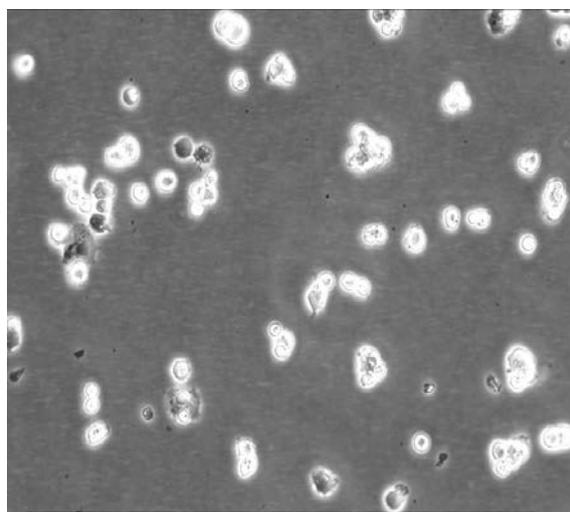


Cell line profile

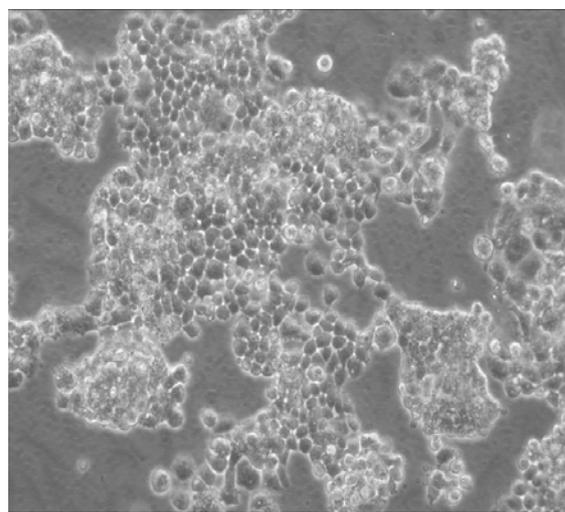
COV434 (ECACC catalogue no. [07071909](#))

Cell line history

The immortalised granulosa cell line COV434 was isolated from a primary granulosa cell tumour of a 27 year old female suffering from a metastatic granulosa cell carcinoma. It is considered to be the first, and still one of the very few existing cell lines to display several properties considered essential for normal human granulosa cell function. It is now widely used in the investigation of human granulosa cells, most specifically in juvenile and adult ovarian cancer research.



COV434 cells 24 hours after seeding



COV434 cells after four days in culture

Key characteristics

The COV434 cell line retains many characteristics and properties owned by natural granulosa cells, such as diploidy, growth in small follicle-like aggregates and formation of intercellular gap junctions when co-cultured with native cumulus cells. An increase in 17 β oestradiol secretion and elevated proliferation in response to FSH stimulation can be observed with this cell line, which confirms the presence of intact FSH receptors, a feature highly specific to human granulosa cells. Other biological characteristics include the absence of the LH receptor, no luteinisation capability, and the presence of specific molecular markers of apoptosis enabling the induction of follicular atresia.

Applications

This cell line is a precious tool for *in vitro* studies of ovarian function because of the restricted availability and very short life span of primary granulosa cells. It also has the advantage to exhibit physiological responses similar to primary cells. Although they originate from a metastatic tumour, the cells still possess certain morphological and physiological characteristics of normal granulosa cells, which make them a good cell model for both normal and pathological conditions. It has been used in various studies trying to uncover the

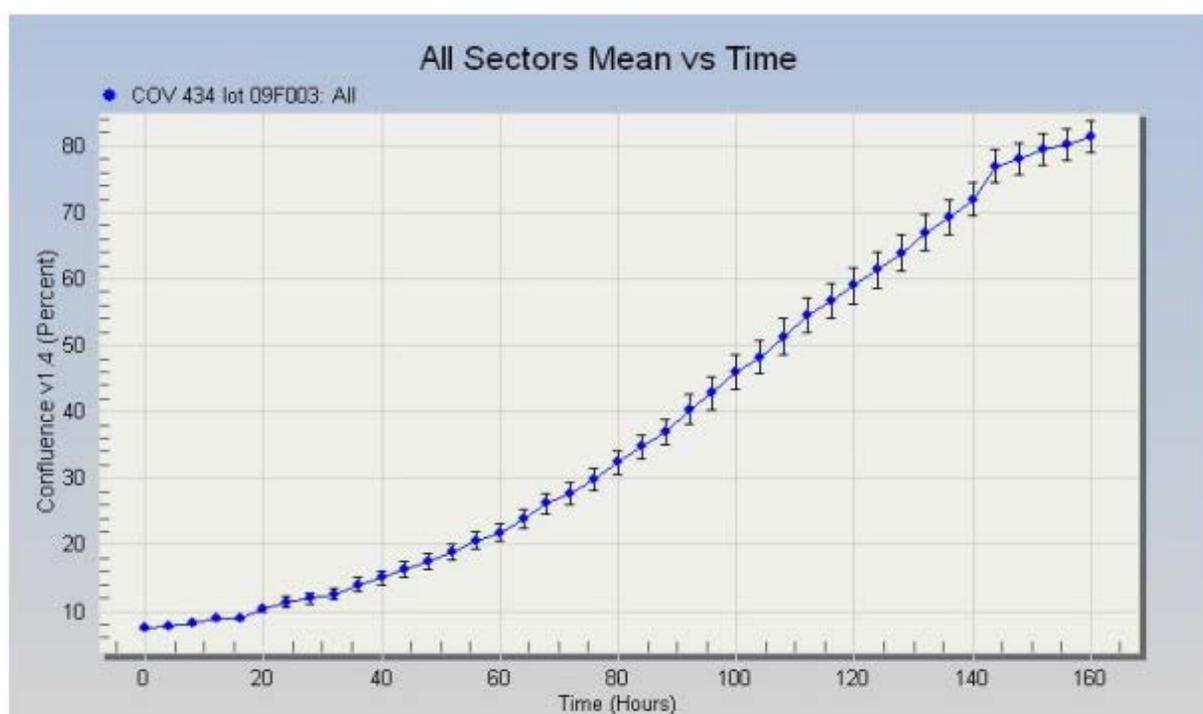
molecular pathways that govern granulosa cells tumour growth, in cytotoxicity assays using chemotherapy drugs and in finding targets for new drug therapies.

Culture tips

Cells grow in DMEM + 2mM Glutamine + 10% FBS and are normally seeded at a density of 2×10^4 cells/cm². Dilution should not exceed 1:5, as they are growing slowly, taking at least one week to reach maximum density at minimum dilution. As the COV434 cell line grows in clusters, it will never fully cover the culture surface and only reach about 80% confluence.

Related cell lines	ECACC catalogue number	Description
COV318	07071903	Human ovarian epithelial-serous carcinoma, peritoneal ascites
COV362	07071910	Human ovarian epithelial-endometroid carcinoma
COV362.4	07071904	Human ovarian epithelial-endometroid carcinoma, pleural effusion
COV413A	07071905	Human ovarian epithelial-serous carcinoma, sigmoid
COV413B	07071906	Human ovarian epithelial-serous carcinoma, bladder dome
COV434	07071909	Human ovarian granulosa tumour
COV504	07071902	Human ovarian epithelial-serous carcinoma, pleural effusion
COV644	07071908	Human ovarian epithelial-mucinous carcinoma, primary tumour

Growth profile



Key references

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