


Search for abstract title, authors etc. 

EP650

[◀ Prev](#) [Next ▶](#) [^ Section](#) [^ Contents](#) [Cite](#)

Endocrine Abstracts (2025) **110** EP650 | DOI: [10.1530/endoabs.110.EP650](https://doi.org/10.1530/endoabs.110.EP650)

[^ ECEESPE2025](#) > [ePoster Presentations](#) > [Endocrine Related Cancer](#) (100 abstracts)

Effects of osilodrostat and metyrapone on 2D and 3D models of adrenocortical carcinoma cell lines viability: preliminary results

[Mattia Biondo](#)¹, [Laura Tomasello](#)², [Giuseppe Pizzolanti](#)^{2,3}, [Giorgio Arnaldi](#)² & [Valentina Guarnotta](#)²



Author affiliations

JOINT1345

the patients display symptoms of hormonal excess. Mitotane is a treatment option as an adjuvant therapy after surgery or for unresectable/advanced ACC, also combined in a platinum-based therapy. It is an adrenolytic drug that affects adrenal steroidogenesis and interferes with mitochondrial function reducing cell viability. Other therapeutics are used to relieve the symptoms of ACC with hypercortisolism, such as metyrapone and osilodrostat, both steroidogenesis inhibitors. Specifically, osilodrostat is a drug that inhibits adrenal 11 β -hydroxylase and blocks aldosterone synthase, which are enzymes acting in the final step of cortisol and aldosterone synthesis. The main objective of this research consists of the comparison of effects of mitotane, metyrapone and osilodrostat on adrenocortical carcinoma cell lines, such as SW-13 and NCI-H295R: the first is a non-secreting cell line, the second is a glucocorticoids-, mineralocorticoids-, and adrenal androgen-secreting line, often used as a model in experiments on human steroidogenesis. While the effects of metyrapone and osilodrostat on ACC hypercortisolism have been proven in the last few years, there is no specific data about their effects on tumoral cells viability and how they can influence them. In this view, a study involving both cell lines could be an effective method to assess valuable information from an *in vitro* model. Both for SW-13 and NCI-H295R cells, the experiments were performed with 2D cultures and then 3D models (e.g. spheroids) to reproduce the complex structure of an *in vivo* environment. The cultures were treated with different concentrations of mitotane, metyrapone and osilodrostat. Moreover, a combination of mitotane and osilodrostat and of mitotane and metyrapone were tested on ACC cell cultures. 2D models were cultured in DMEM-F12 medium supplemented with 10% of fetal bovine serum (SW13 cells) or with DMEM-F12 medium supplemented with 2.5% of Nu-Serum and ITS+ Premix supplement (NCI-H295R). Cell viability was assessed with MTS assay. 3D models were obtained using specific microwell plates to be evaluated via a physical cytometer establishing information about spheroids features and indirectly to cell death extent. Although the study is currently in a preliminary phase, we evaluated changes in cell viability and in steroidogenesis in 2D models. The next step will consist of a deeper characterization and evaluation of 3D models.

Volume 110



Joint Congress of the European Society for
Paediatric Endocrinology (ESPE) and the European

Society of Endocrinology (ESE) 2025: Connecting Endocrinology Across the Life Course

[European Society of Endocrinology](#) 

[European Society for Paediatric Endocrinology](#) 

[Browse other volumes](#)

[Summary](#)

[Abstracts](#)

[Abstract Book](#)

[Volume Editors](#)

Article tools

[Seleziona lingua](#) | ▼ | [Disclaimer](#)

My recent searches

No recent searches

My recently viewed abstracts

[Effects of osilodrostat and metyrapone on 2D and 3D models of adrenocortical carcinoma cell lines viability: preliminary results \(<1 min ago\)](#)

Authors

Biondo Mattia

Tomasello Laura

Pizzolanti Giuseppe

Arnaldi Giorgio

Guarnotta Valentina

Endocrine Abstracts

ISSN 1470-3947 (print) | ISSN 1479-6848 (online)

© Bioscientifica 2025 | [Privacy policy](#) | [Cookie settings](#)

BiosciAbstracts

Bioscientifica Abstracts is the gateway to a series of products that provide a permanent, citable record of abstracts for biomedical and life science conferences.

[Find out more](#)