THE DISINTEGRIN DOMAIN OF HUMAN ADAM9 (ADAM9D) SUPPORTS TUMOR CELL ADHESION

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Members of the ADAM (A Disintegrin and Metallopeptidase) protein family are composed by a series of conserved protein domains including a disintegrin domain. The ADAMs play important roles in many biological processes such as fertilization, angiogenesis, neurogenesis, heart development, and cancer. The objective of this work was to study the effect of the disintegrin domain of the human ADAM9 (ADAM9D) on cell adhesion. For that, specific primers based on the human ADAM9D were designed (GenBank accession number NM003816). Total RNA from VMM12 human melanoma cells was used for an RT-PCR reaction with the Superscript RT-PCR kit (Invitrogen). One band of 270bp corresponding to the molecular mass of ADAM9D was amplified and cloned into the pGEX-4T-1 vector (GE Healthcare). The new construct (pGEX-ADAM9D) was used to transform *E. coli* AD494(DE3) cells. The synthesis of GST/ADAM9D was induced by IPTG (0.5mM, 4 hours) as confirmed by SDS-PAGE. After purification by affinity chromatography on a Glutathione Sepharose 4B resin (GE Healthcare), the ADAM9D was released from GST by cleavage with thrombine. The ADAM9D was able to promote cell adhesion of K562 and DU-145 tumor cell lines. In conclusion, we suggest that the disintegrin domain of human ADAM9 acts as an adhesion molecule. More experiments are being prepared to determine the specific receptors to this protein and the resulting effects of its binding.

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