Enterome's GeneMark-HM software highlighted
as the most accurate microbiome gene prediction software
in peer-reviewed publication NAR Genomics and Bioinformatics

Enterome developed GeneMark-HM software in collaboration with Gene Probe Inc.

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ENTEROME SA, a clinical stage biopharmaceutical company developing novel drugs based on its unique ability to de-code the molecular interactions in the gut microbiome impacting human health, announces that the powerful capabilities of its proprietary GeneMark-HM software have been highlighted in NAR Genomics and Bioinformatics, a peer-reviewed publication. GeneMark-HM was developed to accurately mine potential drug candidates from Enterome's database of microbiome proteins, the largest in the world. Enterome worked in collaboration with Gene Probe Inc, a specialist in gene prediction software, to create GeneMark-HM.

GeneMark-HM is a computational pipeline (i.e. a chain of genomic information processing tools) specifically developed to enhance the reliability of Enterome's drug discovery platform and accelerate the discovery of novel candidates.

The publication showed that GeneMark-HM improves the accuracy of gene prediction in human microbiome metagenomic sequences in comparison with current state-of-art gene prediction tools. This improvement was clearly seen:

- in the whole gene prediction sensitivity as well as
- in the accuracy of the gene starts prediction

In an assessment of gene accuracy, outlined in the publication on benchmark metagenomic sequences, the GeneMark-HM pipeline showed the lowest rate of errors in gene recognition and the lowest percentage of incorrect starts compared to current state-of-the-art gene prediction tools.

Mark Borodovsky, CEO of Gene Probe Inc., said: *"GeneMark-HM is the first of its kind gene prediction pipeline for the human microbiome. It was specifically trained on genomes of thousands of species present in the human microbiome to detect genes and gene starts in earlier seen and, most importantly, yet unseen genomic sequences with high accuracy. I am delighted that we were able to work with Enterome to develop this industry leading computational instrument for machine learning from known data, with the aim to infer new knowledge. This powerful gene discovery tool will allow Enterome to create new and potentially transformative drugs. GeneMark-HM will also be very useful for the global academic community of molecular biologists and bioinformaticians working in comparative, functional and evolutionary microbial genomics."*

Francesco Strozzi, Head of the Data Science department at Enterome, said: *"It was a pleasure to work with such a highly knowledgeable team at Gene Probe. GeneMark-HM has allowed Enterome to improve its ability to mine the human microbiome and identify potential drug candidates with high reliability, paving the way for a shorter drug discovery process compared to industry' norms. We intend to use this pipeline to generate potential transformative drugs to significantly improve global healthcare."*

Publication reference: GeneMark-HM: improving gene prediction in DNA sequences of human microbiome, A. Lomsadze and all, NAR Genomics and Bioinformatics, 2021 (1-11), doi: 10.1093/nargab/lqab047 - **Link**

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About Enterome

Enterome is a clinical stage biopharmaceutical company developing novel drugs based on its unique ability to de-code molecular interactions in the gut microbiome impacting human health. Enterome's success is based on its unique ability to identify small proteins and peptides ("effectors") from gut bacteria that can deliver a therapeutic benefit in humans.

Enterome is leveraging this unique ability to develop two highly promising pipelines of clinical and pre-clinical candidates with a focus on cancer, inflammatory and metabolic diseases:

- **OncoMimics**: innovative, off-the-shelf, microbiome peptide powered cancer vaccines (EO2401, EO2463). EO2401 is in Phase 1/2 clinical trials in patients with glioblastoma and adrenal tumors. EO2463 is in a Phase 1/2 clinical trial for indolent non-Hodgkin B-cell lymphomas.

- **EndoMimics**: a new generation of biologics targeting inflammatory diseases (EM101) and metabolic diseases such as Type 2 diabetes.

These pipelines have been created using Enterome's highly efficient proprietary drug discovery platform that uses machine learning and lab assays to interrogate and decode the world's largest database of gut bacterial proteins, a unique source of novel precision drugs.

In addition, Enterome's clinical candidate Sibofimloc (also referred to as TAK-018) is advancing through Phase 2 clinical trials in Crohn's disease. Sibofimloc has been partnered with Takeda globally, with Enterome retaining a significant profit share in the US.

Enterome is headquartered in Paris (France) and is backed by leading venture capital investors.

For more information, please visit the company's website at: **www.enterome.com**.