

Exploring Phostensin/PP1 Regulating Endosomal Trafficking Function

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Phostensin (PTS) encoded by *KIAA1949* serves as a scaffold protein that contains one PP1 docking site, one novel EHD binding motif and one actin binding motif. Mutation of EHD binding motif of PTS will affect the endocytic transport of transferrin in 293T cells. The endocytic recycling plays a critical role in regulation of cellular functions. Many proteins, such as Rab proteins, EHD proteins and their effector proteins, are involved in regulation of endocytic recycling. Recent studies have revealed that phosphorylation of Rab proteins plays the important roles in regulation of endocytic recycling. PKC is one of the kinases that can phosphorylate some Rab proteins. In this study, I will investigate whether PTS targets PP1 to endocytic vesicles to dephosphorylate PKC-phosphorylated Rab11, in turn regulating the endocytic recycling of transferrin in 293T cells. All findings will allow us to better understand the role of PP1 in regulation of endocytic recycling.

探討 Phostensin/PP1 調控胞內體運輸功能

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由 *KIAA1949* 編碼的 Phostensin (PTS) 是一種支架蛋白，PTS 含有一個 PP1 結合位點、一個新的 EHD 結合基序和一個肌動蛋白結合基序。PTS 的 EHD 結合基序的突變將影響轉鐵蛋白在 293T 細胞中的內吞轉運。內吞循環在細胞功能的調節中扮演重要作用。許多蛋白質，如 Rab 蛋白、EHD 蛋白及其效應蛋白，都參與內吞循環的調節。最近的研究顯示，Rab 蛋白的磷酸化在胞吞循環的調節中扮演重要角色。PKC 是可以磷酸化某些 Rab 蛋白的激酶之一。在這項研究中，我將研究 PTS 是否將 PP1 靶向內吞小泡，使 PKC 磷酸化的 Rab11 被去磷酸化，進而調節 293T 細胞中轉鐵蛋白的內吞循環。所有發現將使我們能夠更了解 PP1 在調節內吞循環中的作用。