

# Lasofoxifene

**Lasofoxifene** (INN) (brand name **Fablyn**) is a non-steroidal selective estrogen receptor modulator (SERM) which is marketed by Pfizer for the prevention and treatment of osteoporosis and for the treatment of vaginal atrophy,<sup>[1]</sup> and the result of an exclusive research collaboration with Ligand Pharmaceuticals (LGND). It also appears to have had a statistically significant effect of reducing breast cancer in women according to a study published in The Journal of the National Cancer Institute.

## 1 Indications

### 1.1 Osteoporosis

In postmenopausal women with osteoporosis, lasofoxifene at a dose of 0.5 mg per day was associated with reduced risks of nonvertebral and vertebral fractures, ER-positive breast cancer, coronary heart disease, and stroke but an increased risk of venous thromboembolic events.<sup>[2][3]</sup>

### 1.2 Breast cancer prevention

In studies of breast cancer prevention, lasofoxifene showed a 79% reduction in breast cancer incidence and an 83% reduction specific incidence of estrogen receptor-positive breast cancers, which is significantly higher than reductions found with the related SERMs tamoxifen and raloxifene.<sup>[4]</sup> In accordance, a meta-analysis of SERMs for breast cancer prevention found the highest reduction in risk with lasofoxifene of all the drugs.<sup>[5]</sup> The reduction was even greater than that observed with aromatase inhibitors, which have generally been found to confer a greater risk reduction than SERMs.<sup>[5]</sup>

## 2 Pharmacology

Lasofoxifene selectively binds to both ER $\alpha$  and ER $\beta$  with high affinity.<sup>[6]</sup> Its IC<sub>50</sub> for ER $\alpha$  (1.5 nM) is similar to that of estradiol (4.8 nM) and is at least 10-fold higher than those of tamoxifen and raloxifene.<sup>[2]</sup> Raloxifene also has remarkably improved oral bioavailability relative to tamoxifen and raloxifene, and this may also be involved in its greater potency.<sup>[7]</sup>

## 3 Chemistry

Lasofoxifene is a naphthalene derivative<sup>[6]</sup> and a desmethyl dihydro analogue of nafoxidine.<sup>[8]</sup>

## 4 History

In September 2005, Pfizer received a non-approvable letter from the U.S. Food and Drug Administration regarding lasofoxifene (trade name Oporia), a selective estrogen receptor modulator for the prevention of osteoporosis.

On January 2008, Ligand Pharmaceuticals, through its marketing partner, Pfizer, submitted a New Drug Application for lasofoxifene, which is expected to be marketed under the tradename Fablyn. Lasofoxifene was approved in the EU under the brand name Fablyn by the EMEA in March 2009.<sup>[9]</sup>

## 5 References

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- [9] "Fablyn - lasofloxifene". European Medicines Agency. 7 August 2009. Archived from the original on 13 April 2010.

## 6 External links

- "Reference site for lasofloxifene information". Anakena Internet Services SL. Retrieved 2008-03-18.

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