

The Ovarian Cancer Action  
Research Centre



## Beating ovarian cancer through collaborative research

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Ovarian Cancer Action is the UK's leading ovarian cancer charity, funding research and raising awareness of the disease. The organisation was founded in 2005 by Allyson Kaye to promote awareness of ovarian cancer. In 2006 we established the UK's first and only dedicated ovarian cancer research centre at Imperial College London, to focus research efforts and channel

funding into defeating ovarian cancer. By 2015 more than £6.5 million has been invested in research.

The Ovarian Cancer Action Research Centre is focussed on substantial clinical benefits for patients. All efforts are translational and are directly relevant to helping improve women's chances of surviving ovarian cancer.



We now know that a single unifying treatment for all types of ovarian cancer is unlikely to succeed. A multi-faceted approach, bringing together the insights of many leading scientists in the field, is needed to understand the intricacies of this complex and

challenging disease. The Ovarian Cancer Action Research Centre is a collaborative hub where ideas can converge and numerous projects come together which contribute to improved and tangible benefits for women with ovarian cancer.

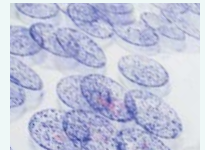


- 4** The work is taken back to patients in the clinic through clinical trials and studies. It is these trials that allow women to access innovative and progressive treatments for ovarian cancer.



- 3** This information is used in the laboratory alongside other tools to answer the challenging questions surrounding ovarian cancer and to develop new treatments.

- 1** Samples are donated in the clinic by women undergoing treatment.



- 2** Data taken from these samples informs the research already taking place in the Research Centre and allows scientists to develop new questions and hypotheses about a problem.



## Why action is needed

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At Ovarian Cancer Action our vision is to stop women dying of ovarian cancer. Pioneering, intelligent and creative research is a critical part of this vision. Good quality therapies that will permanently control the disease need to be found, and treatments that offer a better quality of life and a reduction of side effects are of paramount importance. Despite the prevalence and high mortality rates of ovarian cancer, the cause receives less than 10% of the total cancer research spend in the UK. More research is vital and at Ovarian Cancer Action, we're committed to making that happen.

As well as the work of the Research Centre, Ovarian Cancer Action also funds BriTROC, the UK Translational Research Ovarian Cancer Collaborative, which is addressing important questions in ovarian cancer research. Biopsies are collected from women with relapsed ovarian cancer at fourteen leading UK cancer centres across the country. In the first BriTROC project, the samples are being analysed by researchers to identify and understand genetic changes that occur as cancer recurs, with the ultimate goal of understanding why ovarian cancer so often becomes resistant to platinum-based chemotherapy.

Chemotherapy resistance is a serious challenge in treating ovarian cancer. In addition to BriTROC we fund the work of Professor Ahmed Ashour Ahmed in this field. Professor Ahmed's research at Oxford University focuses on investigating the molecular mechanisms driving ovarian cancer cell growth in order to address the problem of ovarian tumour resistance to chemotherapy. This will drive the development of new targeted drug treatments that are tailored to individual patients.

Ovarian cancer is a global disease and we fight it in collaboration with other world-class institutions. The Ovarian Cancer Action Research Centre, BriTROC and Professor Ahmed's work position the UK as a leading international contributor in the fight against ovarian cancer. The Research Centre also works with internationally recognised institutions such as the MD Anderson Cancer Center in Houston and the Peter MacCallum Cancer Centre in Melbourne.



# Projects and achievements

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## Platinum resistance

Platinum-based chemotherapy is currently the most effective treatment for ovarian cancer, but it often stops working when the cancer recurs. Recurrence is very common, with between 70% and 90% of late stage high grade ovarian cancer cases returning. The recurrent disease becomes treatment resistant with repeated rounds of chemotherapy.

The Ovarian Cancer Action Research Centre team is investigating why this happens and how it can be reversed.

The team has worked with a leading pharmaceutical company on a successful clinical trial in which a new drug treatment, given in conjunction with chemotherapy, inhibits the growth of chemo-resistant tumour cells and the results are promising.



“Almost every woman who dies from ovarian cancer does so because the available treatment options once platinum resistance occurs are simply not good enough. Investigating this resistance is critical to understanding the behaviour of ovarian cancer and how it can be treated. This will make a fundamental difference to advances in the treatment of ovarian cancer.”

**Dr Euan Stronach**, Team leader, Molecular Therapy Group



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## Tumour suppressors

The protein OPCML acts to suppress tumours in ovarian cancer. Initial results show that when OPCML is applied to the cancer cell it reduces and endeavours to stop the tumour growth. The team is studying an

innovative method of delivering a potential OPCML-based ovarian cancer therapy, and is continuing to investigate the mechanisms of action of OPCML and other proteins in the same family.

“When ovarian cancer takes hold the genes in individual cells that control OPCML are disrupted. We need to know why this happens and how we can harness this knowledge to develop treatments for ovarian cancer that are based on restoration of tumour suppressors such as OPCML.”

**Professor Hani Gabra**, Director, OCA Research Centre,  
Team Leader, Tumour Suppressor Group



## Alfapump®

Many ovarian cancer patients suffer from ascites (fluid in the abdomen). The Research Centre has worked with Sequana Medical to test a pump system for ovarian cancer patients to flush out ascites from the abdomen

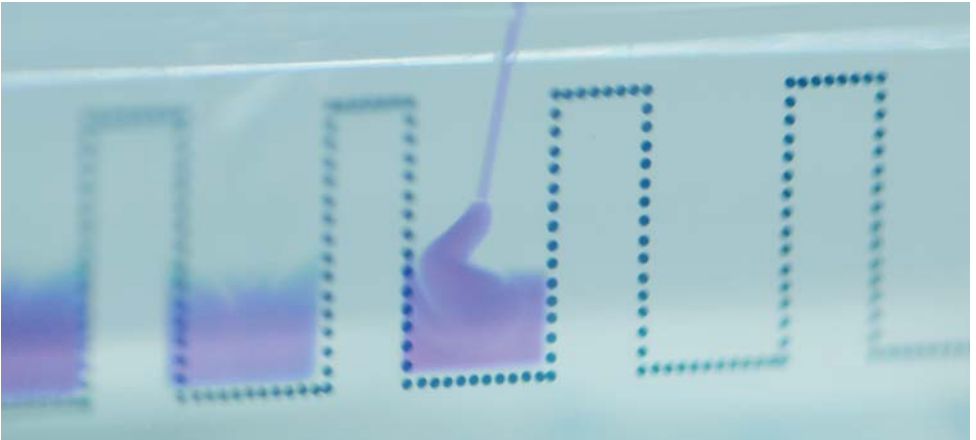
to the bladder, avoiding the need for patients to be admitted for regular ascites drainage. The world's first ovarian cancer patient was fitted with an Alfapump® at the Ovarian Cancer Action Research Centre.

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## LARP1

LARP1 is a protein which has been found to be at significantly higher levels in ovarian cancer patients. Research is taking place into the activity of this protein and whether it can be a target for treating ovarian cancer.

The team has identified DNA sequences which specifically reduce LARP1 expression and correlate with reduced cell growth of platinum-sensitive tumour cell lines, which could lead to a therapeutic treatment in the future.



## Epigenetics

Cancer develops when alterations occur in proteins in the body, such as changes in the amount of proteins made by a cell. Cells can regulate whether or not a gene produces a protein via chemical modifications on or around the gene. The study of these chemical modifications is known as Epigenetics. When abnormal epigenetic patterns occur protein levels

can become disrupted, the delicate balance of a cell may be affected and cancer can develop. The Epigenetics team is developing compounds based on inhibiting the production of a protein, EZH2, which is involved in the maintenance of a population of cells known as ovarian tumour sustaining cells.

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## Pioneering surgery

Surgery is a vital weapon in tackling ovarian cancer but, in spite of this, innovative surgical approaches have not been pioneered. There are important opportunities around

personalised surgery that help determine a patient's individual prognosis, working with the latest expertise in bio-engineering and nanotechnology.

By taking a multi-disciplinary approach, and working with our bio-engineering colleagues at Imperial College, we will be able to collect real-time data that measures the bio-electrical properties of tumours. This gives us a better understanding of the behaviour and aggressiveness of the disease in individual patients.

**Professor Christina Fotopoulou,**  
Consultant Gynaecological Oncologist



## Survivorship

The overall aim of Ovarian Cancer Action is to improve outcomes for patients and this goes beyond clinical intervention. The Research Centre is conducting

ongoing work into 'survivorship', which looks at how living with ovarian cancer affects quality of life and how arising issues can be addressed.

"Whilst science will change the future, OCA is an organisation grounded by the need to make a woman and her family's experience of cancer one that maintains life as close to normal as possible. In funding science we are always aware that a woman with cancer is central to this support.

**Allyson Kaye,** Founder and Chair, Ovarian Cancer Action





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## Tribute Wall

At the heart of the Ovarian Cancer Action Research Centre is our Tribute Wall. The wall is a tribute to women living with the disease and a place of remembrance for those who have lost loved ones to ovarian cancer. It is a powerful reminder of the urgency of the research and the need to do more.

Each year families of loved ones touched by ovarian cancer attend the Research Centre to meet our scientists and visit the Tribute Wall. This gives our supporters the unique chance to see tangible evidence that their gifts are going toward targeted and effective research.



“The presentation and tour of the Ovarian Cancer Action Research Centre were fascinating and the Tribute Wall is a most tasteful dedication. Director Hani Gabra and his team deserve great credit for their wonderful work, as do the fundraising team. It will soon be three years since I lost my wonderful wife, and it’s good to know that the future holds hope for other women in the same situation.”

**George Watson**, Ovarian Cancer Action supporter

“Our scientists are driven by the need to do more. They are passionate in their work to find a cure. They are dedicated to changing the outlook for women with the disease and driven to do it quickly. They share our impatience for change and are all leaders in their field. We are privileged to work with them on this journey.”

**Allyson Kaye**, Founder and Chair, Ovarian Cancer Action



“The Ovarian Cancer Action Research Centre has made impressive progress with the strong leadership of Professor Gabra. The project is ambitious and the proposal is innovative and insightful. This is important work and if it can be achieved, this is the team which will do it.”

**Quinquennial scientific review of the Ovarian Cancer Action Research Centre**

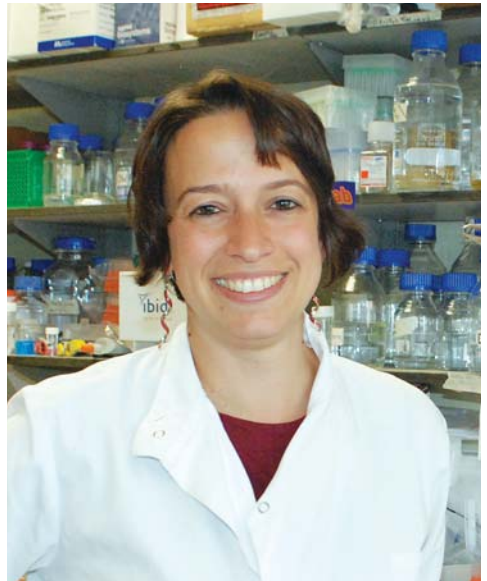
overseen by the Medical Science Review Committee,  
led by Professor Robert C. Bast, Jr., of MD Anderson Cancer Center, Houston.

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## **Ovarian Cancer Action strives to stop women dying from ovarian cancer.**

**We fund world-class scientific research leading to innovative treatments.**

Ovarian Cancer Action campaigns to ensure women and healthcare providers know the risk factors, symptoms and treatment options to enable informed and rapid action. Fundamentally, we demand that every woman should have the best treatment available.



**Please help our scientists continue with this work.**  
**[ovarian.org.uk/ocarc](https://ovarian.org.uk/ocarc)**

The charity's work is made possible entirely through voluntary donations. We rely on the generosity of our supporters to help us fund world-class scientific research. If you would like to add your name or the name of a loved one to our Tribute Wall please contact [fundraising@ovarian.org.uk](mailto:fundraising@ovarian.org.uk).

**Giving to Ovarian Cancer Action will directly impact our work and help further understanding of ovarian cancer.**

**To find out more about giving to Ovarian Cancer Action or to get involved in our fundraising events, visit [ovarian.org.uk/fundraising](https://ovarian.org.uk/fundraising), call 020 7380 1730 or email [fundraising@ovarian.org.uk](mailto:fundraising@ovarian.org.uk).**

## Our publications

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- **Ovarian cancer** – what you need to know
- **Symptoms you shouldn't ignore**
- **Symptoms diary**
- **Diagnosing ovarian cancer** – what you need to know
- **Treating ovarian cancer** – what you need to know
- **Hereditary ovarian cancer** – what you need to know
- **A younger woman's guide to ovarian cancer** – information on treatment, relationships, fertility and facing an early menopause
- **Ovarian Cancer Action** – about us
- **The Ovarian Cancer Action Research Centre**
- **BriTROC** – help us find out why ovarian cancer recurs

## You can contact Ovarian Cancer Action for further information:

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(information helpline)

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### or write to

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