# NEW TOOLS FOR AUTHENTICATION AND TRACEABILITY

## TO ASSURE THE INTEGRITY OF FOOD CHAIN

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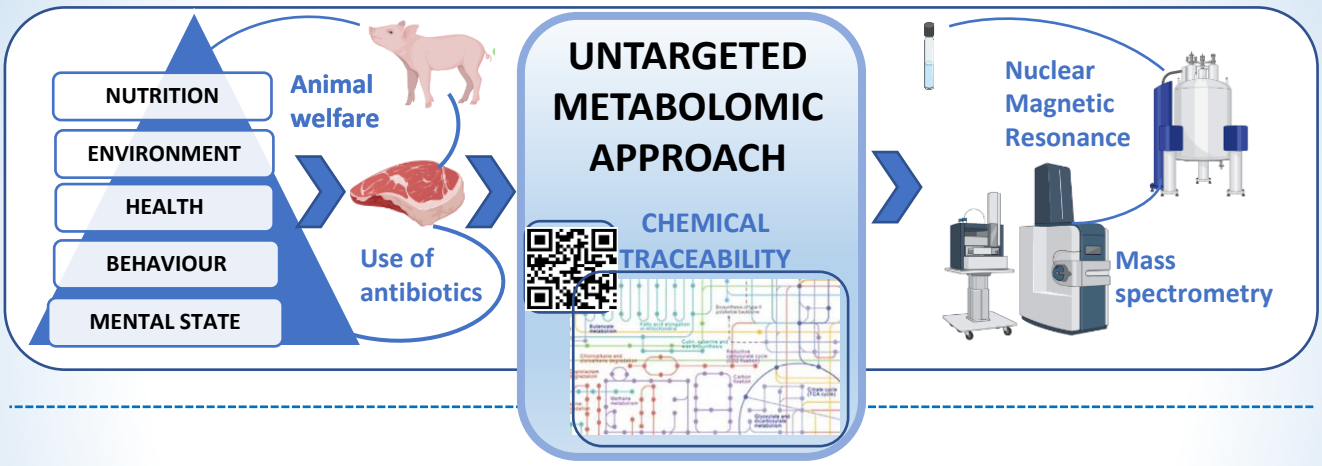
## INTRODUCTION

**"Animal welfare"** and **"Antibiotics free"** are often declared on meat label.
Most of the tools to prove these statements are based upon

**DOCUMENT SYSTEM** ⟵ TODAY ⟶ **TARGETED METHODS**

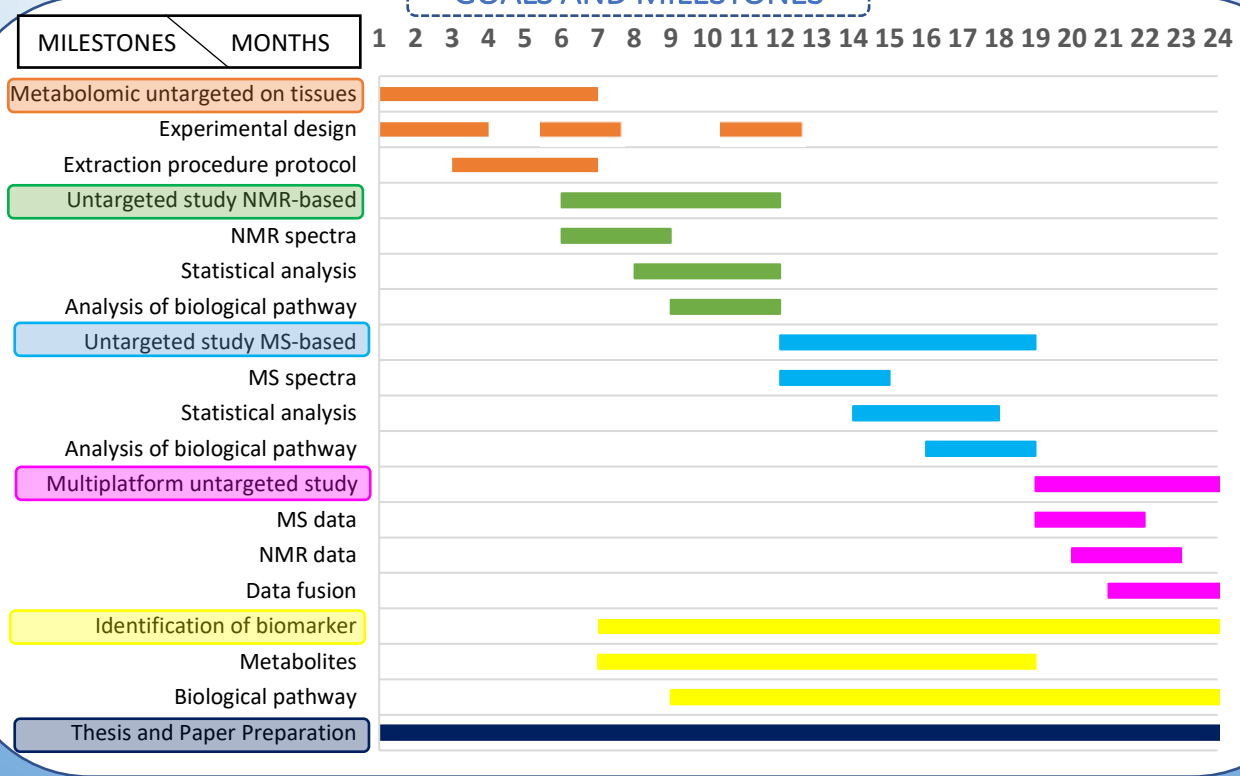
The **phenotypic outcome** intended as complex interactions between genotype, lifestyle, nutrition, drug therapy, environmental exposure can be investigated at the molecular level by identifying and quantifying a broad range of endogenous and exogenous metabolites [1].




## AIM OF THE PhD PROJECT

This Ph.D. thesis research aims to unravel specific **biomarkers** and related **biological pathways** as clear evidence of animals'welfare and use of antibiotics in livestock by an untargeted metabolomic approach, Mass Spectrometry- and Nuclear Magnetic Resonance- analytical platforms based.

## GOALS AND MILESTONES




## REFERENCE

[1] Beger R D, Dunn W, Schmidt A M, Gross S S, Kirwan A J, Cascante M, Brennan L, Wishart S D, Oresic M, Hankemeier T, Broadhurst I D, Lane N A, Suhre Karsten, Kastenmüller G, Sumner J S, Thiele I, Fiehn O, Kaddurah-Daouk R, for "Precision Medicine and Pharmacometabolomics Task Group"- Metabolomic Society Initiative (2016) Metabolomics enables precision medicine "A white paper, community perspective". Metabolomics 12:149