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Epidermal Growth Factor Causes the Decrease of CD146 Level Not Related to Its Internalization in Human Endometrial Mesenchymal Stromal Cells

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We have previously shown using flow cytometry that during prolonged cultivation of endometrial MSC in the presence of EGF, the amount of CD146 on the plasma membrane decreased. One of the possible explanations is the increased non-specific CD146 internalization under such conditions. In this study using confocal microscopy we showed that in the control cells CD146 is localized not only on the plasma membrane, but also in vesicles where it partially colocalized with markers of early and recycling endosomes. However, stimulation of endocytosis of the EGF receptor does not affect the number of CD146⁺ vesicles until at least 60 min, although the number of endosomes containing the EGF receptor increases significantly. In addition, only small portion of EGFR-positive endosomes contained CD146. Moreover, during cultivation in the presence of EGF for 5 days the total fluorescence intensity of both CD146 and the EGF receptor in the whole cell decreases. Thus, the decrease in the amount of CD146 during prolonged incubation in the presence of EGF is not associated with an increase of its endocytosis.

Keywords: CD146, human mesenchymal stromal cells, epidermal growth factor