Universidad de Navarra

Máster en Investigación Biomédica
Facultad de Ciencias

Research Project Proposal
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Project Nº 33

Title: Characterization of the therapeutic potential of the lipid mediator Maresin 1 on obesity-induced cognitive decline during aging

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Summary:

Alzheimer's disease is the most common cause of dementia in elderly people. Diet-induced obesity, inflammation and insulin resistance have been recognized as important players in the pathogenesis of Alzheimer's disease. The current lack of effective treatments for the illness demands the identification of novel therapies that can prevent and reverse the course of this pathology.

The n-3 polyunsaturated fatty acids (n-3 PUFAs) such as EPA and DHA have been reported to improve obesity-associated metabolic disorders including chronic inflammation and insulin resistance. Moreover, several studies suggested that n-3 PUFAs can improve cognitive functions in rodents. n-3 PUFAs are substrates for the formation of specialized proresolving lipid mediators (SPMs) with more potent anti-inflammatory properties that their precursors such as Resolvins, Protectins and Maresins. Recently, our research group has reported that Maresin 1 improves insulin sensitivity and attenuates adipose tissue inflammation in ob/ob and diet-induced obese mice.

The aim of this collaborative project is to characterize the effects of MaR1 treatment on cognitive function in aged animals fed during a long-term period with a high fat diet, as well as to identify the potential molecular mechanisms (genes, proteins and inflammatory factors) involved at central and peripheral level.

References

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