



Personalized preparations of epigenetically active nutraceuticals for prevention of chronic and viral disease

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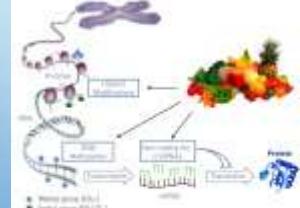


- FF and epigenetic
- FF aging hallmarks
- FF Personalisation



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EPIGENETICS IS SO EXCITING FOR NUTRACEUTICALS, FF AS THEY ADDRESS ALL MECHANISMS OF EPIGENETICS





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FF AND EPIGENETIC METHYLATION OF CPGs, DNA METHYLTRANSFERASE



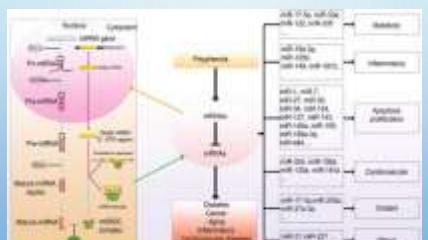
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FF AS HISTONE MODIFIERS HISTONE ACETYL TRANSFERASES, HISTONE DEACETYLASES



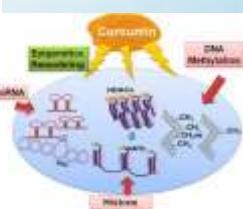
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FF CHANGE ncRNAs MODULATING EXPRESSION OF MRNAs



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Often FF influence multiple mechanisms



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FF INTERACT WITH EPIGENETICS AND EPIGENETICS REGULATES MANY MECHANISMS OF AGING, HOW CAN FF INTERFERE WITH AGE-RELATED DISEASES

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CHROMATIN CHANGES WITH AGING ; DNA-STABILITY (DE-)ACETYLATION REGULATES CHROMATIN, STABILITY ? FF-MEDIATED EPIGENETIC METHYLATION AND HISTONE

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EPIGENETIC METHYLATION IS THE BEST MARKER FOR BIOLOGICAL AGING. EPIGENETIC CLOCK REFLECTS CR, DIETS , LIFESTYLE

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AGING INCREASES DEBRIS, AUTOPHAGY IS REGULATED EPIGENETICALLY, FF INTERFERE

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AGING; TELOMERE SHORTENING BY DECREASED TELOMERASE ACTIVITY RESULTS IN AGEING, hTERT IS REGULATED EPIGENETICALLY, ROLE FOR FF

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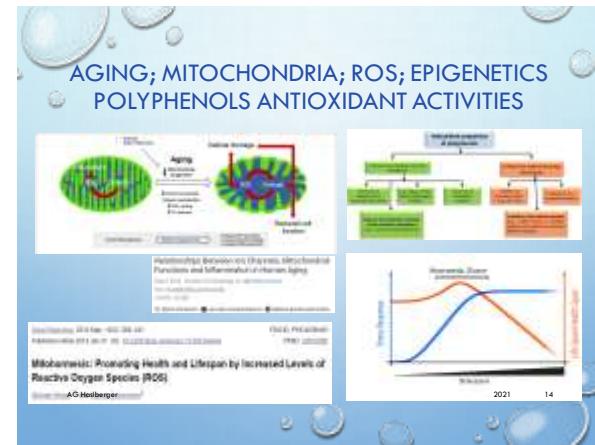
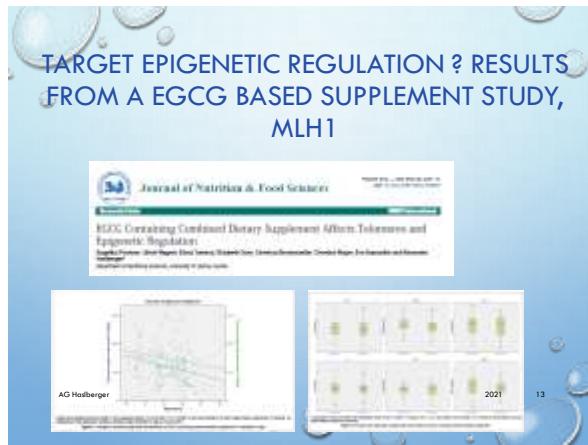
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LONG TELOMERS LINKED TO CANCER EGCG AFFECTS TELOMERASE IN CANCER CELLS, FIBROBLASTS DIFFERENTLY

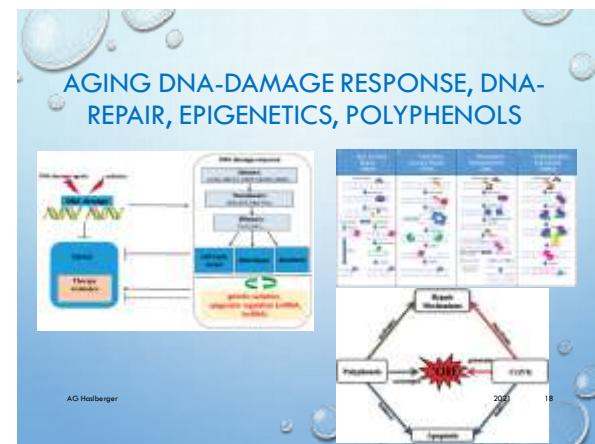
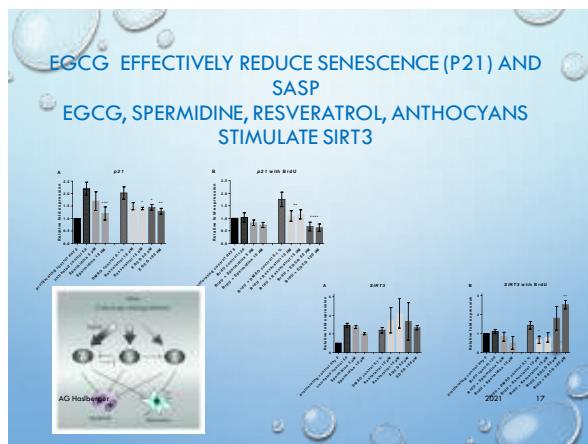
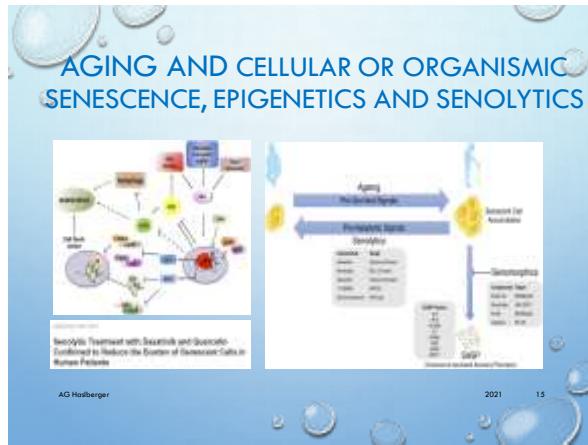
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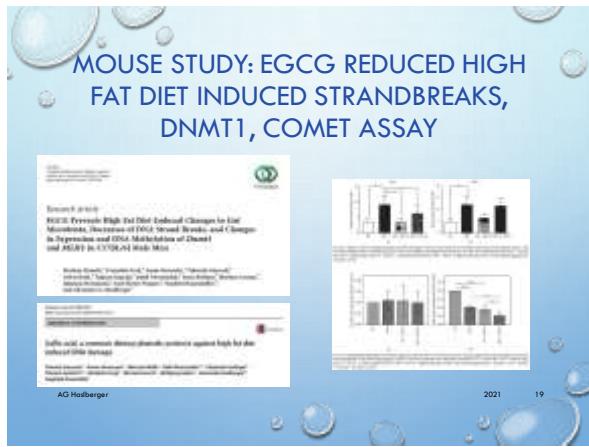


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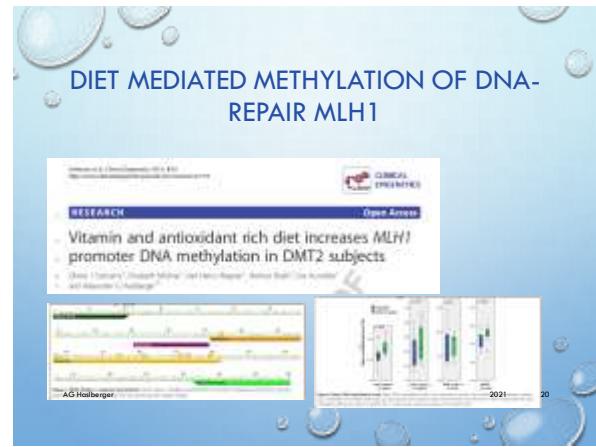
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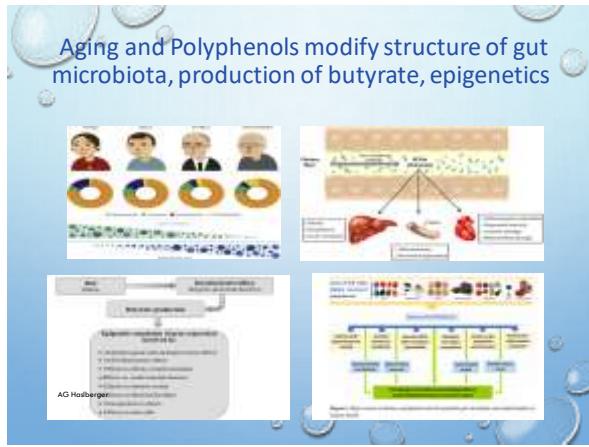
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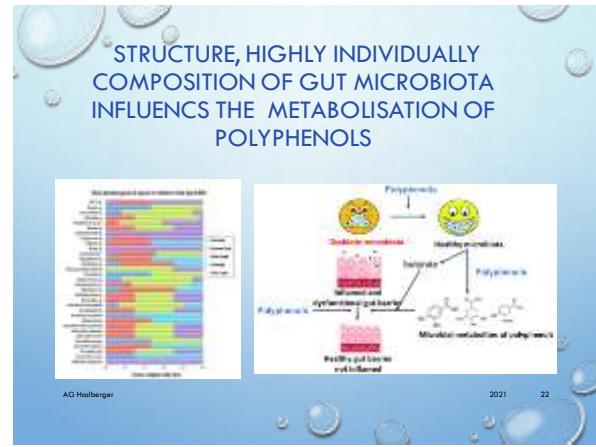
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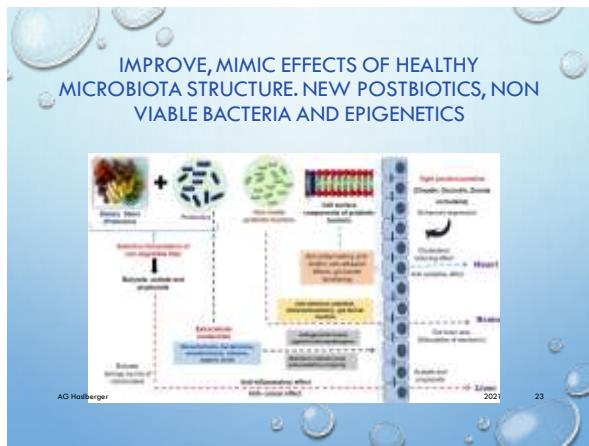
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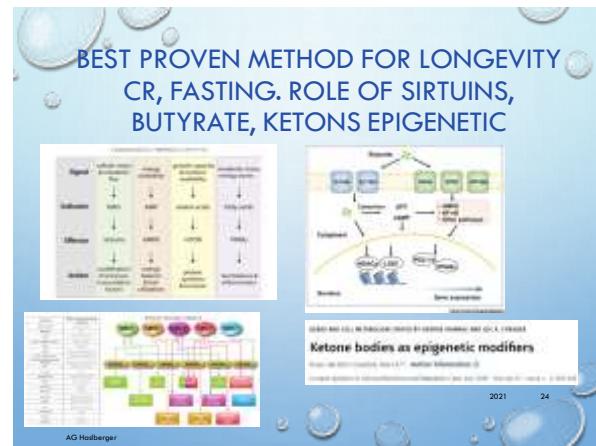
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MOSTLY DTC TESTING FOR NUTRITIONAL ADVICE IS BASED ON CHEAP SNP TESTING ONLY, THE PENETRANCE OF SNPs IS LOW

For disease controlled by 1000 loci of mean relative risk of only 1.0%, a case-control study with 10,000 cases and controls can lead to selection of ~75 loci that explain >50% of the genetic variance. The 5% of people with the highest predicted risk are three to seven times more likely to suffer the disease than the population average, depending on heritability and disease prevalence. Whether an individual with known genetic risk develops the disease depends on known and unknown environmental factors.

Prediction of individual genetic risk to disease from genome-wide association studies
Fenner, E., Phipps, J., Mathewson, T., et al. and Hees, M., Haslberger, AG, et al. (2021) *Personalized nutrition: from genetic and epigenetic information to individualized dietary advice*. *Frontiers in Nutrition* 9:632211. doi: 10.3389/fnut.2021.632211

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Flagship EU- FOOD4ME STUDY RESULTS PROVE „PERSONAL NUTRITION DOES BETTER THAN ON SIZE FITS ALL“, J. MATHERS

Changes of dietary intake after personalised advice
Healthy eating index
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Changes in adiposity markers were greater in participants who were informed that they carried the FTO risk allele (level3 AA/AA carriers) than in the nonpersonalized group

Food4me
Food4me.eu
Food4me.eu/food4me-partnership-individuals-are-67/
Food4me.eu/food4me-partnership-individuals-are-67/

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PERSONAL-, PRECISION NUTRITION FOR PREVENTION AND INTERVENTION: MARKER ANALYSIS; BIOINFORMATIC DATA INTEGRATION; INTERVENTION

Precision nutrition for prevention and management of type 2 diabetes (D. D. Wang & Hu, 2018)

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MARKER FOR MAIN AGING MECHANISMS FOR IDENTIFICATION OF POSSIBLE DANGEROUS DEVELOPMENTS; „ACHILLES HEELS- CONCEPT“

- Telomeres
- SNPs
- DNA methylation
- miRNAs
- DNA methylation, epigenetic clock
- Senescence
- DNA stability

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PERSONALISED SUPPLEMENTS, FF: IDENTIFY POSSIBLE ACHILLES HEELS FROM AGING MECHANISMS, COMPOSE ADEQUATE FF- MIX

Concept Personalized additions and FF, Bioactive elements

Molecular marker based screening of drivers of aging

Selection of personalized mix of additives, functional foods, nutraceuticals, pre- and postbiotics

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Discussion

thank you

www.alexander-haslberger.at

www.My-Personal.Health

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