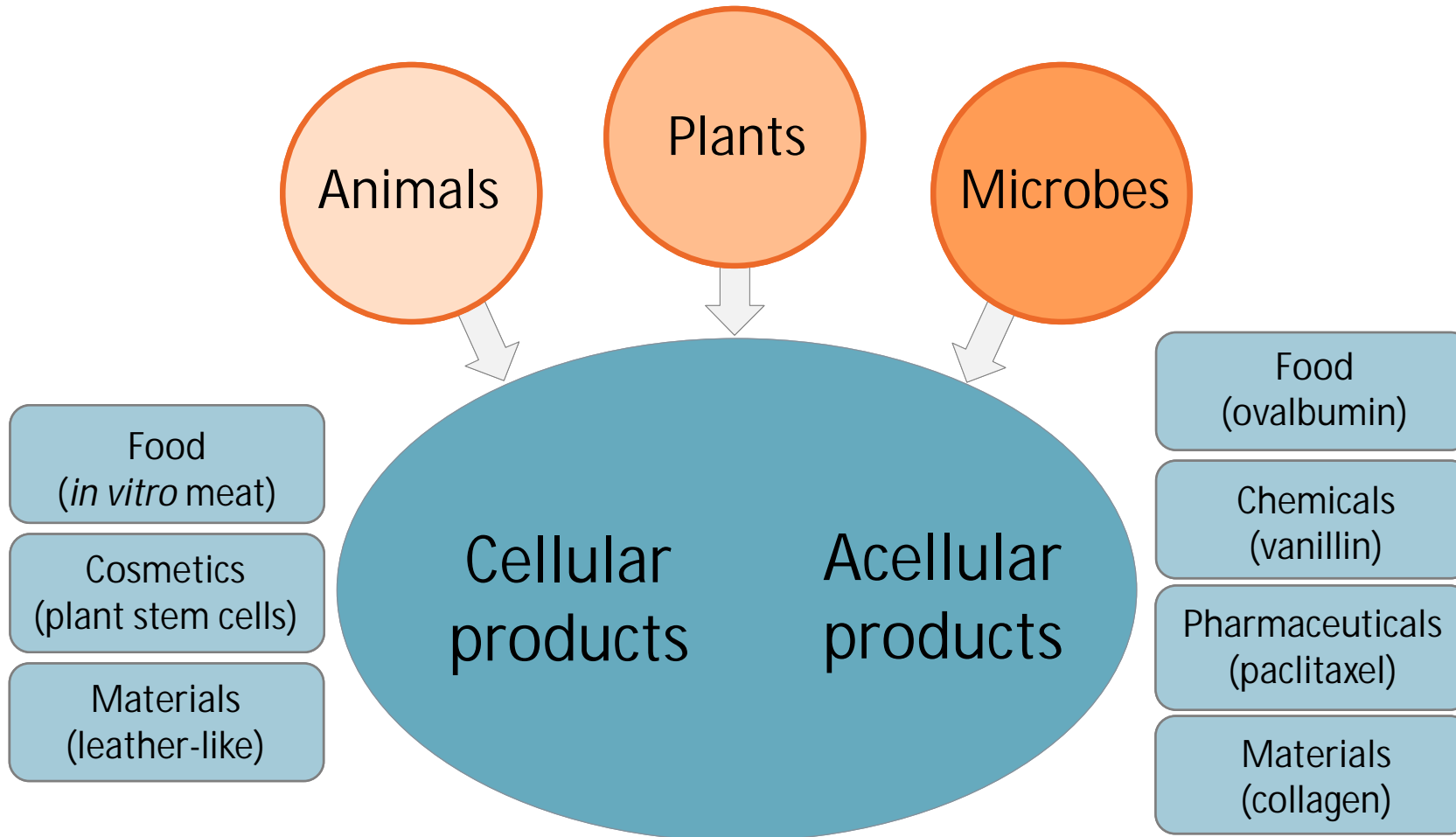


# Plant cell factories for food applications

PlantLink Day 2022, October 5<sup>th</sup> 2022

heiko.rischer@vtt.fi

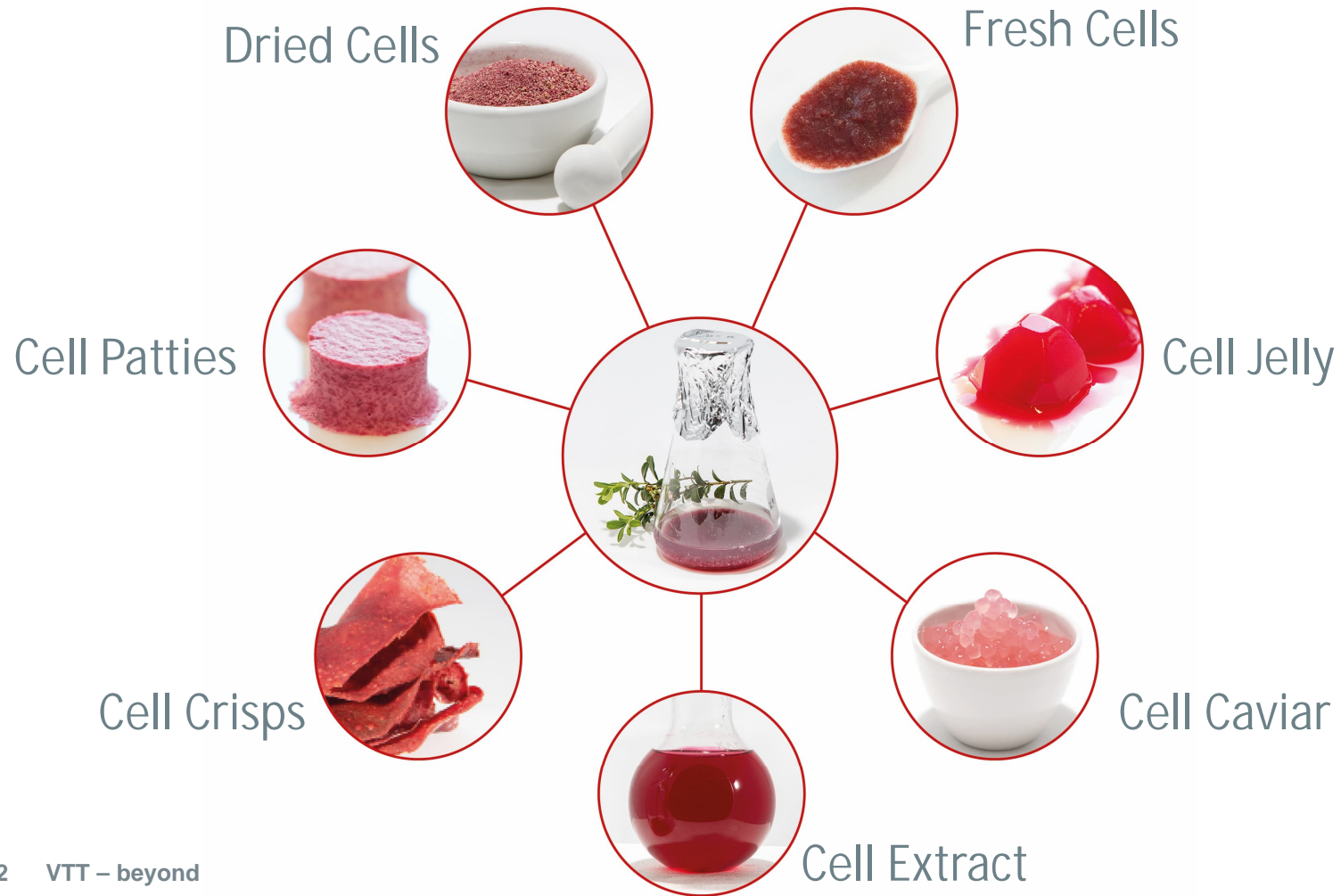
# Cellular Agriculture



“Cultivating cells in fermenters instead of traditional agricultural systems for production of food ingredients.”

Rischer, H. *et al.* (2020) *Curr. Opin. Biotechnol.*, 61: 128-134.

# Plant Cells as Food





# Plant Cell Cultures

A new source of nutrition

VTT



ANTIOXIDANTS FATTY ACIDS  
VITAMINS  
FIBRE PROTEINS

- Smoothies
- Jams
- Ingredients
- ...



# Inspiration and Innovation

Customised for the culinary and food industry

VTT

**ETHICAL**    **EXCITING**  
**LOCAL URBAN SAFE VEGAN**  
**SUSTAINABLE**  
**HEALTHY CLEAN ARCTIC**  
**PLANT-BASED**



# Truly Sustainable

Fully controlled and contained



- Year-round production
- Consistent quality



# Plant-based Cellular Agriculture

## Cellular Agriculture in general

- Comprehensive introduction:  
[Cellular Agriculture | ACS In Focus](#)
- Review (open access):  
<https://doi.org/10.1016/j.copbio.2019.12.00>

## Plant cell culture-based

- General level/Non-scientific audience (p. 12 ff., open access):  
[Baking Europe spring 2019](#)
- Concept/Composition/Sensory (open access):  
<https://doi.org/10.1016/j.foodres.2018.02.045>
- Composition:  
[Plant cell cultures of Nordic berry species: Phenolic and carotenoid profiling and biological assessments – ScienceDirect](#)
- Sustainability/Safety (open access):  
<https://link.springer.com/article/10.1007%2Fs00299-020-02592-2>
- Phenolics/Health (open access):  
<https://link.springer.com/article/10.1007/s00425-017-2686-8>
- Life cycle analysis (open access):  
<https://www.sciencedirect.com/science/article/pii/S0048969721070662>
- Sensory (open access):  
<https://www.sciencedirect.com/science/article/pii/S0963996922004975?via%3Dihub>
- Structure formation (open access):  
<https://www.sciencedirect.com/science/article/pii/S0023643822005850?via%3Dihub>

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# bey<sup>0</sup>nd

## the obvious

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