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Validity of HB-EGF as Target for Human Neuroblastoma Therapy.

[Nam SO¹](#), [Yotsumoto F²](#), [Miyata K¹](#), [Souzaki R³](#), [Taguchi T³](#), [Kuroki M⁴](#), [Miyamoto S⁵](#).

[Author information](#)

Abstract

BACKGROUND/AIM:

Neuroblastoma (NB) is the most common and lethal extracranial solid tumor in children. The present study aimed to verify that the heparin-binding epidermal growth factor-like growth factor (HB-EGF) is a rational target in NB therapy.

MATERIAL AND METHODS:

We examined expression of EGFR ligands in four NB cell lines using 2-dimensional culture (DC) and 3DC conditions. To assess the anti-tumor effect of cross-reacting material 197 (CRM197), which is a specific inhibitor of HB-EGF, on NB cells, we also performed terminal deoxynucleotidyl transferase dUTP nick-end labeling (TUNEL) assay to detect apoptotic cells.

RESULTS:

HB-EGF was predominantly expressed in two out of four NB cell lines under 2DC and 3DC conditions. CRM197 significantly induced apoptosis of NB cells with high HB-EGF expression.

CONCLUSION:

HB-EGF plays an important role in neuroblastoma tumorigenesis and CRM197 showed an effective antitumor effect in neuroblastoma cells.

KEYWORDS:

CRM197; HB-EGF; Neuroblastoma