**Supplementary materials**

**Materials and Methods**

*Randomization and masking*

The assignment was done randomly using integrated electronic case report form (eCRF) randomization, warranting concealment of group allocation. Randomization was done by Medidata software, assigning an individual subject code. The corresponding product allocation was managed by a supply manager who was independent of the study. All participants and study staff were blinded to active supplementation or placebo assignment (both sets of capsules and powdered mix looked identical and tasted similar). Each kit box for monthly consumption was labelled by manufacturers with individual codes. Randomization was stratified using the minimization method (implemented in Medidata-Balance). The strata were center, age (70 to 74.9 years; 75 to 80 years; >80 years), sex (female; male) and MMSE score (24 to 27; 28 to 30).

*Intervention*

Doses were supposed to be taken at the same part of the day during a meal (preferably breakfast). Active soft gel capsules provided 125 mg of EPA and 250 mg of DHA from non-genetically modified organism (GMO) algal vegetable oil per unit. The rest of nutrients were given in the powdered drink mix, which was also composed by auxiliary ingredients (sucrose, flavors and sweeteners). All nutrients’ doses were determined to be under their tolerable upper intake level (UL), assuring no possibility of toxicity.

Placebo soft gel capsules contained a mixture of vegetable oils (non-GMO soya bean and corn oils) free of EPA and DHA, but with a similar profile in fatty acids as the active capsules. The powdered drink consumed by the control group did not contain any of the active ingredients and was matched for carbohydrate and protein content to the active powdered drink. It was composed of sucrose / starch, polydextrose, proteins, flavors, natural colorant and sweeteners, to replicate taste, texture and appearance of the active powdered drink.