

H2020-EIC-FETPROACT-2019 EIC Transition to Innovation Activities



Evolving reversible iMmunocapture by membrane sensing peptides: towARds scalable extracellular VEsicLes isolation

Starting date of the project: 01.11.2020 Duration: 30 months

= **DELIVERABLE D6.12** = MARVEL Final Conference

Due date of deliverable: 30/04/2023 Actual submission date: 29/04/2023

Responsible WP: Yevhen Horokhovatskyi, WP6, AMI Responsible TL: Yevhen Horokhovatskyi, AMI Revision: V1.0

| Dissemination level | | | |
|---------------------|---|---|--|
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DOCUMENT CONTROL

| Document version | Date | Change |
|------------------|------------|---------------|
| V1.0 | 13.04.2023 | First version |
| | | |
| | | |

VALIDATION

| Reviewers | Name | Validation date |
|----------------------|-----------------------|-----------------|
| Work Package Leader | Yevhen Horokhovatskyi | 28.04.2023 |
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DOCUMENT DATA

| Keywords | Final workshop, dissemination and communication activities | |
|-------------------|--|--|
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| Delivery date | 28.04.2023 | |

DISTRIBUTION LIST

| Date | Document version | Recipients |
|------------|------------------|---|
| 28.04.2023 | V1.0 | EC via portal, partners via ownCloud, public via MARVEL website |

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EXECUTIVE SUMMARY

The deliverable D6.12 MARVEL final conference summarises the aims of the final dissemination event of the MARVEL project. The final workshop entitled "Extracellular vesicles: From research to medical application and market readiness" was organised by SCITEC-CNR and AMIRES and took place on the 21st of April in Milan, Italy.

The document includes a detailed agenda, the results of the campaign that promoted the workshop, and the main conclusions.



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1. INTRODUCTION

The aim of the MARVEL final workshop was to officially present the MARVEL project in overall to a wide external audience, as well as to showcase the expertise and capabilities of the consortium. The goal was to maximise the exploitation potential of the developed results and to create a base for future networking and new partnerships. With this aim, beside scientific presentations given by all project participants, a round table discussion was organized titled "Engage & Connect: best practices on the innovation pathway " to gather expert opinions from panellists and audience about currents needs and trends in the EV field from the point of view of academia, translational (clinical) research and market.

The workshop was held on 21 April 2023, the next day after the MARVEL final M30 meeting, at the SCITEC - Istituto di scienze e tecnologie chimiche "Giulio Natta in Milan, Italy, which allowed a wide participation of the consortium partners and external attendees.



2. PREPARATION FOR THE WORKSHOP

The workshop entitled "Extracellular vesicles: From research to medical application and market readiness" took place at SCITEC-CNR in Milan, Italy of the 21 April, from 9 am to 2 pm. In total, the event gathered 48 experts from academia, research hospitals and from companies and was also open to young investigators working in the field of Extracellular Vesicles.

2.1. Workshop program

The MARVEL workshop program (Table 1) was designed by the Project Coordinator and Dissemination manager to optimally structure the topics and timing of the meeting.

Table 1. MARVEL final workshop program.

| PROGRAM | | | |
|---------------|---|--|--|
| 08:45 - 09:15 | Registration | | |
| 9:15 – 09:20 | Welcome and Opening Marina Cretich, National Research Council of Italy at SCITEC-CNR, Milan, Italy | | |
| 09:20 - 09:40 | Liquid biopsy as a source of biomarkers in cancer detection: focus on urinary extracellular vesicles | | |
| | Riccardo Vago, Vita-Salute San Raffaele University, Milan, Italy | | |
| 09:40 – 10:00 | Extracellular vesicles surface antigens instrumental for clinical management of cardiovascular patients | | |
| | Lucio Barile, Istituto Cardiocentro Ticino, Ente Ospedaliero Cantonale, Bellinzona, Switzerland | | |
| 10:00 – 10:20 | Extracellular Vesicles: New Players in Primary Aldosteronism Jacopo Burrello, Istituto Cardiocentro Ticino, Ente Ospedaliero Cantonale, Bellinzona, Switzerland University of Torino, Department of Medical Sciences, Torino, Italy | | |
| 10:20 - 10:40 | Membrane technology for life science Loredana De Bartolo, National Research Council of Italy at ITM-CNR, Rende, Italy | | |
| 10:40 - 10:50 | PaperdropDx: a paper-based point-of-care testing technology for Global Health challenges Lourdes Rivas, Paperdrop Diagnostics SL, Barcelona, Spain | | |
| 10:50 - 11:00 | Activities and research trends in HansaBioMed Life Sciences | | |
| | Andres Lõhmus, HansaBioMed Life Sciences Ltd, Tallinn, Estonia | | |
| 11:00 – 11:40 | Coffee and networking break | | |
| 11:40 - 12:00 | The Membrane Sensing Peptides (MSP) toolbox in EV research | | |
| | Alessandro Gori, National Research Council of Italy at SCITEC-CNR, Milan, Italy | | |
| 12:00 – 13:20 | Round Table - Engage & Connect: best practices on the innovation pathway (Brief introduction | | |
| | from each panellist and discussion) | | |
| | Panelists: | | |
| | Benedetta Bussolati, University of Torino - President of EVIta-Italian Society for Extracellular Vesicles | | |
| | Yuri D'Alessandra, Bio-Techne Brands Products - Sale Specialist | | |
| | Alessandro Gori, SCITEC-CNR – MARVEL Innovation Manager | | |
| | Alice Gualerzi, IRCCS Fondazione Don Gnocchi - translational research in biomedicine & | | |
| | biotechnology | | |
| | Andres Lohmus, HansaBioMed Life Sciences Ltd –Extracellular Vesicles specialized company | | |
| | Ilaria Mancini, Quanterix – Field application Scientist | | |
| 13:20 – 13:30 | Wrap-up and Conclusive remarks | | |
| | Marina Cretich, National Research Council of Italy at SCITEC-CNR, Milano, Italy | | |



2.2. Dissemination Campaign

In order to maximise the outreach of the workshop, an active online campaign was designed to promote it across different dissemination channels (Figure 4). The campaign consisted of the main banner (Figure 1), banner with the meeting place (Figure 2) and program (Figure 3) that in total led to 12 dissemination posts that were posted in the weeks leading up to the event. Overall, 51 registrations were received during the dissemination campaign.

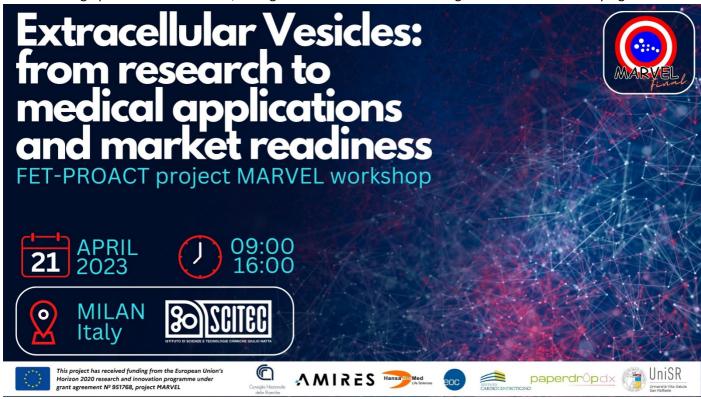


Figure 1. The main MARVEL workshop banner.



Figure 2. MARVEL workshop banner with location.



Extracellular Vesicles: om research to medical applications and market readiness FET-PROACT project MARVEL workshop **PROGRAM** 08:45 - 09:15 Registration 9:15 - 09:20**Welcome and Opening** Marina Cretich, National Research Council of Italy at SCITEC-CNR, Milan, Italy 09:20 - 09:40 Liquid biopsy as a source of biomarkers in cancer detection: focus on urinary extracellular vesicles Riccardo Vago, Vita-Salute San Raffaele University, Milan, Italy 09:40 - 10:00 Extracellular vesicles surface antigens instrumental for clinical management of cardiovascular patients Lucio Barile, Istituto Cardiocentro Ticino, Ente Ospedaliero Cantonale, Bellinzona, Switzerland 10:00 - 10:20 Extracellular Vesicles: New Players in Primary Aldosteronism Jacopo Burrello, Istituto Cardiocentro Ticino, Ente Ospedaliero Cantonale, Bellinzona, Switzerland University of Torino, Department of Medical Sciences, Torino, Italy 10:20 - 10:40 Membrane technology for life science Loredana De Bartolo, National Research Council of Italy at ITM-CNR, Rende, Italy 10:40 - 10:50 PaperdropDx: a paper-based point-of-care testing technology for Global Health challenges Lourdes Rivas, Paperdrop Diagnostics SL, Barcelona, Spain Activities and research trends in HansaBioMed Life Sciences 10:50 - 11:00 Andres Lõhmus, HansaBioMed Life Sciences Ltd, Tallinn, Estonia Coffee and networking break 11:00 - 11:40 The Membrane Sensing Peptides (MSP) toolbox in EV research 11:40 - 12:00 Alessandro Gori, National Research Council of Italy at SCITEC-CNR, Milan, Italy 12:00 - 13:20 Round Table - Engage & Connect: best practices on the innovation pathway (Brief introduction from each panellist and discussion) Panelists: Benedetta Bussolati, University of Torino - President of EVIta-Italian Society for Extracellular Vesicles Yuri D'Alessandra, Bio-Techne Brands Products - Sale Specialist **Alessandro Gori,** SCITEC-CNR – MARVEL Innovation Manager Alice Gualerzi, IRCCS Fondazione Don Gnocchi - translational research in biomedicine & biotechnology Andres Lohmus, HansaBioMed Life Sciences Ltd –Extracellular Vesicles specialized company • Ilaria Mancini, Quanterix – Field application Scientist 13:20 - 13:30 Wrap-up and Conclusive remarks Marina Cretich, National Research Council of Italy at SCITEC-CNR, Milano, Italy **MEETING ORGANIZING COMMITTEE** Scientific organizing committee: Marina Cretich and Alessandro Gori (SCITEC-CNR, Milan, Italy) Local organizing committee: Paola Gagni, Greta Bergamaschi, Roberto Frigerio (SCITEC-CNR, Milan, Italy) Communication and dissemination: Yevhen Horokhovatskyi (AMIRES, Prague, Czech Republic)

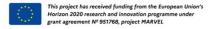












Figure 3. MARVEL workshop program for the dissemination purposes.



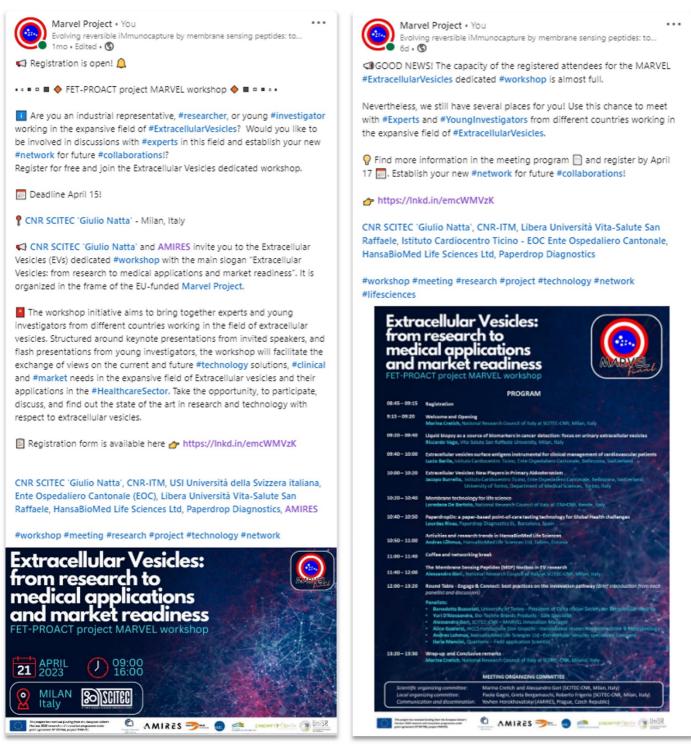


Figure 4. Examples of the MARVEL workshop dissemination campaign.



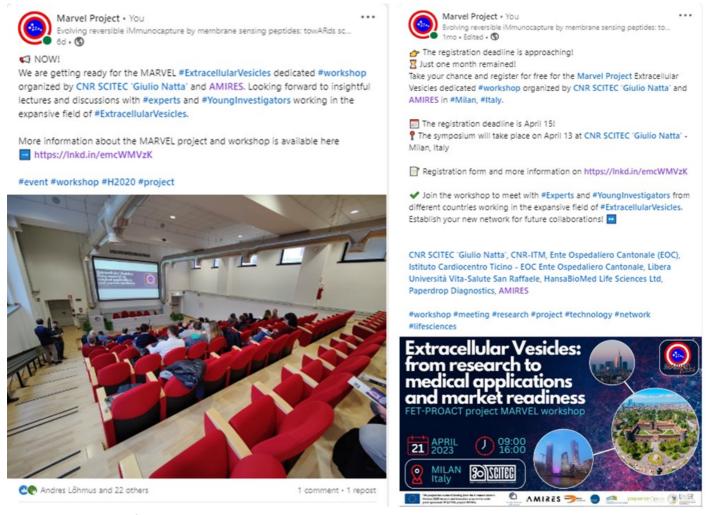


Figure 5. Examples of the MARVEL workshop dissemination campaign.

2.3. Participants list

The list of registered participants of the MARVEL workshop is presented below. Apart from external attendees, 14 partners from the consortium have been actively involved into the workshop. Overall, the workshop gathered 48 attendees.

Table 2. The list of attendees of the MARVEL workshop.

| First Name | Last Name | Туре | Institution |
|--------------------|-----------|--------------------------------|---|
| Alesandro | Haxhiu | Academia | University of Siena |
| Alice | Gualerzi | Hospital / Clinical researcher | IRCCS Fondazione Don Gnocchi |
| Andrea | Zendrini | Academia | Università degli Studi di Brescia |
| Angela | Marcianti | Hospital / Clinical researcher | Fondazione IRCCS Istituto Neurologico Carlo Besta |
| Angelo | Musica | Academia | Università degli Studi di Brescia |
| Anna Maria | Ferretti | Academia | SCITEC-CNR |
| Beatrice | Bona | Academia | Politecnico di Milano |
| Carlo Francesco | Morasso | Hospital / Clinical researcher | Istituti Clinici Scientifici Maugeri IRCCS |
| Cristina | Catoni | Hospital / Clinical researcher | Veneto institute of Oncology |



| Cristina | Grange | Academia | Università di Torino |
|-----------|----------------------|--------------------------------|--|
| Cristina | Chirizzi | Academia | Politecnico di Milano |
| Daniela | Lisini | Hospital / Clinical researcher | IRCCS Neurological Institute C. Besta Foundation |
| Daniela | Boselli | Hospital / Clinical researcher | San Raffaele Hospital |
| Dorian | Tace | Hospital / Clinical researcher | Ospedale Policlinico di Milano |
| Edoardo | Marchisio | Industry | DIA.PRO srl |
| Eleonora | Spampinato | Hospital / Clinical researcher | Fondazione IRCCS Carlo Besta |
| Esteban | Ortega | Industry | Wellbeing International Foundation |
| Federica | Panico | Academia | CNR SCITEC |
| Francesca | Susa | Academia | Politecnico di Torino |
| Francesca | Baldelli Bombelli | Academia | Politecnico di Milano |
| Francesco | Damin | Academia | SCITEC-CNR |
| Franco | Gatti | Innovation support provider | Gatti |
| Franco | Gatti | Industry | Caldiuc Italia srl |
| Giacomo | Pozzi | Academia | Università degli studi di Milano |
| Giulia | Lodigiani | Academia | CNR |
| Greta | Bergamaschi | Academia | SCITEC-CNR |
| Igea | Agnano | Academia | ITB-CNR |
| Ilaria | Prada | Industry | Axxam S.p.A. |
| Ilaria | Mancini | Other | Quanterix |
| Irma | Schabussova | Academia | Medical University of Vienna |
| lorenzo | arnaboldi | Academia | UNIMI DISFeB |
| Majeda | Muluhie | Academia | University of Milan |
| Marcella | Chiari | Academia | CNR |
| MARCO | PADOVANI | Other | Quanterix |
| Marta | Dossena | Industry | Bio-techne |
| Noemi | Elia | Hospital / Clinical researcher | Ospedale Policlinico |
| Paola | de Candia | Academia | Università degli Studi di Napoli Federico II |
| PAOLA | GAGNI | Academia | SCITEC-CNR |
| Pietro | Parisse | Academia | Istituto Officina dei Materiali - CNR |
| Pietro | Milesi | Academia | Politecnico di Milano |
| Sara | Nava | Hospital / Clinical researcher | Fondazione IRCCS Istituto Neurologico C. Besta |
| Silvia | Picciolini | Hospital / Clinical researcher | IRCCS Fondazione Don Carlo Gnocchi |
| Tania | Limongi | Academia | Politecnico di Torino |
| Valeria | Peli | Hospital / Clinical researcher | Irccs Cà Granda Ospedale Maggiore Policlinico di Milano |
| VALERIO | BRIZI | Industry | AXXAM S.p.A. |
| Virginia | Catani | Academia | University of Modena and Reggio Emilia |
| Virginia | Catani | Academia | University of Modena and Reggio Emilia |
| Yuri | Alessandra | Industry | Bio-Techne |



3. EXTRACELLULAR VESICLES: FROM RESEARCH TO MEDICAL APPLICATION AND MARKET READINESS

The Extracellular Vesicles dedicated workshop was a great success overall. Participants felt extremely welcomed at SCITEC-CNR (Figure 6, Figure 7) and were delighted they could hear more about the MARVEL project and its technology, hosting partner and other leading experts in this field. Overall, the workshop gathered 48 attendees (Figure 8). The workshop initiative aimed to bring together experts and young investigators from different countries working in the field of extracellular vesicles. During the first session of the workshop, lectures from Marvel consortium members were given on different aspects of Extracellular Vesicles research, current challenges, needs as well as innovative solutions were presented.

The whole consortium had visibility and the chance to showcase their specific expertise and activities even beyond Marvel, in view of future possibilities of collaboration. A networking coffee break was organized to facilitate discussion among all attendees in a friendly atmosphere.



Figure 6. Welcome and registration desk for the MARVEL workshop.





Figure 7. MARVEL workshop welcome and opening.



Figure 8. Participants of the MARVEL workshop.



Additionally, participants also had the chance to participate in a round-table discussion with industrial representatives and leading researchers in this field (Figure 9).

The round table titled "Engage & Connect: best practices on the innovation pathway" was structured around short presentations of the panellists on the current needs in their specific areas of interest and on envisioned future trends Then, round table, moderated by Marina Cretich, Marvel coordinator, was centered around the following topics discussed by panelists and audience:

What are the needs in terms of new technologies and workflows to facilitate the use of EVs in real life scenarios in clinics and in diagnostics?

What the market is looking for from the standpoint of companies

How companies stay tuned with research and how they can engage researchers to develop new products

Can you report on successful examples of mutual collaborations

What is required to start a virtuous innovation cycle

Panelists were selected and invited to represents the academia/basic research on EVs at the national and international level (**Prof. Benedetta Bussolati**, president of **EVIta**, the Italian Society for Extracellular Vesicles and Treasurer of **ISEV**, the International Society for Extracellular Vesicle); the translational/applied clinical research that is typically performed in research hospitals (**Dr. Alice Gualerzi, Fondazione Don Gnocchi Hospital** and Executive Board Member of EVIta); the perspective and needs from leading companies operating in the development and commercialization of research products for EVs and life science in general (**Andres Lohmus** from **HansaBiomed** member of Marvel consortium, **Yuri D'Alessandra** from **BioTechne** and **Ilaria Mancini** from **Quanterix**).

Alessandro Gori (Marvel Innovation Manager) participated representing the whole consortium and gathered important insights for exploitation of Marvel results hearing on the needs originating from the different types of stakeholders and potential future clients and partners of MARVEL technologies.

Overall the round table facilitated the exchange of views on the current and future technology solutions, and clinical and market needs in the expansive field of Extracellular vesicles and their applications in the healthcare sector.





Figure 9. Round table discussion with the panellists.

We would like to express our cordial thanks to all who attended the workshop and helped make this event a success. We have much pleasure in thanking our keynote speakers, MARVEL partners and several organizations, in particular: CNR SCITEC 'Giulio Natta', CNR-ITM, Libera Università Vita-Salute San Raffaele, USI Università della Svizzera italiana, Ente Ospedaliero Cantonale (EOC), HansaBioMed Life Sciences Ltd, Paperdrop Diagnostics and Amires for their support and the very efficient help during the symposium. The organizers gladly acknowledge also many other local people from CNR SCITEC 'Giulio Natta' where the event took place, in particular scientific organizing committee (Marina Cretich and Alessandro Gori), local organizing committee (Paola Gagni, Greta Bergamaschi, Roberto Frigerio) and communication and dissemination manager (Yevhen Horokhovatskyi), who helped with the organization and ensured that in all instances the formal steps went smoothly.



4. CONCLUSIONS

This document represents the Deliverable D6.12 "MARVEL Final Conference". The deliverable summarizes the implemented activities before and during the MARVEL final workshop that was held on 21 April 2023 at the SCITEC - Istituto di scienze e tecnologie chimiche "Giulio Natta in Milan, Italy. Overall, the MARVEL final workshop proved to be a successful end to the project, establishing a base for further cooperation, both among the project partners and outside.

5. DEGREE OF PROGRESS

This deliverable D6.12 is 100% complete and represents the outcomes of the MARVEL Final workshop.

6. DISSEMINATION LEVEL

The Deliverable D6.12 is public and therefore it will be available to download on the project's website.