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LIPIDS. UTILITY CARRIERS. SHORT COMMUNICATION

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Abstract: Research in field supports determining role of superior organic acids and derived substances as mediators (utility carriers), for proper functioning of cellular entities (gene activation, cell signal regulation, etc.). From this class, superior essential organic acids (polyunsaturated), fat-soluble vitamins (E, D, provitamin A), are recognized as carriers of utilities in cellular permeation ("transmembrane translators") and in the regulation of nervous system functions. The dual hydrophobic/hydrophilic competence allows translation of lyophilic substances (fats and non-polar substances) and polar components or water. If the attractive forces are greater than those of Brownian repulsion and motion, the particles clump together to form aggregates or coagules, resulting in complex internal inhomogeneous structures [4]. This process of self-assembly of lipid layers assigns defined properties to the "barrier" between cell/cellular elements and the outside world. Moreover, this dual manifestation allows the cell membrane to separate molecular species and allow through "transmembrane channels" "passage" of a wide range of proteins (Fig. 1). Studies in field of lipoproteins (colloidal entities that transport insoluble lipids in blood, lymph, cerebrospinal fluid) are of particular interest, because disturbances in lipoprotein metabolism (eg cholesterol) are one of the causes responsible for mortality among Western populations [1, 2, 3].

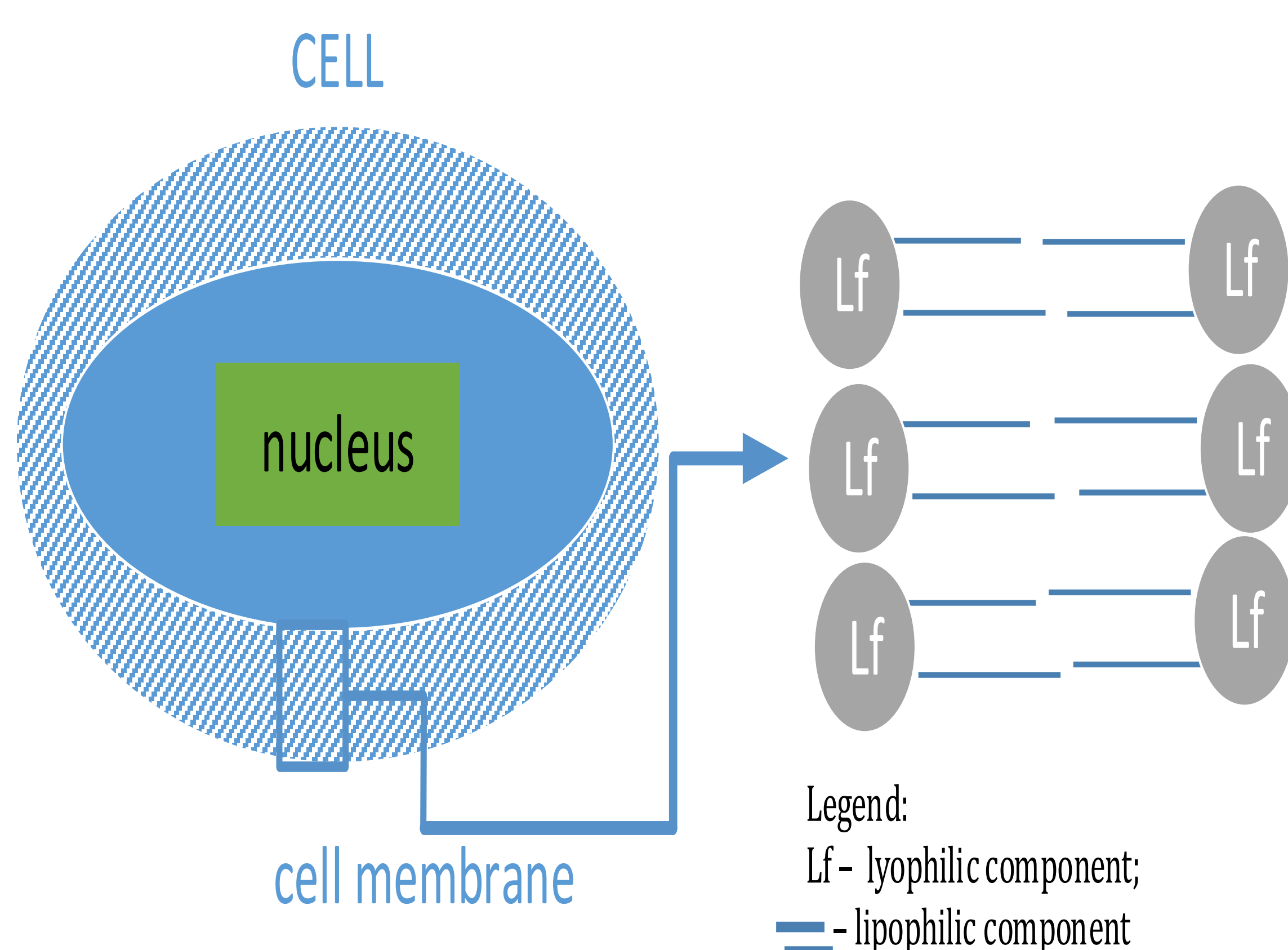


FIG. 1. Cell membrane-lipid layers, "barrier" between cell/cellular elements and the outside world

• Conclusions

Previous claims support the contribution of lipid competencies to the "design" of "personalized" functions with "targeted" applications in diet and treatment of various diseases. Advances in lipid competence design have as substrate the possibility of their stereospecific orientation, in the triacylglyceride molecule.

• Reference

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