A NEW COMPOUND AROMATASE INHIBITOR TO TREAT ESTROGEN DEPENDENT BREAST CANCER AND OTHER ESTROGEN DEPENDENT DISEASES – 7BETA-METHYLANDROST-4-ENE-3,17-DIONE

KEYWORDS: AROMATASE INHIBITOR, STEROID, BREAST CANCER, ESTROGEN-DEPENDENCE

STATE OF THE ART

The invention provides a new potent steroidal aromatase inhibitor (AI), 7-beta-methylandrost-4-ene-3,17-dione with potential value for the treatment of estrogen-dependent (ER-positive/HER2-negative) breast cancer, luminal A subtype, and other estrogen dependent diseases.

Steroidal AIs are more selective, highly enzyme specific and less toxic due to it is structural similarity with the natural aromatase substrate, androstenedione. The discovery of this new AI can increase the number of therapeutic options for the management of hormone-dependent breast cancer as well as other diseases dependent on estrogens for their development such as uterine and ovarian cancers.

The AI proposed in this invention presents advantages in comparison with the steroidal reference AI Exemestane, since it presents higher anti-aromatase activity and anti-proliferative effects in estrogen-dependent breast cancer cells (MCF-7aro cells). The discovery of this new AI may also contribute to the overcoming of the acquired resistance, a serious drawback associated with the prolonged use of AIs.

ADVANTAGES

- Steroidal compound
- Strong aromatase inhibition in microsomes, higher than exemestane, the AI in clinical use;
- Strong aromatase inhibition in MCF-7Aro cells, higher than exemestane, the AI in clinical use;
- Non-toxic on fibroblasts non-tumoral cells and breast epithelial non-tumoral cells;
- High anti-proliferative effects in breast cancer cells (MCF-7aro cells).

STAGE OF DEVELOPMENT

TRL 3

IPR LEGAL STATUS

PCT/IB2023/057157

OWNERSHIP

The rights to the technology are held by the University of Coimbra and University of Porto.

COLLABORATION SOUGHT

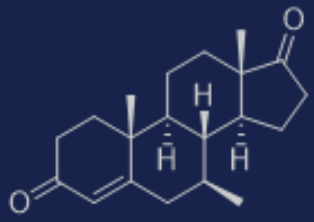
Licensing for further developments or R&D partnership.

VALUE PROPOSITION

A new aromatase inhibitor for estrogen-dependent cancer treatment

APPLICATIONS

- Treatment of ER-positive/HER2-negative breast cancer alone or in combination with cyclin-dependent kinase (CDK) inhibitors;
- Treatment of other estrogen-dependent diseases.



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