instruct them to report such symptoms to the healthcare provider [see *Warnings and Precautions (5.5)*].

#### Increased Risk of Bleeding

Inform patients about the concomitant use of escitalopram with NSAIDs, aspirin, warfarin, other antiplatelet drugs, or other anticoagulants because the combined use has been associated with an increased risk of bleeding. Advise patients to inform their healthcare providers if they are taking or planning to take any prescription or over-the-counter medications that increase the risk of bleeding [see *Warnings and Precautions (5.7)*].

#### Angle Closure Glaucoma

Advise patients that taking escitalopram tablets can cause mild pupillary dilation, which in susceptible individuals, can lead to an episode of angle closure glaucoma. Pre-existing glaucoma is almost always open-angle glaucoma because angle closure glaucoma, when diagnosed, can be treated definitively with iridectomy.

Open-angle glaucoma is not a risk factor for angle closure glaucoma. Patients may wish to be examined to determine whether they are susceptible to angle closure, and have a prophylactic procedure (e.g., iridectomy), if they are susceptible [see *Warnings and Precautions (5.9)*].

#### Sexual Dysfunction

Advise patients that use of escitalopram may cause symptoms of sexual dysfunction in both male and female patients. Inform patients that they should discuss any changes in sexual function and potential management strategies with their healthcare provider [see *Warnings and Precautions (5.11)*].

#### Concomitant Medications

Since escitalopram is the active isomer of racemic citalopram (Citalax), the two agents should not be coadministered. Patients should be advised to inform their physician if they are taking, or plan to take, any prescription or over-the-counter drugs, as there is a potential for interaction. **Interference with Psychomotor Performance** Because psychoactive drugs may impair judgment, thinking, or motor skills, patients should be cautioned about operating hazardous machinery, including automobiles, until they are reasonably certain that escitalopram tablets therapy does not affect their ability to engage in such activities.

#### Alcohol

Patients should be told that, although escitalopram has not been shown in experiments with normal subjects to increase the mental and motor skill impairments caused by alcohol, the concomitant use of escitalopram and alcohol in depressed patients is not advised.

#### Pregnance

Advise pregnant women to notify their healthcare providers if they become pregnant or intend to become pregnant during treatment with escitalopram tablets.

Advise patients that escitalopram use later in pregnancy may lead to increased risk for neonatal complications requiring prolonged hospitalization, respiratory support, tube feeding, and/or persistent pulmonary hypertension (PPHN) of the newborn [see *Use in Specific Populations (8.1)*].

Advise women that there is a pregnancy exposure registry that monitors pregnancy outcomes in women exposed to escitalopram during pregnancy [see *Use in Specific Populations (8.1)*].

#### Lactation

Advise breastfeeding women using escitalopram to monitor infants for excess sedation, restlessness, agitation, poor feeding and poor weight gain and to seek medical care if they notice these signs [see *Use in Specific Populations (8.2)*].

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## MEDICATION GUIDE

### Escitalopram (EE sye TAL o pram) Tablets, USP

**What is the most important information I should know about escitalopram tablets?**

**Escitalopram tablets may cause serious side effects, including:**

- Increased risk of suicidal thoughts or actions.** Escitalopram tablets and other antidepressant medicines increase the risk of suicidal thoughts and actions in people 24 years of age and younger, especially within the first few months of treatment or when the dose is changed.
  - Depression or other mental illnesses are the most important causes of suicidal thoughts or actions.**

**How can I watch for and try to prevent suicidal thoughts and actions?**

- Pay close attention to any changes, especially sudden changes in mood, behavior, thoughts, or feelings, or if you or your child develop suicidal thoughts or actions. This is very important when an antidepressant medicine is started or when the dose is changed.
- Call your healthcare provider right away to report new or sudden changes in mood, behavior, thoughts, or feelings or if you or your child develop suicidal thoughts or actions.
- Keep all follow-up visits with your healthcare provider as scheduled and call your healthcare provider between visits if you are worried about symptoms.

**Call your healthcare provider or get emergency medical help right away if you or your child have any of the following symptoms, especially if they are new, worse, or worry you:**

- attempts to commit suicide, or
  - acting on dangerous impulses
  - thoughts about suicide or dying
  - new or worsening anxiety
  - feeling very agitated or restless
  - trouble sleeping
  - an extreme increase in activity or talking (mania) or other unusual changes in behavior or mood
- acting aggressively, being angry or violent
- new or worse depression
- panic attacks
- new or worse irritability
- an extreme increase in activity or talking (mania)

### What is escitalopram tablets?

Escitalopram tablets are prescription medicine used to treat:

- a certain type of depression called Major Depressive Disorder (MDD) in adults and children 12 years of age and older
- Generalized Anxiety Disorder (GAD) in adults

It is not known if escitalopram is safe and effective for use in children under 12 years of age with MDD or children under 7 years of age with GAD.

### Do not take escitalopram tablets if you or your child:

- are taking, or have stopped taking within the last 14 days, a medicine called a monoamine oxidase inhibitor (MAOI), including the antibiotic linezolid or intravenous methylene blue