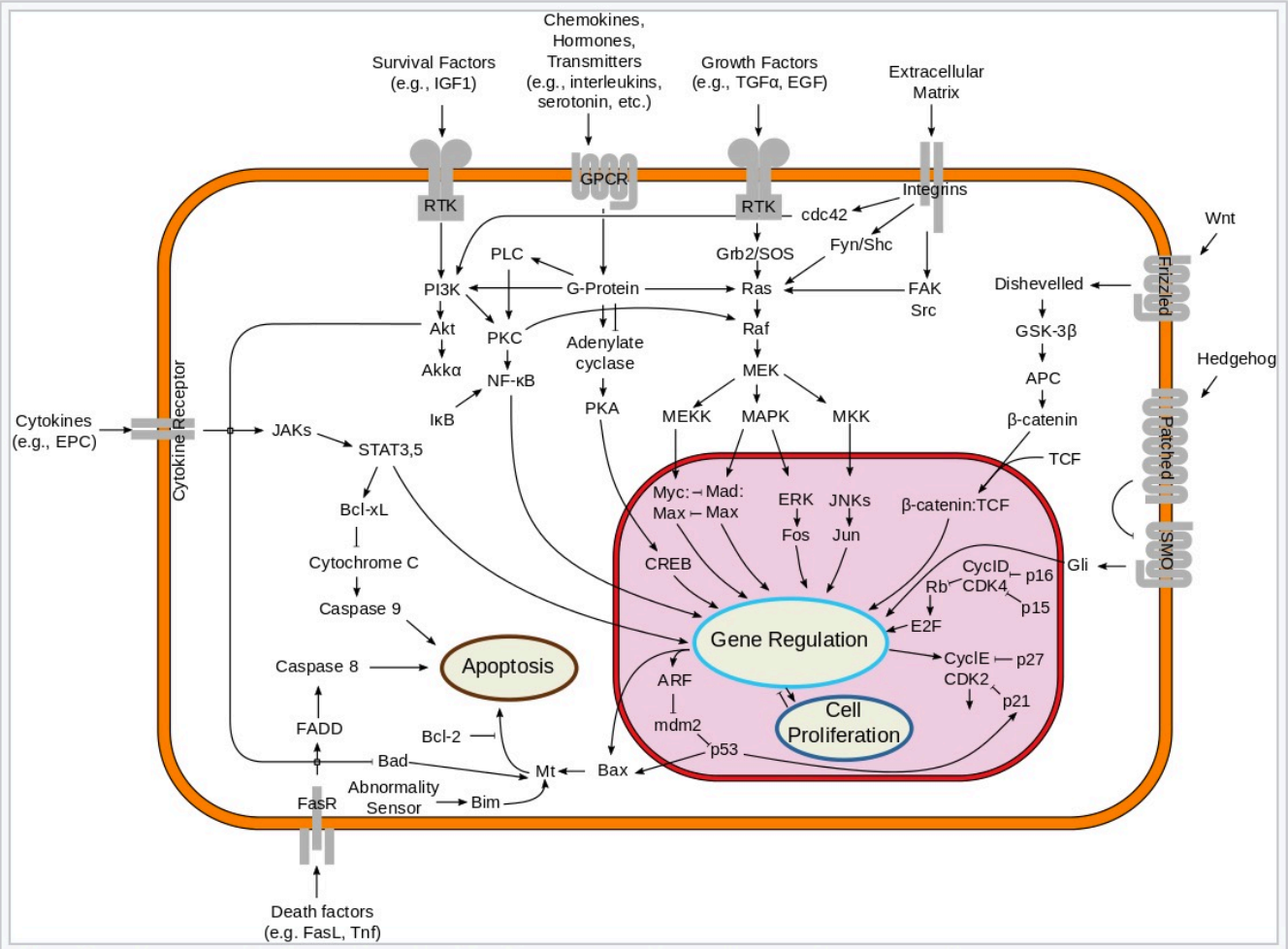
RAF kinase

The mitogen-activated protein kinase (MAPK) pathway.

RAF1 is between RAS and MEK just above the centre of the diagram.



Simplified representation of major signal transduction pathways in mammals.

RAF kinases are a family of three serine/threonine-specific protein kinases that are related to retroviral oncogenes.

The mouse sarcoma virus 3611 contains a RAF kinase-related oncogene that enhances fibrosarcoma induction. RAF is an acronym for Rapidly Accelerated Fibrosarcoma.

RAF kinases participate in the RAS-RAF-MEK-ERK signal transduction cascade, also referred to as the mitogen-activated protein kinase (MAPK) cascade.

Activation of RAF kinases requires interaction with RAS-GTPases.

The three RAF kinase family members are:

A-RAF

B-RAF

c-Raf

Current standard treatment for glioma patients is surgical removal followed by radiotherapy and adjuvant chemotherapy. Due to therapeutic resistance and tumor recurrence, efforts are ongoing to identify the molecules that are fundamental to regulate the tumor progression and provide additional methods for individual treatment of glioma patients. By studying the initiation and maintenance of glioma, studies focused on the targets of tyrosine kinase receptors including EGFR, PDGFR and other crucial signal pathways such as PI3K/AKT and RAS/RAF/MAPK pathway. Furthermore, recent advances in targeting immunotherapy and stem cell therapy also brought numerous strategies to glioma treatment [1].

1)
Lin L, Cai J, Jiang C. Recent advances in targeted therapy for glioma. Curr Med Chem. 2016 Dec 23. [Epub ahead of print] PubMed PMID: 28019637.