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## Short Talk 11 - Glycerol regulation in human adipocytes from a molecular perspective

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Aquaglyceroporins are integral membrane proteins known to facilitate transport of glycerol. The aquaglyceroporin AQP7 is expressed in adipocytes where it regulates glycerol efflux as it translocate to the plasma membrane during lipolysis as a result of catecholamine stimulation. Deletion of AQP7 in mice leads to development of obesity and adipocyte hypertrophy, suggesting an important role in human metabolism. We propose a molecular mechanism where the AQP7 mobility in adipocytes is dependent on perilipin 1 and protein kinase A. Structural analyses combined with ex vivo studies in human primary adipocytes, demonstrate that perilipin 1 binds to AQP7, and that catecholamine activated protein kinase A phosphorylates the N-terminus of AQP7, thereby reducing complex formation.

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