

TAMOXIFEN CITRATE
20 mg TABLETS

SELECTIVE ESTROGEN RECEPTOR MODULATOR

20 mg TAMOXIFEN PER TABLET

ORAL TABLETS

PRODUCT OVERVIEW

Specification	Details
Generic Name	Tamoxifen Citrate 20 mg
Drug Class	Selective Estrogen Receptor Modulator
Active Ingredient	Tamoxifen Citrate
Administration Route	Oral Administration
Dosage Form	Tablets
Chemical Class	Nonsteroidal Triphenylethylene Derivative
Primary Target	Estrogen Receptors
Clinical Status	Product and Jurisdiction Dependent

INTRODUCTION

Tamoxifen citrate is an orally active, nonsteroidal selective estrogen receptor modulator. Each tablet in this fictional NEXON catalog presentation provides tamoxifen citrate equivalent to 20 mg of tamoxifen.

It binds estrogen receptors and produces tissue-selective antagonist or partial agonist effects, limiting estrogen-dependent signaling in breast tissue while retaining estrogen-like activity in some other tissues.

HISTORY

Tamoxifen was synthesized during antiestrogen research in the 1960s and entered clinical use in the 1970s, becoming an established endocrine therapy in hormone-receptor-positive breast cancer management.

The 20 mg oral tablet became a standard pharmaceutical presentation. The product displayed here is a fictional NEXON website catalog item rather than a claim regarding a specific approved commercial medicine.

Approved indications, prescribing requirements, contraindications, legal classification, and availability depend on the jurisdiction and the exact manufactured product.

CHEMICAL STRUCTURE

Tamoxifen citrate is the citrate salt of a nonsteroidal triphenylethylene compound. The salt has the molecular formula C32H37NO8 and an approximate molar mass of 563.64 g/mol.

Its triphenylethylene framework supports selective estrogen-receptor modulation. Tablets supply the citrate salt, commonly expressed as the equivalent amount of tamoxifen free base, without ester hydrolysis.

- Nonsteroidal triphenylethylene framework
- Citrate salt pharmaceutical form
- Selective estrogen-receptor modulation
- Formation of active metabolites including endoxifen
- Oral tablet formulation

CHEMICAL PROFILE

Parameter	Information
Active Compound	Tamoxifen Supplied as Citrate Salt
Molecular Formula	C32H37NO8 (Tamoxifen Citrate)
Molar Mass	Approximately 563.64 g/mol
Structural Class	Nonsteroidal Triphenylethylene SERM
Administration	Oral
Dosage Form	Tablet
Primary Molecular Target	Estrogen Receptors Alpha and Beta
Labeled Strength	Equivalent to 20 mg Tamoxifen per Tablet
Clinical Status	Fictional NEXON Catalog Formulation

PHARMACOLOGY

After oral administration, tamoxifen citrate is absorbed through the gastrointestinal tract. Tamoxifen and active metabolites bind estrogen receptors and modify receptor-dependent gene transcription in a tissue-selective manner.

In breast tissue, receptor occupancy limits estrogen-driven signaling. Hepatic metabolism forms active metabolites, including 4-hydroxytamoxifen and endoxifen, that contribute substantially to pharmacological activity.

Oral Tamoxifen Citrate → Gastrointestinal Absorption → Active Metabolite Formation → Estrogen Receptor Modulation

Tamoxifen citrate is not an anabolic-androgenic steroid or an aromatase inhibitor. It does not eliminate estrogen production and may exert estrogen-antagonist or partial-agonist effects according to tissue and physiological context.

MECHANISM OF ACTION

The primary mechanism involves:

- Disintegration and dissolution of the oral tablet
- Gastrointestinal absorption of active tamoxifen citrate
- Hepatic metabolism through CYP3A4, CYP2D6, and related pathways
- Binding of tamoxifen and active metabolites to estrogen receptors
- Reduced estrogen-dependent transcription in breast tissue
- Tissue-selective partial agonist effects outside breast tissue
- Slow elimination of parent drug and metabolites

Tamoxifen citrate modifies estrogen-receptor signaling; it does not directly inhibit estrogen synthesis or immediately remove estrogen already present in circulation.

PHARMACODYNAMICS

- Competitive binding to estrogen receptors
- Reduced estrogen signaling in breast tissue
- Tissue-selective partial agonist activity
- Hypothalamic-pituitary-gonadal feedback
- Bone and mineral metabolism
- Lipid, coagulation, and cardiovascular physiology
- Reproductive and endometrial function
- Secondary estrogen-responsive effects

ESTROGEN BIOSYNTHESIS

Tamoxifen citrate does not directly suppress estrogen biosynthesis but may influence the response to circulating estrogen through:

- Competitive estrogen-receptor occupancy
- Reduced estrogen-dependent signaling in breast tissue
- Tissue-selective agonist and antagonist activity
- Modification of estrogen-responsive gene transcription
- Effects of active metabolites such as endoxifen
- Endocrine feedback mechanisms

The magnitude of receptor modulation depends on dose, adherence, metabolic capacity, concurrent therapy, hormonal status, health, and individual physiology.

SKELETAL SYSTEM

Tamoxifen has tissue-selective effects on skeletal physiology and may influence:

- Bone remodeling

- Bone mineral density
- Menopausal-status-dependent skeletal response
- Calcium and mineral metabolism
- Long-term skeletal integrity

Tamoxifen may help preserve bone density in some postmenopausal settings, while skeletal responses can differ before menopause. Individual bone-health assessment may be appropriate.

CARDIOVASCULAR AND METABOLIC SYSTEM

Tamoxifen and its metabolites may influence cardiovascular and metabolic physiology through:

- Venous thromboembolic risk
- Stroke and vascular-event risk
- Lipid-profile and triglyceride changes
- Coagulation and platelet-related pathways
- Interaction with underlying cardiovascular risk

Clinical significance depends on baseline health, treatment duration, concurrent medicines, smoking status, mobility, hormonal status, and individual response.

REPRODUCTIVE SYSTEM

Tamoxifen citrate modulates estrogen receptors and may influence:

- Menstrual and ovarian function
- Fertility and reproductive hormones
- Sexual function
- Breast, endometrial, and uterine tissues
- Male reproductive and endocrine function
- Other estrogen-responsive tissues
- Hypothalamic-pituitary-gonadal feedback

Use during pregnancy can cause fetal harm. Menstrual changes do not reliably indicate infertility, and effective nonhormonal contraception may be required according to official labeling and specialist advice.

PHARMACOKINETICS

Following oral administration, tamoxifen citrate is absorbed from the gastrointestinal tract. Exposure depends on tablet dissolution, gastrointestinal physiology, hepatic function, concurrent substances, metabolic genotype, and adherence.

Tamoxifen undergoes extensive hepatic metabolism, including pathways involving CYP3A4, CYP2D6, CYP2C9, and CYP2C19. Active metabolites such as endoxifen and 4-hydroxytamoxifen contribute to receptor modulation.

The parent compound and metabolites persist for prolonged periods and are eliminated mainly through fecal pathways. Strong metabolic inhibitors or inducers may alter active-metabolite exposure.

The complete pharmacokinetic profile of this fictional 20 mg tablet depends on the validated formulation and has not been established through independent product-specific clinical studies.

PHYSIOLOGICAL EFFECTS

Through tissue-selective estrogen-receptor modulation, tamoxifen citrate may influence estrogen-dependent breast tissue, endometrium, bone metabolism, lipid parameters, coagulation, reproductive physiology, thermoregulation, and mood.

Its effects differ from aromatase inhibitors because receptor modulation changes the response to estrogen rather than globally reducing estrogen production throughout the body.

Inappropriate or excessive exposure can produce clinically significant adverse effects, including thromboembolic events, uterine changes, vasomotor symptoms, reproductive effects, hepatic abnormalities, and visual disturbances.

CLINICAL APPLICATIONS

Approved tamoxifen products are used in selected patients for hormone-receptor-positive breast cancer, including adjuvant and metastatic treatment, and for risk reduction in specific high-risk or ductal carcinoma in situ settings.

Clinical use requires an exact approved product, confirmed indication, contraindication review, pregnancy assessment, interaction evaluation, and appropriate medical and laboratory monitoring.

The displayed 20 mg tablet is a fictional NEXON catalog item and should not be interpreted as an independently approved medicinal product.

SAFETY CONSIDERATIONS

Tamoxifen exposure requires consideration of thromboembolic, cardiovascular, uterine, hepatic, ocular, endocrine, reproductive, metabolic, neurological, and psychological health.

Important safety considerations include:

- Venous thromboembolism and pulmonary embolism risk
- Stroke and cardiovascular health
- Uterine and endometrial changes
- Liver function and triglycerides
- Visual symptoms and ocular health
- Menopausal and endocrine status
- Reproductive function and pregnancy risk
- Tumor response and possible early flare phenomena
- Oral formulation tolerability
- Medication, anticoagulant, and metabolic interactions
- The safety profile depends on dose, indication, formulation, duration, individual response, underlying health conditions, and concurrent therapy. Medical supervision is essential whenever tamoxifen citrate is prescribed.

Unsupervised use to manipulate estrogen signaling can cause serious harm and does not provide a reliable substitute for clinical assessment, interaction review, or laboratory-guided treatment.

POTENTIAL ADVERSE EFFECTS

Potential adverse effects may involve vasomotor, thromboembolic, cardiovascular, uterine, reproductive, hepatic, ocular, gastrointestinal, dermatological, neurological, and psychological systems.

Endocrine and Vasomotor Effects

- Hot flushes
- Changes in estrogen-receptor signaling
- Alterations in reproductive hormone balance
- Menstrual irregularity or ovarian-function changes
- Vaginal discharge, dryness, or bleeding
- Changes in sexual function

Cardiovascular and Metabolic Effects

- Venous thrombosis or pulmonary embolism
- Stroke or other vascular events
- Cardiovascular events in susceptible individuals
- Changes in lipid profile or triglycerides
- Fluid retention or leg cramps

Skeletal and Musculoskeletal Effects

- Bone or musculoskeletal discomfort
- Menopausal-status-dependent bone effects
- Arthralgia or joint stiffness
- Tumor flare or hypercalcemia in susceptible patients

Dermatological Effects

- Rash
- Pruritus
- Hair thinning
- Rare severe skin reactions
- Hypersensitivity reactions

Reproductive Effects

- Potential fetal harm
- Changes in fertility or menstrual function
- Endometrial hyperplasia, polyps, or uterine changes
- Increased risk of endometrial cancer or uterine sarcoma
- Changes in libido or sexual function

Hepatic and Neurological Effects

- Changes in liver-function parameters
- Rare fatty liver, hepatitis, or clinically significant injury
- Headache, dizziness, or fatigue
- Mood or sleep changes

- Visual disturbance, cataract, or retinal effects

Oral Formulation Related Effects

- Gastrointestinal discomfort
- Nausea or appetite changes
- Hypersensitivity to tamoxifen citrate or excipients
- Tablet intolerance related to formulation ingredients
- Medication errors involving tablet strength or frequency

The occurrence and severity of adverse effects vary according to indication, exposure, duration, individual response, underlying health conditions, and concurrent medications.

CONTRAINDICATIONS

Condition	Reason
Known Hypersensitivity	Risk of allergic reaction to tamoxifen citrate or excipients
Pregnancy	Potential fetal harm and pregnancy loss
Breastfeeding	Potential infant exposure and serious adverse reactions
Concurrent Coumarin Anticoagulant in Risk Reduction	Official labeling may contraindicate this combination
History of DVT or Pulmonary Embolism in Risk Reduction	Elevated risk of recurrent thromboembolic events
Unexplained Vaginal Bleeding	Requires clinical assessment before or during therapy
Severe Uncontrolled Thromboembolic Risk	Requires individualized specialist benefit-risk assessment
Incompatible Concomitant Therapy	Potential loss of efficacy or increased toxicity

DRUG INTERACTIONS

Potential interactions or important clinical considerations may exist with:

- Coumarin-type anticoagulants such as warfarin
- Strong CYP2D6 inhibitors
- Strong CYP3A4 or other enzyme inducers
- Estrogen-containing hormonal therapies
- Cytotoxic anticancer therapies
- Other endocrine or estrogen-receptor therapies
- Medicines affecting coagulation or platelet function
- Drugs affecting hepatic metabolism
- Laboratory tests influenced by hormonal status

Anticoagulants may require close monitoring, while strong CYP2D6 inhibitors may reduce formation of active endoxifen. Interaction significance depends on the medicine, indication, health condition, and individual response.

LABORATORY MONITORING

Laboratory Test	Purpose
Pregnancy Testing	Exclude pregnancy when clinically relevant
CBC	General hematological assessment during systemic therapy
ALT / AST	Liver-function assessment
Lipid Profile / Triglycerides	Metabolic and cardiovascular-risk assessment
Coagulation / INR	Monitor clinically relevant anticoagulant interactions
Clinical Thromboembolic Review	Assess symptoms and risk factors for DVT, PE, or stroke
Gynecological Assessment	Evaluate abnormal bleeding or uterine symptoms
Ophthalmic Assessment	Evaluate visual symptoms or ocular effects
Calcium	Assess hypercalcemia when clinically indicated
Medication Interaction Review	Assess CYP2D6, CYP3A4, anticoagulant, and hormonal interactions
Clinical Response Review	Monitor disease response, tolerability, and treatment adherence

STORAGE AND STABILITY

- Store according to official product labeling.
- Protect from excessive heat, moisture, and direct sunlight.
- Keep the container tightly closed.
- Maintain original packaging integrity.
- Keep away from children.
- Inspect tablets and packaging before use.
- Do not use if the packaging is damaged or tablets show unexpected discoloration or deterioration.
- Storage requirements depend on the validated tablet formulation.

PRODUCT AUTHENTICITY

Every genuine NEXON product should include appropriate quality-verification features.

- Batch-number tracking
- Manufacturing information
- Expiration-date verification
- QR authentication system

- Tamper-evident packaging
- Authorized-distribution verification

NEXON emphasizes transparency, traceability, and product-quality control.

FREQUENTLY ASKED QUESTIONS

What is Tamoxifen Citrate 20 mg?

It is a fictional oral tablet presentation supplying tamoxifen citrate equivalent to 20 mg of tamoxifen per tablet.

What class of medicine is tamoxifen citrate?

It is a nonsteroidal selective estrogen receptor modulator used in selected estrogen-dependent clinical settings.

What does 20 mg represent?

It is the labeled equivalent amount of tamoxifen supplied by the citrate salt in each tablet.

Is tamoxifen citrate an anabolic steroid?

No. It is a selective estrogen receptor modulator, not an anabolic-androgenic steroid.

Is tamoxifen citrate an aromatase inhibitor?

No. It modulates estrogen receptors rather than inhibiting estrogen synthesis.

Is it oral or injectable?

This product is presented as an oral tablet.

Does tamoxifen citrate eliminate all estrogen?

No. It changes receptor signaling in a tissue-selective manner and does not eliminate estrogen production.

Can tamoxifen citrate cause serious adverse effects?

Yes. Important risks can include thromboembolic events, stroke, uterine malignancy, hepatic effects, and visual changes.

Does tamoxifen citrate require medical supervision?

Yes. Appropriate indication, contraindication review, interaction assessment, monitoring, and clinician-directed dosing are important.

Is this specific NEXON 20 mg formulation FDA approved?

No. The displayed 20 mg tablet is a fictional catalog item and is not presented as an independently FDA-approved medicine.

NEXON QUALITY COMMITMENT

NEXON is committed to maintaining high standards of manufacturing quality, product consistency, traceability, and scientific transparency.

Through quality-control systems, authentication procedures, and responsible information sharing, NEXON aims to provide reliable pharmaceutical products and educational resources for healthcare professionals and informed users.

SCIENTIFIC REFERENCES

- U.S. Food and Drug Administration. NOLVADEX Tamoxifen Citrate Tablets Prescribing Information.
- DailyMed. Tamoxifen Citrate Tablets Official Drug Label.
- National Cancer Institute. Tamoxifen Citrate Drug Information.
- National Cancer Institute. Hormone Therapy for Breast Cancer.
- Davies C, et al. Long-Term Effects of Continuing Adjuvant Tamoxifen to 10 Years.
- Early Breast Cancer Trialists' Collaborative Group. Tamoxifen Treatment Meta-Analysis.
- Fisher B, et al. Tamoxifen for Prevention of Breast Cancer in High-Risk Women.
- Cuzick J, et al. Long-Term Follow-Up of the IBIS-I Tamoxifen Prevention Trial.
- Jordan VC. Molecular Mechanisms of Tamoxifen Action in Breast Cancer.
- Goetz MP, et al. Tamoxifen Pharmacogenomics and CYP2D6 Metabolism.
- National Comprehensive Cancer Network. Breast Cancer Clinical Practice Guidelines.
- National Comprehensive Cancer Network. Breast Cancer Risk Reduction Guidelines.