



DNA-based physical traceability solution to identify food products along the supply chain

Johanna Kallfelz², Dr. Gediminas Mikutis^{1,2}, Dr. Michela Puddu^{1,2},
¹Functional Materials Laboratory (FML), D-CHAB; ²Haelixa AG, Kempththal



1 Introduction

Haelixa is an ETH spinoff delivering a DNA-based physical traceability solution for full supply chain transparency from raw material to retail. The Haelixa patented technology uses a novel class of DNA markers: DNA sequences protected within robust and extremely small particles. The markers are applied to the raw material at the source, providing it with a traceable fingerprint.



Traceability components



PHYSICAL TRACEABILITY

Haelixa DNA markers
 Connects information to the product itself



DIGITAL TRACEABILITY

(blockchain, ERP, certification, etc)

Enables standardized collection and secure storage of information

*https://authena.io/product-authenticity-verification-made-reliable-with-blockchain/

2 Solution



HOW IT WORKS

Physical traceability from farm to retail



Forensic proof of product data



3 Conclusion

Proof of credibility

- Sustainably sourced
- Proof of origin
- Follow up on promise

Increased trust

- Strong brand
- Creating value for farmer
- Creating value for consumer

Quality

- Spot & reduce inefficiencies
- Reduce need for audits
- Ensure consistent harvest

4 Contribution to Sustainable Food Systems

Haelixa's mission is to accelerate the transition to a transparent consumer goods industry, empowering consumers and brands to make conscious decisions about their purchases and their social and environmental impact.



Patent applications: 3 (WO2013143014, WO2020011807, WO2016169904)
 More than 20 scientific publications in outstanding journals including:
 R. N. Grass, H. Reinhard, M. Puddu, D. Paunescu, W. J. Stark, *Angew. Chem. Int. Ed.*, 54, 2015.
 D. Paunescu, C. Mora, M. Puddu, F. Krumeich, R. N. Grass, *J. Mater. Chem. B*, 2, 2014.
 M. Puddu, D. Paunescu, W. J. Stark, R. N. Grass, *ACS Nano*, 8(3), 2014.
 D. Paunescu, M. Puddu, J.O.B. Soellner, P.R. Stoessel, R.N. Grass, *Nat. Protoc.*, 8, 2013.

Transparency is in our DNA.

Let's make your product stories transparent too!

