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## **Institut Curie Study Published in a Nature Journal Reporting Excellent Outcomes of Ibex's AI Solution for Breast Cancer Detection**

*The Study, conducted at Institut Curie and Maccabi Healthcare Services, demonstrated very high accuracy for Ibex AI in detecting breast cancer across wide variety of subtypes, including rare special types of breast cancer*

TEL AVIV, Israel, and PARIS, France, December 20, 2022 -- [Ibex Medical Analytics](#) (Ibex), the leader in AI-powered cancer diagnostics, and Institut Curie, France's leading cancer center, today announced excellent outcomes in a clinical study validating and evaluating the clinical application of Ibex's Galen™ Breast. The study, conducted at Institut Curie in France and at Maccabi Healthcare Services in Israel, was published in [Nature's peer reviewed npj Breast Cancer journal](#)<sup>1</sup>.

Led by Prof. Anne Vincent-Salomon from Institut Curie and Dr. Judith Sandbank from Maccabi Healthcare Services<sup>2</sup> the study is the first to report an AI-based algorithm that can accurately detect such a wide range of clinically significant pathological features in breast biopsies. Moreover, the study reports the first-ever implementation of such an AI solution in routine clinical use in a pathology laboratory, demonstrating its clinical utility as a decision-support tool that helps pathologists reduce diagnostic error and improve diagnostic quality.

"This publication is a significant addition to the impressive body of evidence we have produced while studying Ibex's AI solution over the past few years, showing consistently high performance," said Anne Vincent-Salomon, MD, Head of the Pathology Department at Institut Curie and Professor at the University Paris-Sciences et Lettres. "We are delighted with our fruitful collaboration with Ibex, which has given Institut Curie pathologists first-hand experience with this AI tool, a platform that has undeniably proven value in their daily clinical practice, enabling us to optimize diagnoses, accelerate treatment decisions and ultimately improve care for our patients."

Breast cancer is the most common malignant disease worldwide, with over 2.2 million new cases each year<sup>3</sup>. As such, accurate and timely diagnosis is key to guiding treatment decisions by oncologists and improving patient survival rates. Over the last several years, rapid advances in personalized medicine have resulted in a growing complexity of cancer diagnosis. Coupled with the increase in overall incidence of breast cancer and a global decline in the number of pathologists, these trends have led to growing workloads imposed on pathology departments. Clearly, there is a growing need for automated solutions and decision-support tools that help pathologists detect cancer to the utmost accuracy more rapidly.

Ibex developed Galen Breast to support pathologists in the diagnosis of breast biopsies by providing insights that help detect and grade different types of invasive and non-invasive breast cancer, as well as other clinically significant pathological features. The solution's AI (Artificial Intelligence) algorithm was trained to identify more than 50 breast-specific features that may appear in breast biopsies, using advanced deep learning technologies applied on hundreds of thousands of image samples.

"I was impressed with the study outcomes, the very high accuracy levels and the breadth of detection capabilities offered by Ibex's AI technology, all at par with the performance of expert pathologists," said Stuart Schnitt, MD, Chief of Breast Oncologic Pathology at the Dana-Farber/Brigham and Women's Cancer Center and Professor of Pathology at Harvard Medical School and co-author on the study<sup>4</sup>. "It is exciting to take part in investigating and validating new innovations which are going to re-shape our practice for years to come and I look forward to see more AI applications roll out into routine clinical use as they demonstrate their clinical validity".

The study included 841 blinded whole slide images, taken from 436 breast biopsies stained with either H&E or HES and digitized using different scanning systems. The images were analyzed by Ibex's Galen Breast solution, and the AI algorithm's output was assessed against a blinded consensus diagnosis of two breast pathologists. The AI algorithm was able to identify invasive carcinoma, including multiple rare special types of breast cancer, with exceptionally high accuracy, irrespective of staining protocol and scanner type. Specifically, the algorithm accurately identified invasive lobular carcinomas from invasive carcinomas of no special type as well as rare types (metaplastic or mucinous carcinomas) and ductal *in situ* carcinoma and atypical ductal hyperplasia (DCIS and ADH), as well as differential in grading of in situ carcinomas (DCIS high/intermediate- grade versus low-grade/ADH). The algorithm also demonstrated high accuracy in identifying important prognostic factors such as tumor infiltrating lymphocytes (TILs) and angiolymphatic invasion, as well as non-cancer features such as columnar cell changes, and microcalcifications.

"We are proud of the study outcomes, which demonstrate the robustness of our breast algorithm across an unprecedented gamut of cancer types and other clinically important pathologies," said Dr. Manuela Vecsler, Director of Clinical & Scientific Affairs at Ibex Medical Analytics. "The detection of more than 50 breast features renders the AI algorithm more comprehensive, accurate, and explainable, and thus Galen Breast has the ability to support pathologists across a wider range of tasks, as attested by the increasing number of laboratories that deploy the solution in routine use."

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### **About Ibex Medical Analytics**

Ibex Medical Analytics (Ibex) is transforming cancer diagnostics with world-leading, clinical grade AI-powered solutions, empowering physicians to provide accurate, timely and personalized cancer diagnosis for every patient. Our Galen™ suite of solutions is the first and most widely deployed AI-technology in pathology and used as part of everyday routine, supporting pathologists and providers worldwide in improving the quality and accuracy of diagnosis, implementing comprehensive quality control, reducing turnaround times and boosting productivity with more efficient workflows. Ibex's Artificial Intelligence technology is built on Deep Learning algorithms trained by a team of pathologists, data scientists and software engineers. For additional company information, please visit <https://ibex-ai.com/> and follow us on [LinkedIn](#) and [Twitter](#).

The Galen™ suite of solutions is CE marked and registered with the UK MHRA. The solutions are for Research Use Only (RUO) in the United States and not cleared by the FDA. For more information, including indication for use and regulatory approval in other countries, contact Ibex Medical Analytics.

### **About Institut Curie**

Institut Curie, France's leading cancer centre, combines an internationally renowned research centre with a cutting-edge hospital group, which treats all types of cancer, including the rarest. Founded in 1909 by Marie Curie, Institut Curie employs 3,700 researchers, physicians and health professionals across three sites (Paris, Saint-Cloud and Orsay), all of whom contribute to its three missions of treatment, research and teaching. As a private foundation recognised as a public utility, Institut Curie is authorised to accept donations and bequests, and thanks to the support of its donors, is able to accelerate discoveries and improve patient treatment and quality of life. For more information: [www.curie.fr](http://www.curie.fr)

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[1] [Sandbank et al., Validation and real-world clinical application of an artificial intelligence algorithm for breast cancer detection in biopsies; npj Breast Cancer 8, 129 \(2022\) https://doi.org/10.1038/s41523-022-00496-w](https://doi.org/10.1038/s41523-022-00496-w)

[2] Dr. Vincent-Salomon is an advisor to Ibex Medical Analytics. Dr. Sandbank is also serving as Chief Medical Officer at Ibex Medical Analytics

[3] Bray, F. et al. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J. Clin. 68, 394–424 (2018)

[4] Dr. Schnitt is an advisor to Ibex Medical Analytics.