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Hypoxia-inducible microRNA-218 inhibits trophoblast invasion by targeting LASP1: Implications for preeclampsia development

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Abstract

Preeclampsia (PE) is a major contributor to maternal morbidity and mortality. However, the molecular mechanisms underlying PE progression are not well characterized. Here, we investigated the role of miR-218 in PE development. The expression of miR-218 and its host genes SLIT2 and SLIT3 was up-regulated in preeclamptic placentae compared to normal placentae. miR-218 expression was induced by hypoxia and decreased after knockdown of HIF-1α in an extravillous trophoblast cell line (HTR-8/SVneo). Chromatin immunoprecipitation assays showed direct binding of HIF-1α to the promoters of SLIT2 and SLIT3. Bioinformatics analysis identified LASP1 as a direct target of miR-218. Overexpression of miR-218 repressed the