**Title: PCC and Massive Bio Validate Existing AI System in Groundbreaking and Largest Multi-Sponsor Clinical Trial Matching Study**

**June 2024, ASCO Annual Meeting, Chicago** – The Precision Cancer Consortium (PCC), in partnership with Massive Bio, has unveiled compelling results from a comprehensive study conducted on a multi-sponsor pharmaceutical platform. This study rigorously tested Massive Bio's existing artificial intelligence (AI) system, designed to refine the clinical trial matching process using real-world clinical and genomic data, focused on a multi-study oncology platform. The consortium includes AstraZeneca, Bayer, Eli Lilly, GSK, Johnson & Johnson, Novartis, and Roche.

**Background**

Manual screening of patients for cancer trials is traditionally a resource-intensive process, taking about 25 minutes per trial and limiting patient access to suitable trials. This not only restricts available trial options but also adversely impacts enrollment rates. In response, Massive Bio and the PCC implemented an advanced multi-trial matching method that integrates Next-Generation Sequencing (NGS) results and utilizes AI to enhance both the accuracy and efficiency of trial matching, particularly for targeted therapies.

**Methods**

Massive Bio's established AI system uses computer vision and natural language processing to extract 180 structured clinical parameters from medical records, and has been optimized using GPT-4 Large Language Model (LLM) and fine-tuned for the oncology and biomarker-specific use case. This system matches patients to digitized inclusion/exclusion criteria of more than 14,000 actively recruiting interventional cancer trials, using an AI-driven recommendation algorithm.

**Key Findings**

- Patient Data Analysis: From a dataset of 5,707 cancer patients, only 1,557 (27%) had accessible NGS testing results.
- Trial Matching Improvements: The study matched 690 unique patients to at least one trial, creating 1,254 patient-trial pairs—a 1.82-fold increase due to the multi-trial matching approach.
- Potential Increase with Full NGS: Assuming full NGS testing availability, the study projected 2,635 matching pairs, indicating a potential 2.1-fold increase.
- Targeted Therapy Case Study: In lung cancer trials focusing on the EGFR gene, matching surged to a 12.4-fold increase for unique patients.
- Matching Efficiency: The system matched or exceeded theoretical rates in 80% of trials, significantly reducing manual effort with an estimated savings of 19,500 hours (nearly 100% efficiency).

## Conclusion

The fusion of NGS and AI in a multi-trial matching framework has not only nearly doubled the potential eligibility for patients across various tumor types but also achieved a twelve-fold increase in matching efficiency for specific tumor profiles, significantly curtailing manual labor.

## Future Directions

Further nationwide analysis is under consideration to expand upon these promising results.

**Reference:**

Kurnaz S, Loaiza-Bonilla A, Carvallo Castaneda D, Huner O. Effect of a novel artificial intelligence (AI) –enabled multi-trial matching system on patient matching using real-world data. J Clin Oncol 42, 2024 (suppl 16; abstr e13501). 2024 ASCO Annual Meeting.

## About the Precision Cancer Consortium (PCC)

The PCC is a non-profit organization dedicated to driving global access to comprehensive genomic testing for all patients with cancer. The PCC is composed of and funded by: AstraZeneca, Bayer, GSK, Johnson & Johnson, Eli Lilly, Novartis, and Roche, at the time of writing.

For more information, visit the Precision Cancer Consortium website.

Precision Cancer Consortium

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## About Massive Bio

Massive Bio empowers cancer patients to find optimal treatment options, utilizing AI to improve equitable access and precision in clinical trial matching, drug matching, and drug development. The company collaborates with numerous pharmaceutical companies, CROs, and hospital networks and has a global presence with nearly 100 personnel across 12 countries. Follow @MassiveBio on social media.

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