ERA.Net RUS

SEVENTH FRAMEWORK PROGRAMME

Epigenetic mechanisms in immune deviation during autoimmunity (EGIDA)

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ERA.Net.RUS scheme

- Started 2012 (altogether 42 funded; 11 under Health)
- Collaborative Projects with Russia
- 2-year project
- Funded by the European Commission within the Seventh Framework Programme for Research and Technological Development (FP7).
- ERA.Net aims at enhancing the coordination of national or regional research programmes in the EU Member States and Associated Countries: European Research Area (ERA).
- ERA.Net RUS aims at strengthening and intensifying the S&T cooperation between Russia and the ERA.
- ERA.Net RUS Plus

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Key elements

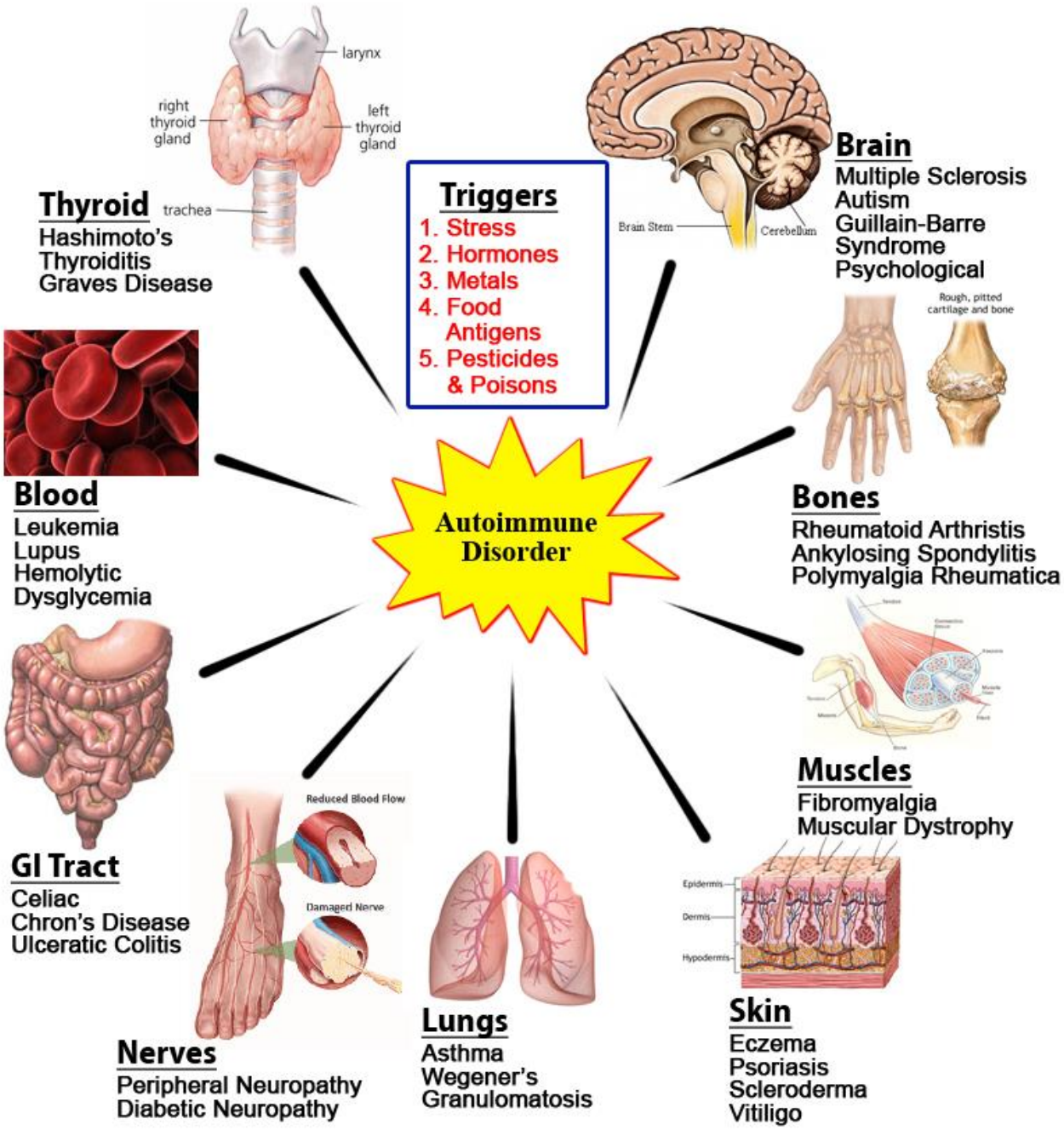
- Scientifically very strong group of researchers
- Russian coordinator with excellent track record (*Nature, Science, Immunity, Nat Rev Immunol*) and returned to Lomonossov Moscow State University from US
- ERA: collaboration between researchers from 5 (4 EU + Russia) countries
- Addressing highly novel aspect of mechanism – epigenetics
- Addressing important sector of chronic human disorders – autoimmune diseases
- Good integrative aspect
- Combining basic and clinical research
- Started november 2012 and lasted till november 2014

Epigenetic mechanisms in immune deviation during autoimmunity

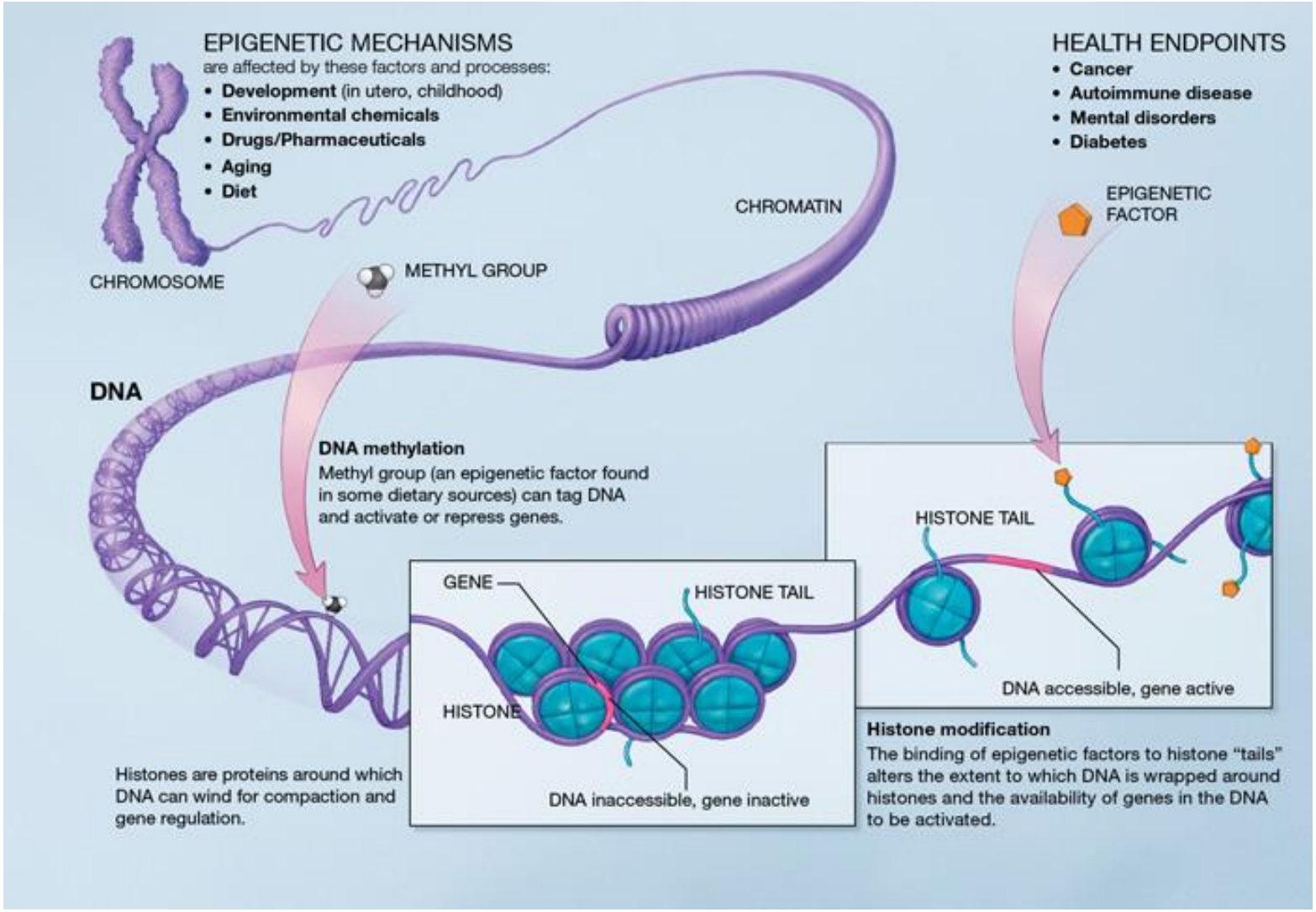
EGIDA

Due to increasing prevalence, **autoimmune diseases** have recently become a top priority of biomedical research. The main goal of our consortium is to explore the role of epigenetic gene regulation in safeguarding **immunological self-tolerance** on the one hand and in case of its deregulation in disposing to autoimmunity on the other hand. The different members of the consortium will address these issues at various stages and levels of the (auto)-immune response in a complementary fashion. To this end we are planning to employ different methodological approaches, e.g. the functional analysis of **miRNAs and other non-coding RNAs, genome-wide and site-specific DNA methylation, histone modifications and deep sequencing of the genome and transcriptome** in relevant cell populations, i.e. regulatory T cells, thymic epithelial cell subsets, Rorc(γt) positive populations of inflammatory and gut resident T cells. The epigenetic analysis will be related to the known role of these cell types in normal physiology, inflammation and autoimmunity with **particular emphasis on the central nervous system autoimmune disease multiple sclerosis**. We expect the results of this consortium to contribute to a better understanding of the mechanisms underlying organ-specific auto-aggression and to guide the **future design of new strategies for the successful treatment** of human autoimmune diseases.

Autoimmune diseases



Epigenetics:
Genomic DNA methylation and histone modifications



Contents lists available at ScienceDirect

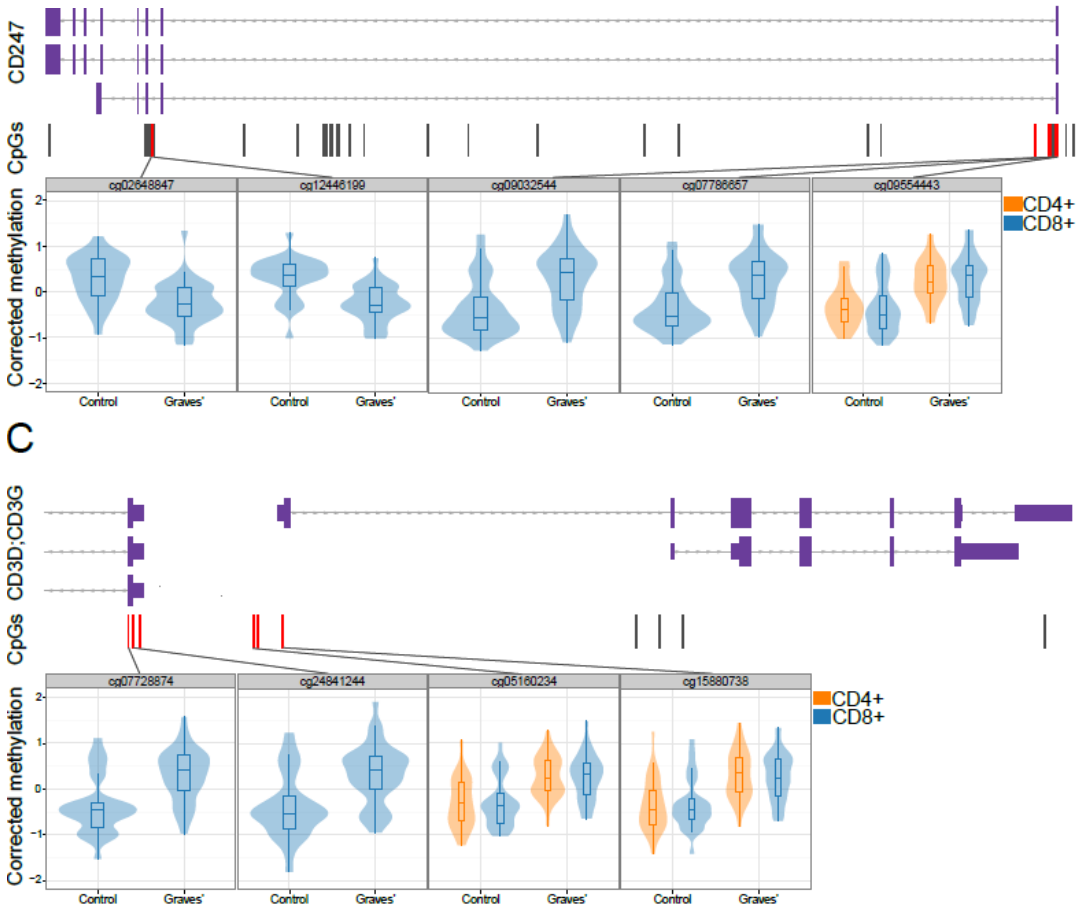
Journal of Autoimmunity

journal homepage: www.elsevier.com/locate/jautimm

Epigenetic profiling in CD4+ and CD8+ T cells from Graves' disease patients reveals changes in genes associated with T cell receptor signaling

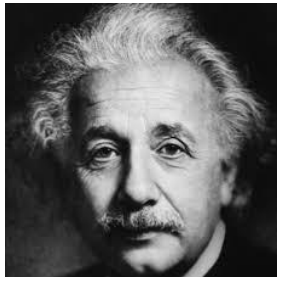
Maia Limbach [a, 1], Mario Saare [a, 1], Liina Tserel [a, 1], Kai Kisand [a], Triin Eglit [b, c], Sascha Sauer [d], Tomas Axelsson [e], Ann-Christine Syvänen [e], Andres Metspalu [f], Lili Milani [f, **], Pärt Peterson [a, *]

DNA methylation changes in T cells from patients with Graves disease (autoimmune hyperthyroidism)



Points to consider

- Relatively high competition at application stage
- In some topics Estonian scientists may have good position to apply
- You need a strong group and novel innovative idea
- Decision-making and project start/end schedule will be delayed
- Research is funded (f. ex in contrast to COST scheme)
- Funded by national research agency (ETAg/Archimedes in Estonia)
- Funding source is “internationalization“ – each partner funded separately - received 1/3 of what we applied
- Rather a supportive funding - not full cost funding
- Partners need to adapt to common aim
- Experience with EU projects is benefit (esp. coordination)
- Not too bureaucratic but prepare yourself for double reporting
- Good opportunity to build network and expand to FP project
- The crossroads of science and politics can be difficult place
- Stick to active communication whatever is going on



That is simple, my friend.
It is because politics is more difficult than physics.

Thank you!