



*KIOH - KUMARAGURU INSTITUTIONS
ONE HEALTH INITIATIVE*

What is One Health ?

"One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals, and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent. The approach mobilizes multiple sectors, disciplines, and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy, and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development." - One Health High-Level Expert Panel (OHHLEP), which was established jointly by the Food and Agriculture Organization (FAO), World Organisation for Animal Health (WOAH), United Nations Environment Programme (UNEP), and World Health Organization (WHO)

16

Govt. Of India
ministries

3

State-
level OH missions

4

Intl. organizations
forming consensus

33

Countries adopting
OHJPA

One Health Joint Plan of Action (OHJPA) Tracks

Action track 1: Enhancing One Health capacities to strengthen health systems

Action track 6: Integrating the Environment into One Health

Action track 5: Curbing the silent pandemic of Antimicrobial Resistance (AMR)



Action track 4: Strengthening the assessment, management and communication of food safety risks

Action track 2: Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics

Action track 3: Controlling and eliminating zoonotic, neglected tropical and vector-borne diseases



Benchmarking One Health : The Lancet One Health Commission report

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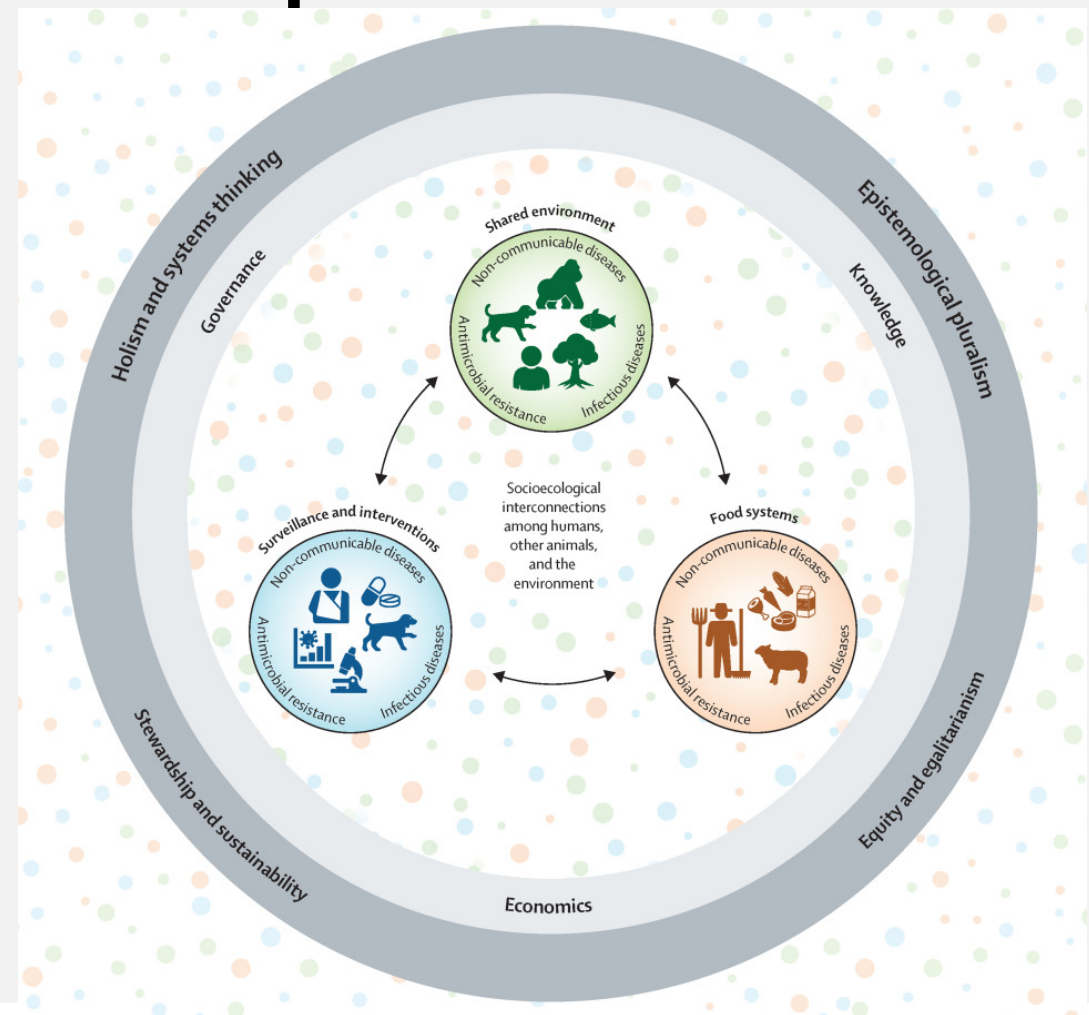
The *Lancet* One Health Commission: harnessing our interconnectedness for equitable, sustainable, and healthy socioecological systems

[Prof Andrea S Winkler, MD PhD^{a,b,c,*}](#) · [Christina Marie Brux, MPhil^{d,*}](#) · [Prof Hélène Carabin, DVM PhD^{e,*}](#) ·

[Prof Carlos G das Neves, DVM PhD^{f,g,†}](#) · [Prof Barbara Häslér, DVM PhD^{h,i,†}](#) · [Prof Jakob Zinsstag, DVM PhD^{j,†}](#) · et al. [Show more](#)

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Key recommendations from the Lancet Commission

1 MOVE BEYOND SILOS



One Health challenges cross human, animal, plant and environmental boundaries. Interdisciplinary, transdisciplinary and multisectoral collaboration is essential.

2 ONE HEALTH IS BROAD AND INTEGRATED



It encompasses infectious diseases, AMR, NCDs, food systems, health systems and environmental/planetary crises.

3 ENVIRONMENT IS PART OF THE HEALTH SYSTEM



Soil, water, air, biodiversity, plants, wildlife and climate are integral to health and must be embedded in health systems and decision-making.

4 LOCAL PARTICIPATION IS FUNDAMENTAL



Meaningful and continuous involvement of local communities and stakeholders from the beginning ensures context-specific, inclusive and effective One Health action.

5 GOVERNANCE IS AS IMPORTANT AS SCIENCE



Effective One Health requires coordination, institutional innovation, accountability, leadership and collaboration across sectors and all levels of governance.

6 DATA & AI ARE MAJOR ENABLERS



Integrated data systems and AI can transform surveillance, risk assessment and healthcare delivery across humans, animals and environments.

7 EQUITY MUST BE AT THE CORE



One Health must advance equity, egalitarianism, stewardship and sustainability—ensuring no one and no place is left behind.



8 ONE HEALTH NEEDS MEASURABLE IMPLEMENTATION



Set context-adaptable goals, metrics, indicators and timelines to translate One Health commitments into action and impact.

9 FINANCING NEEDS TO CHANGE



Sustainable, equitable and innovative financing mechanisms are essential to support and scale One Health implementation.

10 ONE HEALTH MUST SHAPE THE POST-2030 AGENDA



One Health should be central to the global development, peace and planetary sustainability agendas for an equitable, healthy and resilient future.

One Health portfolio at Kumaraguru



Research

Projects mapped to action tracks

AT1 · Health systems		4
AT4 · Food safety		2
AT5 · AMR		2
AT6 · Environment		8



Curriculum & capacity building

- ✓ PG elective on One Health (Jul 2025)
- ✓ COIL on One Health with BGU
- 🕒 Winter Diagnostics School (Dec 2026)*
- ✓ NEOH student chapter



Internationalization

- ✓ MoU with BGU
- ✓ COIL on One Health with BGU
- ✓ Other partners: KU Leuven, Uni Liege, Colombo



Knowledge dissemination & engagement

- ✓ Intl. One Health Symposium 2025
- 🕒 Gandhianism workshop (Sep 2026)*
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● Research ● Curriculum & capacity building ● Internationalization ● Knowledge dissemination & engagement

🕒 * Planned

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One Health RESEARCH in action at Kumaraguru

One Health Joint Plan of Action action tracks



KCT - Kumaraguru College of Technology

KCLAS - Kumaraguru College of Liberal Arts and Science

KIA - Kumaraguru Institute of Agriculture

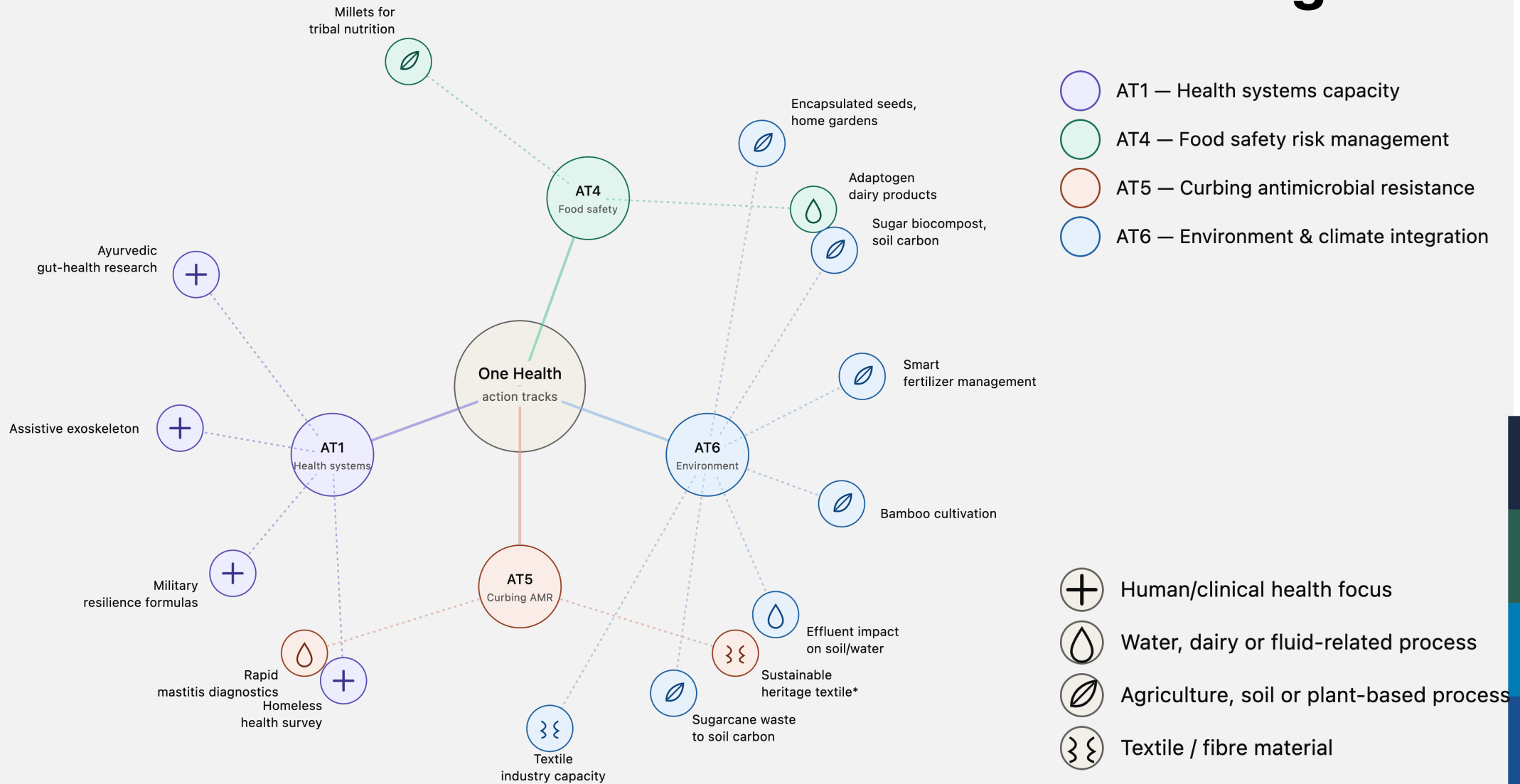
Number of projects

	AT1	AT4	AT5	AT6
KCT	3	1	2	3
KCLAS	1	0	0	0
KIA	0	1	0	5

Funded amounts in INR Lakhs

	AT1	AT4	AT5	AT6
KCT	78.3	35.0	77.0	314.5
KCLAS	0.5	-	-	-
KIA	-	3.1	-	202.8

One Health research in action at Kumaraguru

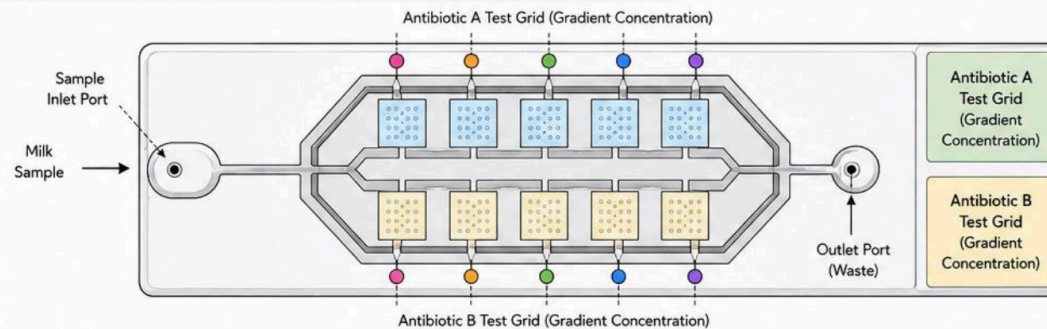


Flagship project : Tailored AMR prognostic kit development for Mastitis

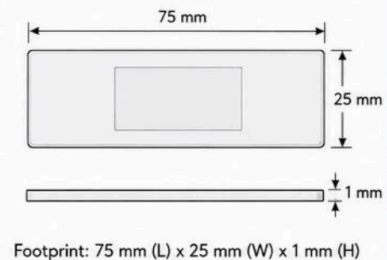
POINT OF CARE DEVICE FOR ANTIBIOTIC SUSCEPTIBILITY TESTING (AST)

Rapid • On-site • Quantitative • Connected

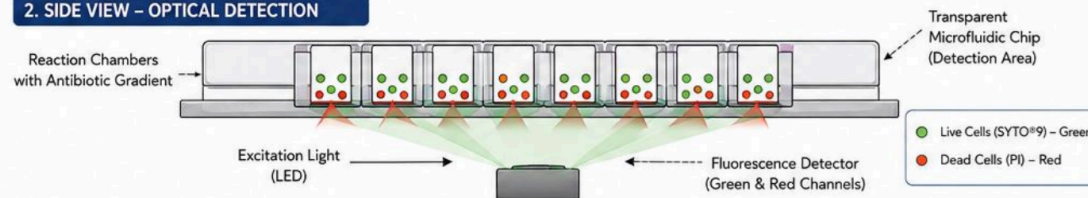
1. TOP VIEW – MICROFLUIDIC CARTRIDGE (Same footprint as a Microscopy Glass Slide)



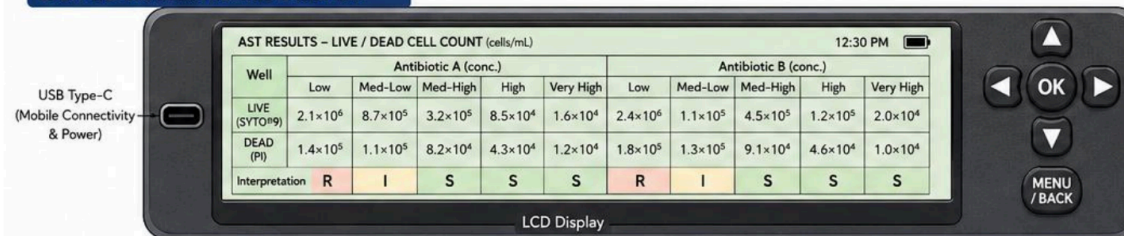
DIMENSIONS (Like a Microscopy Glass Slide)



2. SIDE VIEW – OPTICAL DETECTION



3. ON-BOARD ELECTRONICS & DISPLAY



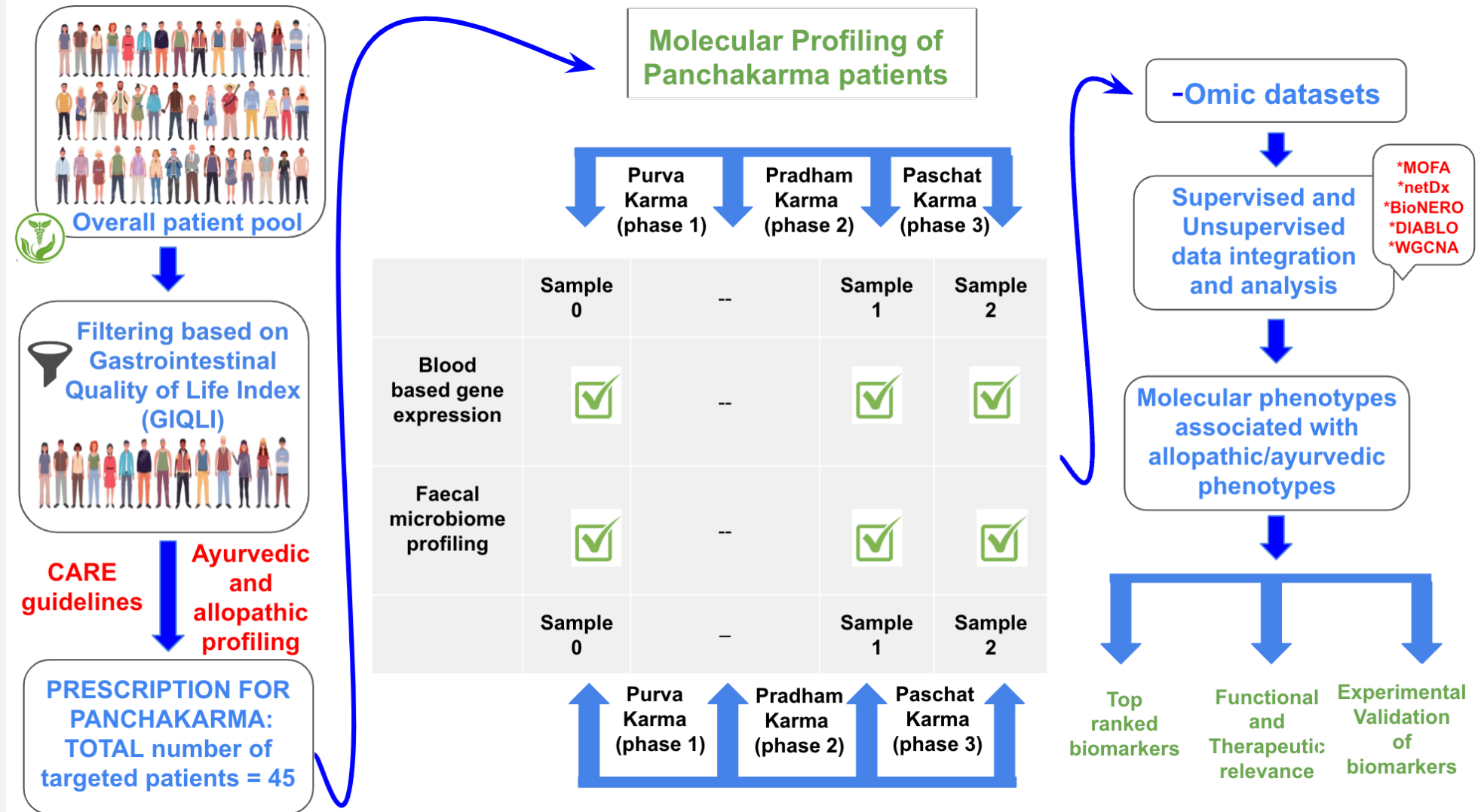
4. KEY FEATURES

- Parallel testing of two antibiotics (A & B) with gradient concentrations
- Quantitative detection of live (SYTO®9) and dead (PI) cells
- On-board analysis with live/dead cell count displayed for each well
- USB Type-C for power and mobile connectivity (data transfer & app)
- Rechargeable battery for field use
- Portable, low-cost, and field-deployable
- Rapid AST result in < 1 hour

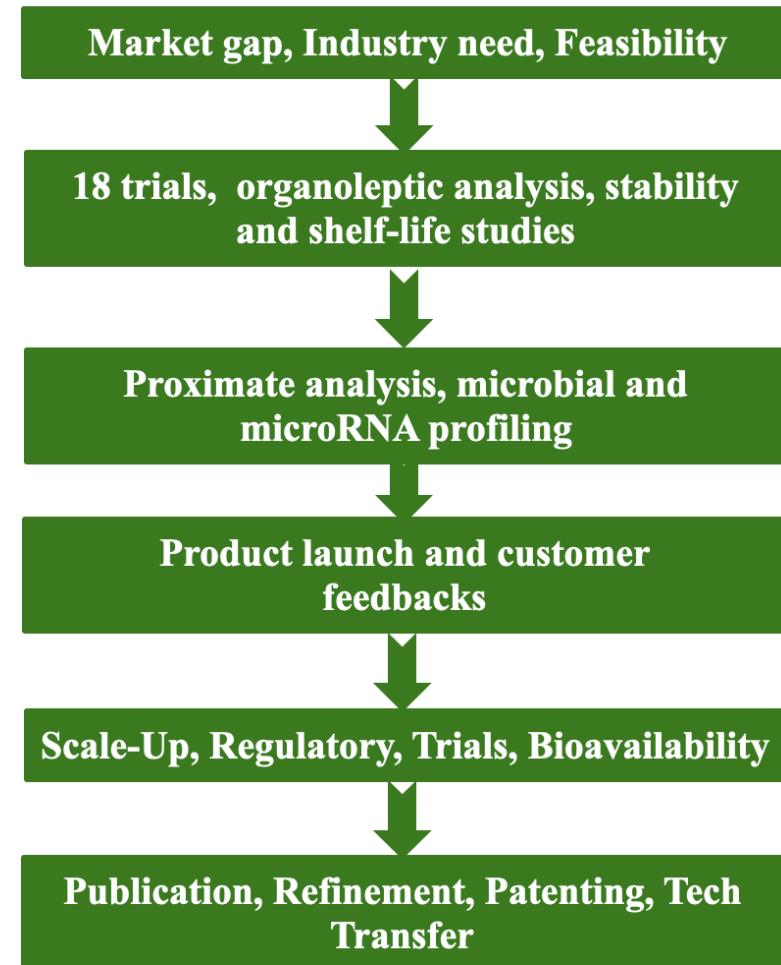
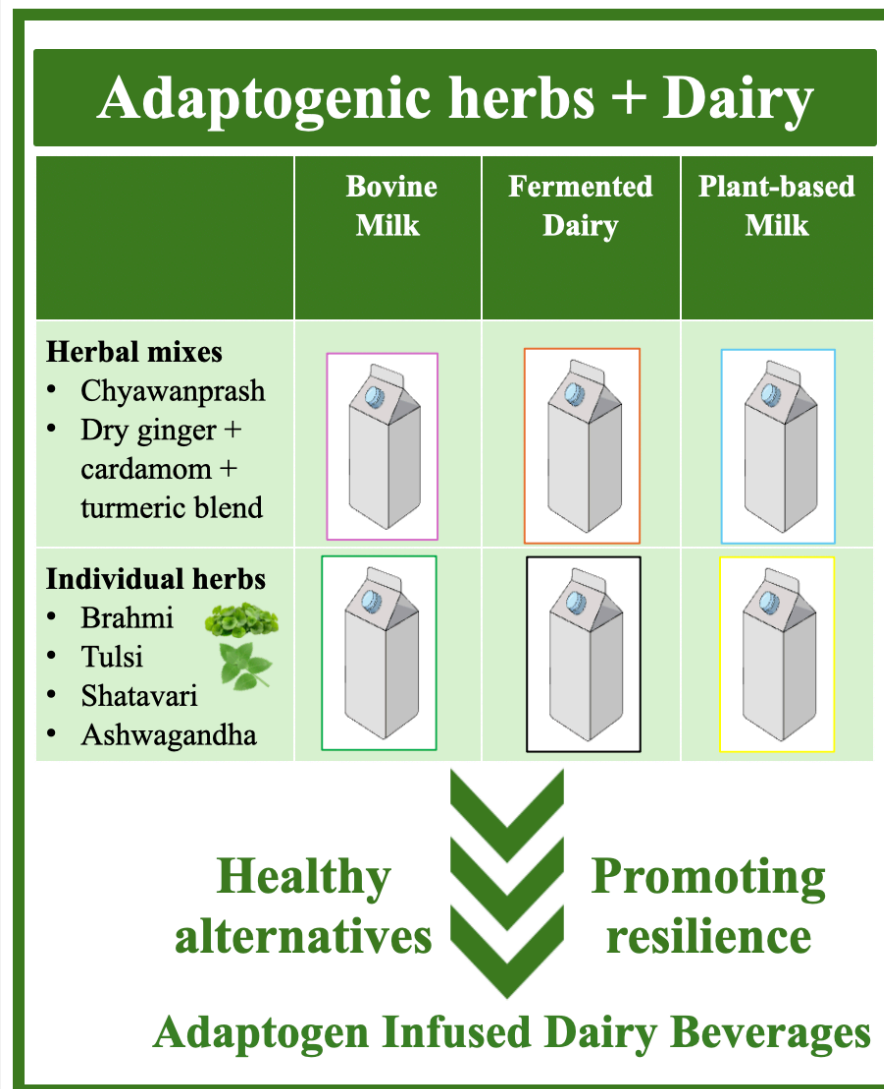
5. WORKFLOW



Flagship project : Integrating biomarker discovery and traditional medicine



Flagship project : Adaptogen infused dairy product development



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PG elective course on One Health

24MBE006	One Health - an integrative approach to interconnected health challenges	L	T	P	J	C
		3	0	0	0	3
PE		SDG	3, 13, 15			

Pre-requisite courses	-	Data Book / Code book (If any)	
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Course Objectives:	
The purpose of taking this course is to:	
1	Demonstrate comprehensive understanding of the One Health concept and its historical development as an integrated approach to global health challenges.
2	Unravel the complex interactions between human, animal, and environmental health determinants and their implications for disease emergence and transmission.
3	Bring out the roles and responsibilities of different sectors (public health, veterinary medicine, environmental sciences, etc.) in implementing One Health approaches.
4	Reveal the One Health principles and methodologies to design interdisciplinary solutions for contemporary health challenges.
5	Develop skills in cross-sectoral communication, collaboration, and knowledge translation for effective One Health practice.

Course Content	
FOUNDATIONS OF ONE HEALTH. Chronological progression and evolution of the One Health concept; Theoretical frameworks and principles underpinning One Health; Global governance structures and international initiatives (WHO, FAO, OIE Tripartite Alliance); Key stakeholders and their roles in One Health implementation; Ethics and social justice dimensions of One Health (9 hours).	9 hours
ZOONOTIC DISEASES AND EMERGING INFECTIONS Mechanisms of zoonotic disease transmission and spillover events; Drivers of emerging infectious diseases; Pandemic preparedness and response through a One Health lens; Case studies: COVID-19, Ebola, Avian Influenza, and Nipah virus; Antimicrobial resistance as a One Health challenge; Toxins from food systems (6 hours).	9 hours
- Global (COVID-19, Ebola, etc.) and Indian case studies (Kyasanur Forest Disease or Leptospirosis)(1.5 hours) - Problem-based learning: Designing multisectoral response to a novel zoonotic threat (1.5 hours) using Multi-Stakeholder Platforming	
ENVIRONMENTAL HEALTH AND ECOSYSTEM SERVICES Ecosystem degradation and health consequences; Climate change impacts on disease ecology and distribution; Water security and waterborne diseases; Food systems, food safety, and sustainable agriculture; Biodiversity loss and its implications for human and animal health; TEEB framework.	9 hours

ONE HEALTH SURVEILLANCE AND MONITORING SYSTEMS. Integrated surveillance systems for human, animal, and environmental health; Digital technologies and innovation in One Health surveillance; Data management, sharing, and analysis across sectors Early warning systems for health threats; Ethics and governance of One Health data (6 hours).	9 hours
- Digital tools like DHIS2 and Epicollect (1.5 hours) - Risk analysis methods—namely, risk assessment, risk communication, and risk management. (1.5 hours)	
IMPLEMENTING ONE HEALTH: POLICY, PRACTICE, AND PARTNERSHIPS. Translating One Health research into policy and practice; Economic dimensions and financing mechanisms for One Health initiatives; Community engagement and participatory approaches Communication strategies for different stakeholders; Monitoring and evaluation of One Health programs (7 hours).	9 hours
- Evaluation methods (eg Log Frame Matrix) for assessing One Health programs. (2 hours) - Industry Connection/Field Work Site visit to local public health department OR virtual roundtable with policymakers and implementing partners	

Course Curated by			
Expert(s) from Industry	Expert(s) from Higher Education Institution		Internal Expert(s)
Dr. S. Krishnakumar, Gennoa Biopharmaceuticals Ltd, Pune, Maharashtra, India	Prof. Dr. Kristel van Steen, Professor in Medical Genetics, BioE3 group, University of Liege, Liege, Belgium		Dr. Padhmanand Sudhakar Dr. Sivarajasekar Natesan
Recommended by BoS on	07.05.2025		
Academic Council Approval	28 th Meeting	Date	26.06.2025

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MoU with Ben Gurion University



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International One Health Symposium 2025

30 experts, 5
verticals

Experts from
5 nationalities

4 industry
experts

Simulation
Exercise

Practitioners
Pitch

Poster and
Oral
Presentations

5 Master
classes

Landscape
based One
Health
applications

140
participants
from >25
institutions



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THANK YOU !!