

Background

EGF-like repeat and discoidin I-like domain-containing protein 3 (EDIL3; also Del-1 and integrin-binding DEL1) is a 52 kDa extracellular matrix protein that is expressed by endothelial tissues during embryonic vascular development (1). Human EDIL3 is synthesized as a precursor with a 16 amino acid (aa) signal sequence and a 464 aa mature chain (SwissProt # O43854). The mature chain is composed of three epidermal growth factor (EGF) repeats and two discoidin-I-like domains (1). The second EGF repeat contains an RGD motif (1). Splicing variants produce two isoforms for human EDIL3. Isoform 2 has an A->G substitution at aa 66 and a deletion of aa 67 - 76 found in isoform 1. Mature human EDIL3 shares 96% aa sequence identity with mature mouse EDIL3. The RGD motif of EDIL3 binds $\alpha v \beta 5$ integrin, which, in turn, leads to increased angiogenic transcription factor HoxD3 expression (2). HoxD3 activates $\alpha v \beta 3$ and uPA, resulting in the transformation of resting endothelial cells to an angiogenic state (2 - 4). EDIL3 becomes quiescent at the time of birth, and is no longer expressed in normal adult tissues. It has been found, however, re-expressed in a number of human tumors as well as in ischemic muscles and ischemic brain tissue, which may play an important role in adult angiogenesis (2, 5 - 6). EDIL3 promotes adherence and migration of endothelial cells, and acts as an endothelial cell survival agent through upregulation of Bcl-2 expression (7). Exogenous application of EDIL3 has been demonstrated to augment angiogenesis and improve blood flow and tissue function in murine models of hind-limb ischemia (6, 8), cardiac ischemia (9) and cerebral ischemia (2). EDIL3 has also been shown to be an endogenous inhibitor of inflammatory cell recruitment by interfering with the integrin LFA-1-dependent leukocyte-endothelial adhesion (10).

References:

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Description

Source	Chinese Hamster Ovary cell line, CHO-derived Val17 - Glu480 with a C-terminal 6x His Accession # O43854
N-terminal Sequence Analysis	Val17, Asp24
Predicted Molecular Mass	52 kDa

Specifications

SDS-PAGE	60 - 65 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of SVEC4-10 mouse vascular endothelial cells (ATCC: CRL-2181). When 5×10^4 cells/well are added to rhEDIL3 coated plates (5 μ g/mL, 100 μ L/well), approximately 45 - 70% will adhere after 60 minutes at 37 °C. Optimal dilutions should be determined by each laboratory for each application.
Endotoxin Level	<1.0 EU per 1 μ g of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS. See Certificate of Analysis for details.

Preparation and Storage

Reconstitution	Reconstitute at 200 μ g/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

2/18/2010

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NOT FOR USE IN HUMANS