

Relación entre el nivel y distribución de ácido arquidónico en macrófagos y el contenido celular de plasmalógenos

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La disponibilidad de ácido araquidónico libre (AA) constituye un factor limitante para la síntesis de eicosanoides. El AA no se distribuye de modo homogéneo entre los fosfolípidos de membrana, lo cual se debe en gran parte a la acción de la transacilasa independiente de coenzima A (CoA-IT), una enzima que mueve el ácido graso principalmente desde las especies diacil a especies que contienen enlaces éter e la posición sn-1, en particular los plasmalógenos de etanolamina. En este trabajo se ha examinado la dependencia de la remodelación AA en fosfolípidos con el contenido de especies plasmalógenas, utilizando la línea celular de macrófagos RAW264.7 y sus variantes deficientes en plasmalógenos, RAW.12 y RAW.108. En los tres tipos celulares, la remodelación de AA entre fosfolípidos ocurrió con una magnitud y cinética similares, lo que demuestra que el contenido celular de plasmalógenos no influye en el proceso. La estimulación celular con zimosán, un derivado de levadura, tampoco ejerció efecto alguno sobre la remodelación de AA, pero la incubación de las células en medios ricos en AA indujo un notable retraso del el proceso. Además, la disminución de la expresión de la fosfolipasa A₂ citosólica de grupo IVC (cPLA₂γ) por silenciamiento de RNA redujo significativamente la remodelación de AA. La inhibición de otras formas de fosfolipasa A₂ tales como la fosfolipasa A₂ citosólica de grupo IVA, la fosfolipasa A₂ independiente de calcio de grupo VIA o la fosfolipasa A₂ secretada no tuvo ningún efecto. Estos resultados revelan nuevas características de regulación de las reacciones de transacilación mediadas por CoA-IT en la homeostasis AA celular y sugieren un papel hasta ahora desconocido para cPLA₂γ en el mantenimiento de la composición de fosfolípidos de membrana a través de la regulación de la remodelación de AA.

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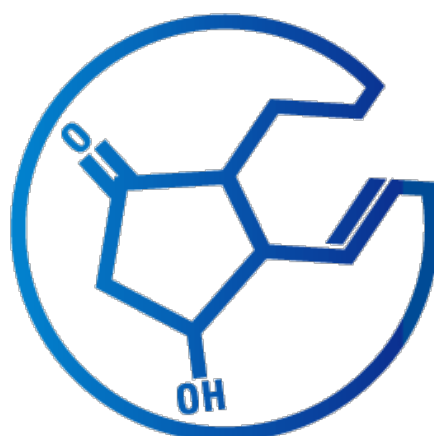
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